



ADB Working Paper Series

**THE BANK OF JAPAN'S SUPER-EASY
MONETARY POLICY FROM 2013–2018**

Sayuri Shirai

No. 896
November 2018

Asian Development Bank Institute

Sayuri Shirai is a visiting fellow at the Asian Development Bank Institute.

The views expressed in this paper are the views of the author and do not necessarily reflect the views or policies of ADBI, ADB, its Board of Directors, or the governments they represent. ADBI does not guarantee the accuracy of the data included in this paper and accepts no responsibility for any consequences of their use. Terminology used may not necessarily be consistent with ADB official terms.

Working papers are subject to formal revision and correction before they are finalized and considered published.

The Working Paper series is a continuation of the formerly named Discussion Paper series; the numbering of the papers continued without interruption or change. ADBI's working papers reflect initial ideas on a topic and are posted online for discussion. Some working papers may develop into other forms of publication.

Suggested citation:

Shirai, S. 2018. The Bank of Japan's Super-Easy Monetary Policy from 2013–2018. ADBI Working Paper 896. Tokyo: Asian Development Bank Institute. Available:
<https://www.adb.org/publications/bank-japan-super-easy-monetary-policy-2013-2018>

Please contact the authors for information about this paper.

Email: sshirai@adbi.org

Asian Development Bank Institute
Kasumigaseki Building, 8th Floor
3-2-5 Kasumigaseki, Chiyoda-ku
Tokyo 100-6008, Japan

Tel: +81-3-3593-5500
Fax: +81-3-3593-5571
URL: www.adbi.org
E-mail: info@adbi.org

© 2018 Asian Development Bank Institute

Abstract

Unconventional monetary easing conducted by the Bank of Japan (BOJ) since 2013 has contributed to the yen's depreciation, higher stock prices, and higher corporate profits. Meanwhile, the impacts on aggregate demand and inflation have not been as strong as the BOJ expected while the adverse impact on financial institutions and deep distortion in the financial and capital markets have become prevalent. Therefore, the BOJ will eventually need to make it more sustainable before underlying inflation approaches 2%. Leaving room for additional monetary accommodation in the event of severe recession is also essential. Keeping the possible phasing out of the program in mind, the BOJ explicitly expanded the target range to $\pm 0.2\%$, thereby effectively raising the yields of 10 years and longer and steepening the yield curve. At the same time, the BOJ introduced flexibility on exchange-traded fund (ETF) purchases that would enable "stealth tapering" or cutting the amount of annual purchase amount quietly without declaring it openly—as in the case of Japanese Government Bond (JGB) purchases. The BOJ should interpret the 2% price stability target flexibly—such as the incorporation of the 1% upper and lower range ($\pm 1\%$) to the 2% target—in order to complete tapering of both JGBs and ETFs, as well as ultimately eliminating the 10-year yield target. Since the Japanese economy is likely to face an economic slowdown after the 2019 consumption tax hike and the 2020 Tokyo Olympic Games, it will be much longer before the BOJ can take decisive steps to normalize monetary policy by raising the short-term policy rates like the Federal Reserve.

Keywords: Bank of Japan, Japanese Government Bonds, Exchange-Traded Funds, 2% Price Stability Target

JEL Classification: E3, E4, E5

Contents

1.	INTRODUCTION	1
2.	ADOPTION OF QUANTITATIVE AND QUALITATIVE MONETARY EASING AND ITS EXPANSION	2
2.1	Features of QQE Adopted in April 2013	2
2.2	Expansion of QQE Announced in October 2014	2
3.	NEGATIVE INTEREST RATE, YIELD CURVE CONTROL, AND THE JULY 2018 ADJUSTMENTS	3
3.1	The Negative Interest Rate Policy	3
3.2	The Yield Curve Control Policy	7
3.3	Monetary Policy Adjustments Announced in July 2018	11
4.	EFFECTIVENESS OF UNCONVENTIONAL MONETARY EASING	12
4.1	Inflation Performance and the BOJ's Optimistic Inflation Forecast	12
4.2	Sluggish Inflation Performance and Weak Households' Spending	15
4.3	Weak Wage Performance and Wage Expectation	15
4.4	Upward Bias in Households' Price Perception and Inflation Expectation	17
4.5	Is Portfolio Rebalance Taking Place in Japan?	19
5.	CONCLUSIONS	19
	REFERENCES	21

1. INTRODUCTION

In January 2013, the Bank of Japan (BOJ), led by previous Governor Masaaki Shirakawa at the time, introduced its 2% price stability target. In April 2013, under current Governor Haruhiko Kuroda, the BOJ adopted massive and various monetary easing tools to achieve the target—so-called *Quantitative and Qualitative Monetary Easing (QQE)*. This was expanded in October 2014, and supplemented with a negative interest rate in January 2016 and yield curve control in September 2016. The BOJ's financial assets as a share of gross domestic product (GDP) recorded about 100% currently—much greater than the European Central Bank (about 30%) and the Federal Reserve (about 25% in 2014 when the maximum had been reached). While the BOJ's asset purchasing program was extended from the *Comprehensive Monetary Easing (CME)* under then Governor Shirakawa, its scale of monetary accommodation and diversity of monetary easing tools adopted are unprecedented and extraordinary. Moreover, raising inflation to achieve the 2% target in a low inflationary or mild deflationary environment like Japan is a rare experiment in the world. Many central banks have adopted the inflation-targeting framework, but in the context of a high-inflation environment, so containing inflation was their key objective.

In April 2013, Governor Kuroda appeared certain that the 2% price stability target would be achieved in around 2 years since all necessary measures had been taken. More than 5 years have since passed, and the BOJ continues to lag behind other major central banks including the Federal Reserve and the European Central Bank (ECB). While the Fed struggled to achieve the 2% long-run goal, inflation based on personal consumption expenditure (PCE) and core inflation (based on PCE excluding food and energy) have finally been at a level of around 2% since March 2018. In the eurozone, inflation based on the harmonized index of consumer prices (HICP) has been around 2% since April 2018, but core inflation has remained at around 1%—well below their price stability target of “below, but close to, 2%.” The BOJ is the poorest performer among the three central banks since both headline and core inflation remained substantially weaker. According to the latest September 2018 data, inflation based on the consumer price index (CPI) recorded 1.2% but CPI excluding all food and energy—an indicator that reflect goods and services mostly determined by domestic demand and supply conditions—was a mere 0.1%. In July 2018, the BOJ gave up expressing the expected timing to reach 2% inflation—after having postponed it six times after its initial claim of “around fiscal year 2015.” This is a clear indication that the BOJ has lost confidence in achieving the target in the foreseeable future.

This paper takes an overview of the BOJ's monetary policy since April 2013 when QQE was adopted and examines factors contributing to the failure of achieving the 2% price stability target. The paper is comprised of five sections. Section II briefly focuses on QQE adopted in April 2013 and its expansion in October 2014. Section III sheds light on the negative interest rate, yield curve control, and the recent monetary policy adjustment announced in July 2018—all of which could be views as “steps towards monetary policy normalization”—not yet as “clear steps of monetary policy normalization” but steps moving closer toward normalization—due to the clear deviation from the original QQE framework. These measures have given rise to ambiguity and complexity over the monetary policy framework due to inconsistency with the BOJ's communication strategies. Section IV reviews inflation performance and factors contributing to the failure of achieving the 2% price stability target. Section V concludes.

2. ADOPTION OF QUANTITATIVE AND QUALITATIVE MONETARY EASING AND ITS EXPANSION

2.1 Features of QQE Adopted in April 2013

The BOJ adopted QQE in April 2013 to achieve the price stability target of 2% at the earliest possible time, with a time horizon of about 2 years. The “quantitative” dimension referred to the expansion of the monetary base at an annual pace of ¥60–¥70 trillion—monetary base targeting (or monetary base control). The “qualitative” dimension referred mainly to the guideline for asset purchases comprising of (a) net JGB purchases at an annual pace of about ¥50 trillion (excluding the amount of reinvestment); (b) the average remaining maturity of JGB purchases of about 7 years (6 to 8 years) by purchasing JGBs all up to the maximum 40 years; and, (c) Exchange-Traded Fund (ETF) and Real Estate Investment Trust (J-REIT) purchases at an annual pace of about ¥1 trillion and about ¥30 billion, respectively. To demonstrate its intention to achieve 2% inflation in about 2 years, the BOJ announced that it would double the monetary base and the amounts outstanding of JGBs and ETFs in 2 years, and more than double the average remaining maturity of JGB purchases. At the same time, the BOJ adopted *forward guidance* that QQE would continue aiming to achieve the price stability target of 2%, as long as it is necessary for maintaining that target in a stable manner.

Monetary base control is the most important element of QQE; it indicated a shift of the *main operating target for money market operations* from the uncollateralized overnight call rate to the monetary base. One of the major tasks of the BOJ’s operational department (Financial Markets Department) is to meet the operating target as closely as possible. This means that achieving the monetary base target is prioritized over other guidelines in the conduct of monetary policy. This operating target differs from that of the Federal Reserve where the objective for open market operations continued to be specified as the federal funds rate (short-term policy rate). The Federal Reserve maintained this target even when it greatly expanded its holdings of longer-term securities through open market purchases with the goal of putting downward pressure on longer-term interest rates. *This symbolizes the priority given to “quantity” under Mr. Kuroda’s Governorship*, while the Federal Reserve treated asset purchases as supplement to the federal funds rate. To achieve this scale of monetary base expansion, JGBs were the most important financial assets purchased. The BOJ’s purchases of longer-term JGBs would result in a decline in the net supply of these bonds circulating in the markets, so that the average remaining maturity of JGBs transacted in the markets would be shortened. This would lead to a decline in the *term premium*.

2.2 Expansion of QQE Announced in October 2014

About one and a half year after the initiation of QQE, the BOJ decided to expand the annual pace of increase in the monetary base from about ¥60–¥70 trillion to about ¥80 trillion in October 2013. The main reason was a sharp decline in household spending caused by a consumption tax hike in April 2014. A decline in long-term inflation expectations caused by weaker domestic demand and an oil price drop from mid-2014 were other factors leading to the decision to expand QQE. To achieve this monetary base targeting, the amount outstanding of JGB holdings was increased by ¥30 trillion to about ¥80 trillion. With a view to encouraging a further decline in interest rates across the entire yield curve, moreover, the BOJ extended the average remaining

maturity target of JGB purchases from about 7 years (6–8 years) to about 7–10 years. In addition to the JGBs, the BOJ decided to increase purchases of risk assets such as ETFs and J-REITs, tripling their amounts outstanding and increasing their annual pace of purchase from about ¥1 trillion to about ¥3 trillion and from about ¥30 billion to about ¥90 billion, respectively. The average remaining maturity of JGB purchases was extended further from about 7–10 years to about 7–12 years in December 2015.

3. NEGATIVE INTEREST RATE, YIELD CURVE CONTROL, AND THE JULY 2018 ADJUSTMENTS

3.1 The Negative Interest Rate Policy

In January 2016, the BOJ surprised the public and the markets when it announced its decision to adopt a negative interest rate on part of excess reserves, with effect from 16 February, the possibility of which had been rejected by the BOJ for many years. The BOJ's new view was that a negative interest rate would expand aggregate demand and inflation expectations, thereby accelerating the path toward 2% inflation. The negative interest rate policy is applicable to current accounts that financial institutions hold at the BOJ. Since adopting the *Complementary Deposit Facility* in October 2008, the BOJ had initiated payment of positive interest on the current account balances and maintained 0.1% until adoption of a negative interest rate.¹ Out of the current account balances, no interest rate (zero interest rate) is applied to required reserve balances.

3.1.1 The Negative Interest Rate Policy and Three-Tier System

The negative interest rate policy gave rise to the complicated three-tier system where the outstanding current account balance was decomposed into three types to which a positive 0.1%, zero percent, and –0.1% is applied, respectively. These respective balances are called *Basic Balance*, *Macro Addon Balance*, and *Policy-Rate Balance*, respectively. The specific amount has since been transferred regularly from the Policy-Rate Balance to the Macro Addon Balance using the Benchmark Ratio—to maintain the amount outstanding of around ¥10 in the Policy-Rate Balance on a monthly basis (see Shirai [2018a] for details). The rationale for adopting the three-tier system was to mitigate adverse impacts of a negative interest rate on the profitability of financial institutions through a decline in interest income paid by the BOJ on the current account balance—as well as to maintain the functioning of call markets through promoting inter-bank transactions. The system is more complicated than the ECB system, where a negative interest rate (–0.4) has been applied to all excess reserves and the deposit facility.

Hereafter, the BOJ announced that monetary easing would be pursued by making full use of possible measures in terms of three dimensions by adding interest rate to existing quantitative and qualitative dimensions—so called “QQE with a Negative Interest Rate.” On the quantitative dimension, the BOJ stressed again a willingness to expand the monetary base since it could technically continue to purchase the JGBs from the markets given that their holdings accounted for only 30%–40% of the outstanding amount issued. The BOJ also rephrased the forward guidance that it would

¹ The BOJ introduced the positive (0.1%) interest rate on the current account balance in 2008 as a floor to the interest rate corridors. This practice is adopted by major central banks including the Federal Reserve, the European Central Bank, and the Bank of England as well. The floor could be established because no banks should be willing to lend at a rate below this rate.

continue with QQE with a Negative Interest Rate, aiming to achieve the price stability target of 2%, as long as it is necessary for maintaining that target in a stable manner.

3.1.2 Benefits and Costs of the Negative Interest Rate Policy

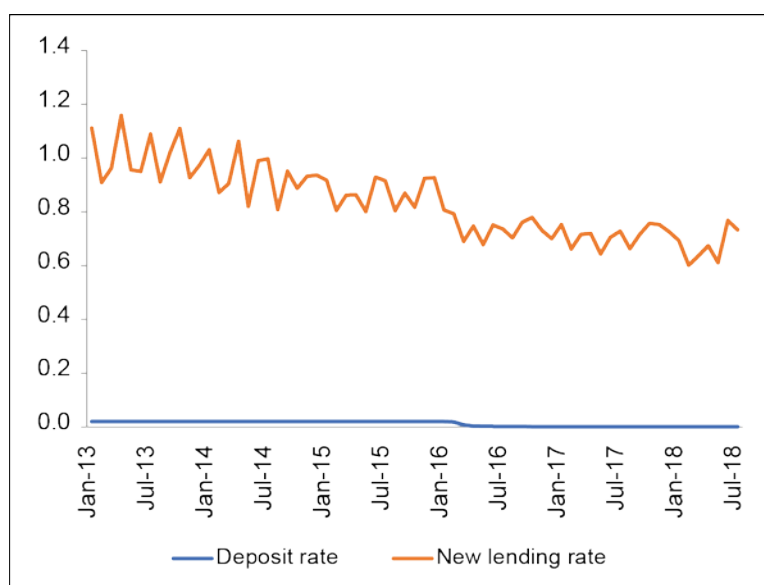
Mainly, three developments were driven by the negative interest rate: (1) a temporary expansion of residential investment and J-REIT market, (2) greater issuance of longer-term corporate bonds, and (3) greater foreign portfolio investment by Japanese financial institutions. On the other hand, the negative interest rate policy flattened the entire yield curve and resulted in reducing longer-term yields to a significant degree. While the BOJ emphasized this was a result of its successful monetary policy, the negative interest rate policy raised a number of concerns and had side effects. These adverse impacts can be classified into four issues: (1) a decline in the profitability of the financial sector and potential financial instability risk; (2) promotion of cash substitution and a deterioration in households' sentiments; (3) a decline in liquidity and weakened functions of the JGB markets; and (4) the BOJ's operational challenges and balance sheet risk (for details, see Shirai 2018a). These effects appear to have exceeded the aforementioned benefits.

First, the negative interest rate policy squeezed the spreads between lending and deposit interest rates further, contributing to a further decline in banking sector profitability (Figure 1). Banks found it difficult to charge a negative deposit interest rate to both retail and large depositors for fear of losing customers in the overcrowded banking sector. This adverse impact is particularly severe in Japan, as the loan-to-deposit ratio has remained below 70% and declined further because deposit growth has consistently exceeded credit growth. Banks also received a smaller amount of interest income from JGB holdings due to lower coupon rates. For the time being, they could enjoy unrealized valuation gains from JGB holdings or capital gains from selling them. Nevertheless, they found it difficult to reinvest JGB redemptions in an extremely low interest rate environment. Banks raised concerns over the risk of undermining financial intermediation in case of current monetary policy continuing for a long time. As for institutional investors, an excessive decline in yields on long-term and super-long-term JGBs (with remaining maturity of over 10 years) made it difficult for insurance companies and pension funds to maintain sufficient returns from these assets. Lower yields also increased future pension benefit obligations through a lower applied discount rate. Although the negative interest rate policy had not yet generated a substantial adverse impact as a whole on these industries, institutional investors had begun to express concerns over the future viability of their business models. In fact, many insurance companies stopped providing savings-type insurance plans due to limited returns, while others raised premiums for new clients.

Second, household behavior and sentiment appear to have been adversely affected by the negative interest rate policy. There was a rapid increase in notes in circulation until around September 2016 due to a certain degree of conversion from deposits into cash holdings in safety boxes at home or banks. The growth rate on notes in circulation exceeded 5% until September 2018 while the growth rate on individual deposits dropped to around 1.2% in 2016 from 2.5% in 2014–2015. The ratio of notes in circulation to GDP rose to about 20% in 2016 or one of the highest among advanced economies. There is a clear contrast with Sweden, where the ratio continues to drop even after adoption of a negative interest rate (−0.5%). Japan remains a relatively cash-based society compared with Sweden, an economy that is highly digitized and where cash is hardly used, so that a negative interest rate had a greater impact on the substitution of cash for deposits in Japan than in Sweden. An increase in cash holdings reflects households' renewed recognition of a very low retail deposit rate. According to

the BOJ’s *Opinion Survey on the General Public’s Views and Behavior*, the diffusion index (DI) for the interest rate level—the difference between the ratio of respondents with “too high” and those with “too low”—dropped significantly from around –40 percentage points in December 2015 to –58 in March 2016, and remained between –53 and –55 in June, September, and December 2016. Given that households’ deposits and cash are about three times as large as their loans, households appear to have experienced an adverse effect in terms of the net impact of the negative interest rate.

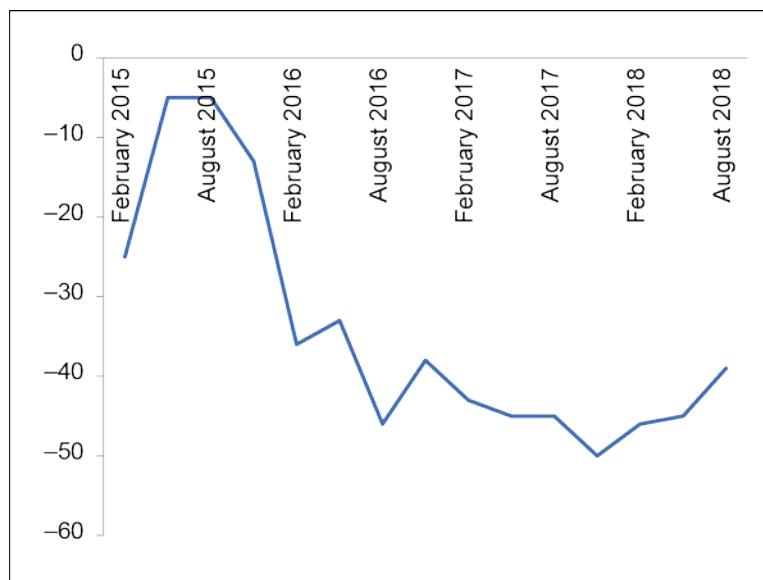
Figure 1: Difference between New Lending Rate and Deposit Rate (%)



Source: Bank of Japan.

Third, massive purchases of JGBs under QQE have deteriorated the liquidity and functioning of the JGB markets. The negative interest rate policy exacerbated these conditions further as a greater number of traditional market participants refrained from actively transacting in the market to avoid the negative interest rate. The scarcity of JGBs also led to a shrinkage of related monetary market activities. The BOJ has conducted a quarterly *Bond Market Survey* against about 40 eligible institutions on the BOJ’s outright purchases and sales of JGBs since February 2015 (Figure 2). The survey reports the diffusion index (DI) for the degree of bond market functioning with regard to current conditions from the viewpoint of the company with which the respondent is affiliated. The degree of bond market functioning DI deteriorated significantly from the February 2016 survey to the August 2016 survey. From the August 2015 survey to the August 2016 survey, the DI for the current situation dropped from –5 (percentage points) to –46. The development suggested that the negative interest rate policy announced on 29 January 2016 and the subsequent drop in JGB yields reduced liquidity in the JGB market. Since then, the DI on bond market functioning has not recovered much.

Figure 2: Bond Market Functioning Diffusion Index (%)



Note: Difference between the percentage of respondents with "high" and the percentage of respondents with "low."

Source: Bank of Japan.

Fourth, the negative interest rate policy generated a more challenging environment for the BOJ's continuation of its JGB purchase program as the policy was not fully consistent with JGB purchases. It is important to recognize that applying a positive rate on the current account balance had contributed to sustaining smooth operations of the asset purchasing program. The banking sector is dominant in the financial sector in Japan with ample deposits from retail customers so that the market sizes of securities markets (such as corporate bonds and asset-backed securities) are small. Thus, the JGBs are the main financial assets purchased by the BOJ from banks to steadily expand the monetary base while such banks need to hold the JGBs mainly to fill the gap between retail deposits and loans extended to the private sector. Large banks might be more willing to sell JGBs to the BOJ to avoid potential interest rate risk; and, they could do so due to the ability to earn revenue from actively investing abroad. By contrast, the majority of regional banks have only limited alternative investment opportunities due to limited skills so that they have to examine whether their holdings of JGBs should be sold to the BOJ and earn an interest rate on excess reserves for newly increasing current accounts held with the BOJ, or, alternatively, should be held until maturity to earn a positive coupon rate. The positive rate of 0.1% on excess reserves, thus, had provided *the incentive* for these banks to sell the JGBs to the BOJ so that the expansion of the monetary base and an associated increase in asset purchases used to be consistent with the positive 0.1% interest rate. This situation is different from European countries with a negative interest rate (such as the European Central Bank and Swedish Riksbank), where these central banks could purchase bonds from foreign investors.

Therefore, the adoption of a negative interest rate reduced the sustainability of the JGB purchase, since banks became reluctant to sell the JGBs. *It is appropriate to state that the negative interest rate policy fundamentally changed the QE framework both conceptually and operationally.*

3.1.3 Unique Market Reactions

Moreover, the negative interest rate generated unique market reactions. The January 2016 announcement had been initially received by the markets with a positive surprise, but this lasted for only 2 working days. If the market reaction to this surprise had led to the yen's depreciation and the resultant higher Japanese stock prices after the announcement, it suggests that market participants viewed the policy change as additional monetary stimulus and thus positively. Indeed, the yen had depreciated against the US dollar from around ¥118.7 to around ¥121 and the Nikkei 225 Stock Average had risen from around ¥17,164 to around ¥17,518. Thereafter, however, the exchange rate of the yen against the US dollar rapidly appreciated from around ¥119 in early February to below ¥110 by in April and further to below ¥105 in mid-June. It appreciated to ¥99.08 temporarily on 24 June in response to the surprise Brexit referendum result in the United Kingdom. Thereafter, the yen vis-à-vis the US dollar fluctuated in the range of ¥100–¥106. Similarly, the Nikkei 225 Stock Average dropped below ¥17,000 from early February, and since then the stock prices have moved mostly in the range of ¥16,000 to ¥17,000. The positive market mood evaporated rapidly because the BOJ did not increase JGB purchases despite its repeated emphasis on possible additional easing in the quantitative dimension. Also, market participants appeared to have begun to recognize the negative interest rate would harm the banking sector through a cut in interest rate margins. Growing concern over the profitability of Deutsche Bank, the largest bank in Germany, as a result of litigation charges, in those days added to this view, leading to a large sell-off of banking sector stocks in Japan. Some foreign investors took the view that a negative interest rate policy was timid since only a small portion of the current account balance was subject to a negative interest rate so that the effectiveness of a negative interest rate could be weaker than that of the ECB where a negative rate was applied to all excess reserves and deposit facility.

3.2 The Yield Curve Control Policy

3.2.1 Background Prior to the Adoption of Yield Curve Control

The BOJ's communication strategy since January 2016 had repeatedly emphasised its intention to expand monetary easing in three dimensions (quantity, quality, and a negative interest rate) if necessary. Accordingly, many market participants formed expectations over additional monetary easing in three dimensions prior to the July 2016 monetary policy meeting. Contrary to their expectations, however, the BOJ expanded monetary easing in July 2016 only by increasing ETF purchases to about ¥6 trillion. This limited action could have disappointed the markets, but the BOJ skilfully avoided this by suggesting its plan to consider new but different actions that would help to achieve the 2% stability target at the earliest at its next [September] monetary policy meeting. Together with the BOJ's simultaneous decision to increase support for financial institutions to ensure smooth funding in US dollars, this suggestion contributed to market anticipation that the BOJ would revise its framework by avoiding a further decline in yields and by reducing the burden borne by financial institutions. From early September 2016, moreover, Governor Kuroda admitted openly the adverse impacts of its negative interest rate policy. In his speech delivered at *Kisaragikai Meeting* on 5 September 2016, he mentioned that the adverse impact of the negative interest rate policy on the profits of commercial banks, insurance firms, and pension funds could affect people's confidence by causing concerns over the sustainability of the financial function in a broad sense, thereby negatively affecting economic activity (Kuroda 2016b).

3.2.2 Clear Departure from the QQE Framework

Yield curve control—fixing a 10-year target at around 0% with an existing negative interest rate on the current account balance—was inconsistent with BOJ's communication strategy due to the failure to fulfil the commitment to expanding monetary easing in the three dimensions. Prior to this, Governor Kuroda, at the July 2016 press conference, had emphasized that the quantity (dimension) had not reached the limit at all and that this would not be taken lightly. Nonetheless, not only the BOJ did not increase the quantity as committed, but also the BOJ abandoned monetary base targeting. The idea of yield curve control seems to have been based on the experience of the Federal Reserve in 1942–1951, which was aimed at reducing government financing cost by pegging short-term Treasury bills at 0.375% and capping the yields on all other Treasury securities at 2.5%. Another action adopted by the BOJ in September 2016 was an official abandonment of guidelines on average remaining maturity of JGB purchases—one of the major pillars included in the qualitative dimension. This maturity guideline was introduced to prioritise exerting downward pressure on longer-term JGBs. Abandonment of the guidelines naturally resulted in fewer long-term JGB purchases.

Therefore, the BOJ clearly departed from the QQE framework by abandoning two essential pillars characterising QQE—the monetary base control and the target on average remaining maturity of JGB purchases. It is not appropriate for the BOJ to continue to use “QQE” to describe its monetary easing framework since its adoption of yield curve control essentially abandoned “quantitative” dimension.

At the same time, the new monetary framework under yield curve control introduced the inflation-overshooting commitment – continuing the monetary base until the rate of increase in core CPI (CPI excluding fresh foods) exceeds the 2% target and stays above the target in a stable manner. The inflation-overshooting commitment appears to have been inserted to appeal to market participants that quantity would not be given up completely and remind them of the BOJ's firm determination to achieve the 2% target. However, this expression is technically and conceptually redundant, since actual inflation needs to exceed 2% for many months to achieve 2% inflation in a stable manner (described in BOJ's forward guidance) since that requires to anchor long-term inflation expectations at around 2%. Given that such inflation expectations have been heavily influenced by past actual inflation—often called ‘adoptive inflation expectations’—in Japan, actual inflation must exceed 2% and remain above 2% for many months to pull up inflation expectations toward 2% (Hattori and Yetman 2017, Kamada et al. 2015). The markets largely perceived the newly introduced overshooting commitment as not credible, due to the low probability of achieving 2% inflation stably. Rather, the markets took the commitment as an assurance for continuing asset purchases for a very long time so that they can benefit from such an assurance by taking a short position in yen and a long position in US dollar due to assured interest rate differentials.

If the BOJ is truly committed to yield curve control, the amount of JGBs to be purchased should be endogenously determined by the supply and demand conditions in the JGB market. In other words, the BOJ should be ready to reduce the annual pace of JGB purchases from ¥80 trillion during a phase of strong downward pressures on longer-term yields. Nonetheless, the Statement on Monetary Policy maintained the remark about the projected continuation of JGB purchases of about ¥80 trillion—in contradiction with the concept of yield curve control. Maintaining the remark about ¥80 trillion presumably reflects the BOJ's concern about negative market reactions, should the new framework be viewed as a clear step towards tapering or a cut in the amount of JGB purchases.

3.2.3 Motivations for Adopting Yield Curve Control

Raising the 10-year yield and steepening the yield curve achieved under yield curve control are a de facto tightening of monetary easing. In my view, yield curve control was adopted for three reasons. First, it was in response to growing criticism that had emerged since the adoption of the negative interest rate and thus to mitigate adverse impacts on financial institutions as pointed out earlier. Together with the ongoing JGB purchases of about ¥80 trillion, the negative interest rate policy had reduced the JGB yields into negative territory for the remaining maturity up to 10 years and flattened the yield curve excessively. Second, purchasing the JGBs at the annual pace of about ¥80 trillion was becoming increasingly difficult due to scarcity in the JGB market caused by the BOJ's massive purchases. This reflects that the BOJ needs to purchase JGBs from JGB holders, such as regional banks and institutional investors that need them either to fill the gap between loans and deposits or for their asset-liability management. Similar to 2016, the BOJ needed to purchase about ¥120 trillion on a gross basis (¥80 trillion plus about ¥40 trillion for reinvesting redemption) of JGBs expected in 2017. Third, purchasing fewer longer-term bonds and more shorter-term bonds has distorted the yield curve since the 2-year and 5-year yields remain low and in negative territory. They are much lower than the negative rate of -0.1% —far from the desirable yield curve that the BOJ claims to achieve with yield curve control. Therefore, it seems to be just a matter of time before the BOJ will begin tapering from about ¥80 trillion.

Table 1 shows that the BOJ purchased JGBs of about ¥230 trillion from fiscal year 2013 to fiscal year 2016. This purchase was possible mainly because of a large increase in net JGB issuance by the Ministry of Finance (about ¥127 trillion) and the sale by depository financial institutions led by large banks (about ¥96 trillion). Major investors in the JGB market are depository financial institutions led by regional banks (with total holdings amounting to about ¥190 trillion) and insurance firms (¥203 trillion), both of which need the JGBs to fill out the gaps between loans and deposits as well as match the maturities of assets and liabilities, respectively. Since they are unlikely to sell JGBs significantly to the BOJ, a further continuation of the JGB purchases of ¥80 trillion had become challenging.

Indeed, the BOJ reduced the JGB purchases steadily from September 2016 to the present despite its remark on the continuation of about ¥80 trillion in the Statement on Monetary Policy. Without having reduced net purchases of JGBs from ¥80 trillion, the yields would have declined further given strong demand for the JGBs from banks and life insurers. When the yield curve control was announced, I immediately took the view and claimed on various occasions that the BOJ's intention was to abandon the quantity-based operation target without publicly admitting it. Therefore, I have called it "implicit tapering" or an intention on the part of the BOJ to reduce the annual pace of JGB purchases without admitting its true intention. My view was soon found to be correct since the BOJ began to actively reduce the annual pace of JGB purchases in September 2016 (media later called it "stealth tapering"). Figure 3 indicates that an increase in the size of the monetary base and the amount outstanding of JGBs compared to the same month in the previous year. The amount dropped from around ¥80 trillion before the announcement of the yield curve control to well below ¥80 trillion from September 2016. The amount of the annual pace of increase subsequently dropped steadily and has been below ¥50 trillion since March 2018. In the press conference following the June 2017 monetary policy meeting, Governor Kuroda finally admitted that the annual pace of net JGB purchases is endogenously determined since the 10-year yield is an official guideline for market operations, suggesting a decline from around ¥80 trillion is reasonable.

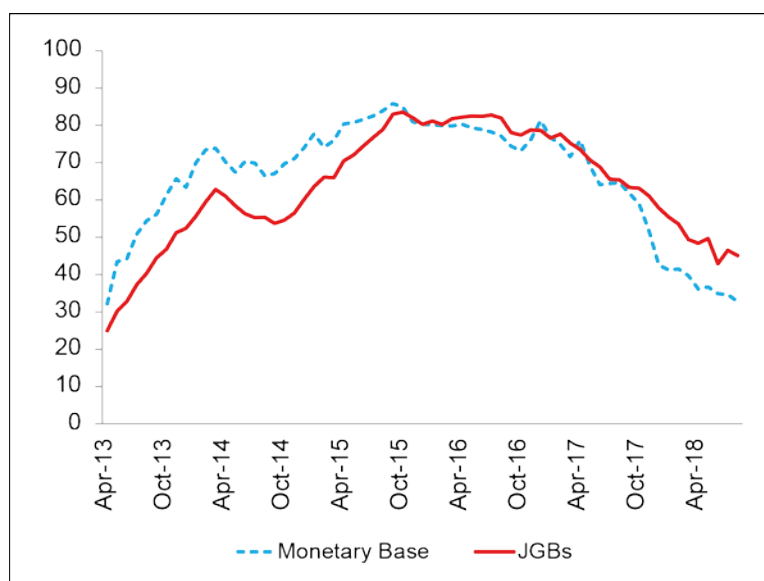
Table 1: Change in the Amount Outstanding Issued by the Government and Held by Major Investors

	Issuer		Investor				
	Central Government (Issuer)	Bank of Japan	Banks	Insurance Firms	Public Pension Funds	Other Pension Funds	Foreign Investors
(1) Before QQE (end-March 2013)	813	94	314	190	69	32	36
(2) Current (End of December 2017)	988	427	166	203	46	30	60
Difference: (2) – (1)	175	333	-148	14	-23	-2	24

Note: Data includes FILP bonds. It refers to the difference between end-March 2013 (the end of Fiscal Year 2012) and end-March 2017 (end of Fiscal Year 2016).

Source: Bank of Japan, Flow of Funds.

Figure 3: Change in the Amount Outstanding of JGBs Held by the Bank of Japan from April 2013 to August 2018 (Trillion)



3.2.4 Market Reactions Before and After the US Presidential Election

Yield curve control initially did not have much impact on the exchange rate and stock prices. Only after the unexpected result of the US presidential election on 8 November, 2016, did global investors suddenly increase their risk appetite in anticipation of higher economic growth and inflation in the US driven by tax cuts, deregulation, and infrastructure investment. This led to a rapid rise in long-term yields, stock prices, and an appreciation of the US dollar against almost all major currencies in the US. Driven by global investors’ enthusiasm, the BOJ’s yield curve control suddenly looked effective as market participants began to pay greater attention to a widening of interest rate differentials with the US—rather than the relative size of monetary base between the US and Japan. It should be noted that noncommercial investors in the International Money Market (IMM) of the Chicago Mercantile Exchange shifted the yen’s net positions from long positions seen in late 2015 to short positions in December 2016. Since this market has been dominated by short-term-oriented investors such as hedge funds, it means that their speculation shifted from the yen’s appreciation to its

depreciation. The yen vis-à-vis US dollar depreciated to around ¥117 by end-December 2016, thereby contributing to higher stock prices in Japan.

3.3 Monetary Policy Adjustments Announced in July 2018

The BOJ made a series of moderate adjustments to the monetary easing policy framework in July 2018. While they clearly pointed to a *more hawkish* stance, the BOJ even referred to these adjustments as “Strengthening the Framework for Continuous Powerful Monetary Easing Framework.” The justification was an adoption of the forward guidance with regards to two policy rates (10-year yield and a negative interest rate). The 10-year bond yield has since exceeded over 0.1% most of the time. The BOJ’s action successfully avoided a sharp appreciation of the yen and a sharp stock price fall—suggesting that the market did not view these adjustments as a more hawkish stance. While the BOJ asserted that there were no fundamental changes to the framework, it skillfully introduced a few elements that could lead to steps toward normalization of the monetary policy. These adjustment were made at the expense of the greater ambiguity and complexity of the monetary policy framework since the BOJ’s actions have increasingly deviated from their communication strategies. The relatively hawkish stance could be traced from the following four aspects.

3.3.1 The Intention to Introduce and Expand the Yield Target Range

First, the BOJ introduced the upper and lower range ($\pm 0.2\%$) of the 10-year target from the previous target range of $\pm 0.1\%$ (-0.1% to $+0.1\%$). The new target range was mentioned by Governor Kuroda at the press conference for the first time as the previous target range of $\pm 0.1\%$ was inferred by market participants on the basis of the levels of fixed rates chosen by the BOJ in conducting *unlimited bond purchase operations*. In practice, the new range means 0% and 0.2% because negative 10-year yields are highly unlikely due to the scarcity of JGBs as a result of the BOJ’s massive holdings (currently, about 50% of the JGBs outstanding issued). This is in line with my long-standing view that the BOJ should adopt the 0-0.25% target range. *This is clearly a step toward normalization.*

How did the BOJ manage to control market reactions? The BOJ did not mention anything about the adoption of a target range and the doubling of the range in the Statement on Monetary Policy. Instead, Governor Kuroda indicated it in a light manner at the press conference. This gave the impression that the BOJ did not change the 10-year yield at all as the Statement continued to specify the target of around 0%. In addition, the BOJ introduced the *forward guidance on policy rates* (a 10-year yield and a negative short-term rate) about the continuation of the current extremely low levels for an extended period by taking into account the effects of the consumption tax hike scheduled for October 2019. This guidance referred to October 2019 and thus invited some market participants to view that the current long-term yields would be maintained at least until that date. However, it is a vague expression because the guidance does not state clearly the continuation of low rates at least until October 2019. Moreover, the forward guidance did not specify the levels of the 10-year yield to be maintained during this period contrary to the practices adopted by the Federal Reserve and the ECB. At the press conference, Governor Kuroda did not make these two points clearer either when asked by the press. This means that it is possible the BOJ might raise the 10-year yield target range above $\pm 0.2\%$ in the foreseeable future.

Second, Governor Kuroda stressed that the de facto introduction of the yield target level was to improve the functioning of the JGB market (i.e., lack of trading)—not to reduce side effects on financial institutions. But in reality the adoption of the range has

helped to raise yields of longer-term bonds, which would be favorable for holders of long-term bonds such as insurance firms and regional banks. It also led to a slightly higher new lending rate for banks. Moreover, the Statement on Monetary Policy specified that the amount of current account balances to which a negative interest rate is applied would be reduced from the current ¥10 trillion on average; this is a clear indication that the BOJ is concerned about the adverse impact of a negative interest rate on banks. The reason why the BOJ did not want to admit side effects of the monetary easing framework on financial institutions explicitly could be to avoid further constant calls to raise policy rates soon.

3.3.2 Adjustments of the ETF Purchases May Lead to Tapering

Third, the BOJ decided to purchase ETFs more flexibly by buying more when sharp falls occur and less when mild falls occur. While the BOJ stressed that the annual purchase amount of about ¥6 trillion is maintained, this would enable the BOJ to reduce the annual purchase amount quietly—so-called “stealth tapering” (or implicit tapering) as is the case with the JGBs. This is also consistent with my long-standing proposal that the BOJ should begin to reduce the annual amount of ETF purchases by purchasing only when absolutely necessary (such as at times of strong downward pressure on stock prices). This would enhance the BOJ’s ability to promptly purchase more ETFs in a recessionary phase.

Fourth, the composition of ETF purchase was adjusted—a move expected fully by the markets. This was a necessary move because the continuation of price-based Nikkei 225-related ETFs has distorted stock prices more heavily than market capitalization-based TOPIX-related ETFs. Only 225 listed enterprises are included in the Nikkei 225 whereas 2,095 enterprises are listed on the Tokyo Stock Exchange Tier 1 Section. The stock prices of a number of small-cap firms included in Nikkei 225 firms might be over-priced since the BOJ has already become one of the top investors in these firms with fewer floating stocks available in the market. Before the July 2018 decision, the TOPIX-related ETFs, the Nikkei 225-related ETFs, and JPX Nikkei Index 400 based on the purchased price (market price) had accounted for about 57% (54%), 37% (41%), and 6% (5%), respectively. For new purchases, the BOJ expands TOPIX-related ETF purchases to over 80% and instead reduces Nikkei 225-related ETFs to over 10%. This would enable the BOJ to continue the ETF purchases for longer.

Therefore, the intention of the BOJ’s adjustments is not only to improve the sustainability of the framework as it has stressed, but also to take further steps toward normalization of monetary policy.

4. EFFECTIVENESS OF UNCONVENTIONAL MONETARY EASING

4.1 Inflation Performance and the BOJ’s Optimistic Inflation Forecast

Notwithstanding the massive scale of monetary easing and diversity of monetary easing tools adopted, the BOJ failed to achieve the 2% price stability target over the past 5 years after QQE. The average rate of headline inflation during fiscal years 2013–2017 since the adoption of QQE recorded a mere 0.5% (Table 2). The BOJ’s core inflation (based on CPI excluding fresh foods) recorded a slightly lower 0.4% on average. The BOJ traditionally uses “core inflation” to make inflation projections since

fresh food prices are affected mostly by weather conditions and thus are very volatile. However, inflation based on CPI excluding all food and energy—similar to the core inflation indicator adopted by the Federal Reserve and the ECB—could be a more suitable indicator for measuring underlying inflation since most of food and energy are imported and their prices are determined in the international markets. Table 2 reports that the average rate of inflation was a mere 0.3%—much lower than the rates of headline inflation and the BOJ’s core inflation. This indicates that inflation occurred due to a rise in the prices of fresh foods caused by bad weather as well as imported foods and energy affected by the depreciation of the yen and higher oil prices.

Table 2: The Rate of Change in CPI (Excluding the Direct Impact of the Consumption Tax Hike)

Fiscal Year	CPI	CPI Excluding Fresh Food	CPI Excluding Food and Energy
2013	0.9	0.8	0.2
2014	0.8	0.8	0.5
2015	0.2	0.0	0.7
2016	-0.1	-0.2	0.2
2017	0.7	0.7	0.0
Average	0.5	0.4	0.3

CPI = Consumer Price Index.

Source: Ministry of Internal Affairs and Communications.

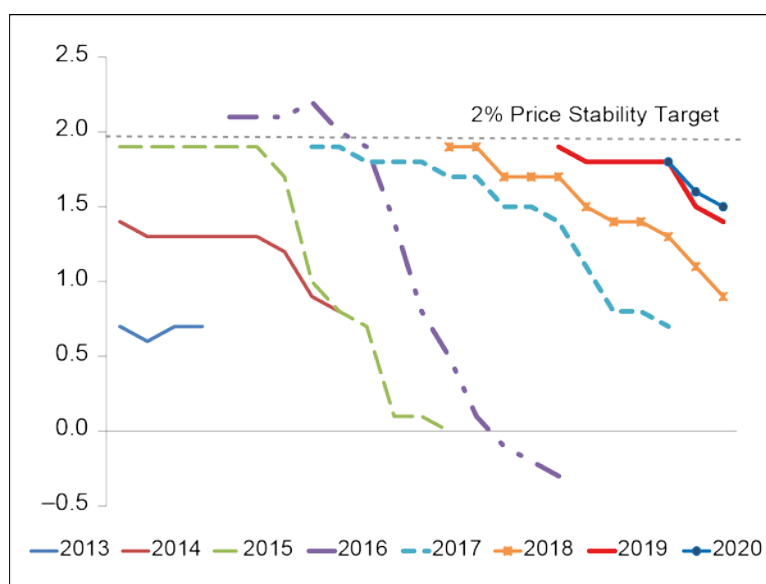
Due to the failure to achieve higher inflation, the BOJ’s inflation projections have been persistently overly optimistic so that significant downward adjustments have always become inevitable later. The BOJ provides medium-term projections in April, July, and October, and January of every fiscal year of real GDP growth and the rate of CPI excluding fresh foods for next three fiscal years. Figure 4 indicates the medium of the board members’ projections and clearly shows this pattern. As the BOJ initially started with very high inflation projections for a specific fiscal year, it was forced to make downward adjustments almost steadily over time as the end of the fiscal year approached with the release of actual data. This pattern is visible for fiscal years 2014, 2015, 2016, 2017, and 2018.

Moreover, the BOJ started QQE in April 2013 by specifying the expected date to achieve around 2% inflation in the report titled “Outlook For Economic Activity and Prices” (Outlook Report). This practice was given up in the April 2017 Outlook Report. In April 2013, the BOJ had initially claimed that around 2% would be likely toward the latter half of the projection period (namely, from October 2014 to March 2016 or “around fiscal year 2015”). Thereafter, having moved back the target six times, the BOJ’s last claim just before its abandonment was that it would be reached “around fiscal year 2019.” Abandoning its price stability target is indicative of a lack of confidence on the part of the BOJ in achieving it. The reaction by the market and media was limited, however, since they have become accustomed to the BOJ’s constant downward adjustment of its inflation outlook so that the BOJ’s outlook is no longer being taken seriously.

According to the latest October 2018 inflation forecast, the medium of the board members’ projections for fiscal year 2018 was adjusted downward from 1.1% to 0.9%, thereby becoming similar to the average of forecasters’ projections (about 0.9% according to the latest *Forecast Survey* conducted by the Japan Center for Economic Research against about 40 forecasters affiliated with financial institutions). The medium

of the board members' projections for fiscal year 2019 (excluding the direct impact of the consumption tax hike scheduled in October 2019) was adjusted downward from 1.5% to 1.4%, but remained well above the average projection of forecasters (about 0.9%). The medium of the board members' projections for fiscal year 2020 (excluding the direct impact of the scheduled consumption tax hike) was adjusted downward from 1.6% to 1.5%. While the Forecast Survey does not report the projection for fiscal year 2020, it provides long-term forecast biannually in June and December. According to the latest 2018 Forecast Survey, the average projection of forecasters (excluding the direct impact of the consumption tax hike) recorded only 1% in 2020–2024 and 1.2% in 2025–2029 suggesting that the BOJ's projections have not been found to be credible by professional forecasters.

Figure 4: Bank of Japan's Inflation Projection (Medium of the Board Members' Projection)



Source: Bank of Japan.

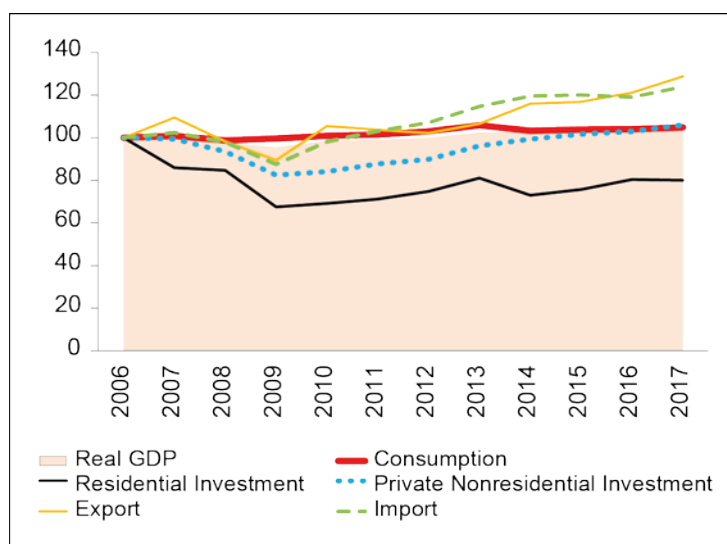
At the BOJ's April 2018 press conference, Governor Kuroda admitted that general prices had not seen a steady pickup and said that the BOJ would intensify discussions on the sluggish inflation at the next [July 2018] monetary policy meeting. However, he stressed that conducting another round of *comprehensive assessment of the monetary policy* following the September 2016 exercise would be unnecessary (BOJ 2018). The 2016 exercise was conducted at the time when yield curve control was adopted with an inflation-overshooting commitment. Mr. Kuroda's denial of another round of comprehensive assessment was viewed by the market as a lack of willingness on the part of the BOJ to conduct additional monetary easing, as such an assessment requires the BOJ to explain why the 2% target was not achieved and what additional measures will be introduced.

While the BOJ has gradually adjusted their overly optimistic projections over time, more realistic projections will be necessary to allow the central bank to restore credibility over their projections and conduct a more accountable monetary policy. Only proper projections for inflation would enable a better estimation of the duration of monetary accommodation and the actions the BOJ should undertake over that period.

4.2 Sluggish Inflation Performance and Weak Households' Spending

Japan's sluggish inflation performance reflects that households' spending has not been as strong as expected by the BOJ. Figure 5 indicates the real GDP level (setting the real GDP level for fiscal year 2006 equal to 100) and shows the performance from fiscal year 2006 to 2017. Over the past 11 fiscal years, real GDP levels remained nearly flat, rising cumulatively by only 8.8%—reflecting stagnant real consumption and declining real residential investment. Real export rose rapidly by a cumulative 29% over the period of fiscal year 2006–2017, but real import also rose significantly, by 24%, over the same period, so that net real exports hardly contributed to real GDP growth. The main contribution to real GDP growth, therefore, was from private nonresidential investment by firms in the manufacturing and nonmanufacturing sectors. The level of private nonresidential investment began to rise gradually in 2009 after a sharp drop in the midst of the global financial crisis; but it has only just recovered to the 2006 level. A recent increase in nonresidential investment reflects replacement demand, a need to adopt environmentally friendly and labor-saving equipment and structure, as well as construction and renovation of hotels, shopping malls, and restaurants related to the 2020 Tokyo Olympic Games and growing tourism. It is uncertain as to whether firms' business investment will continue to rise steadily in the future, given Japan's declining population and expected shrinking markets.

Figure 5: Level of Real GDP and Its Decomposition (Fiscal Year 2006-100)



GDP = gross domestic product.

Source: Cabinet Office.

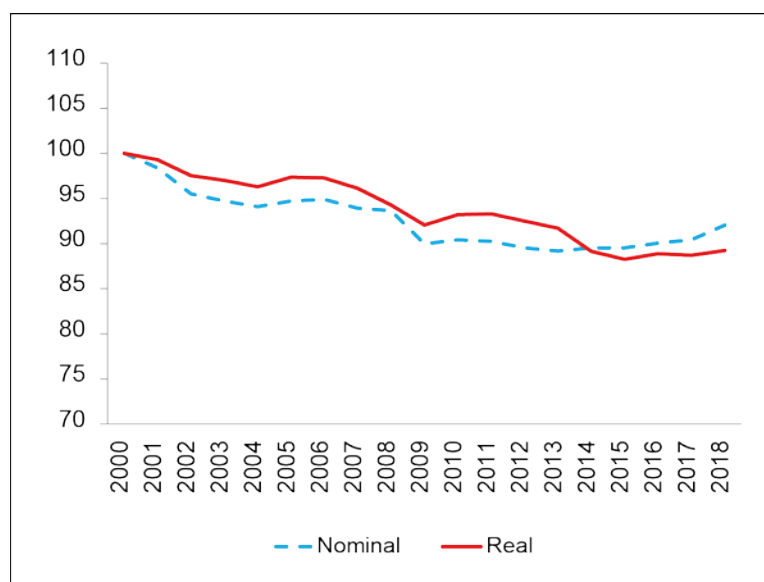
4.3 Weak Wage Performance and Wage Expectation

Households' sluggish spending appears to have been associated with a number of factors—including sluggish wage performance, low expectations on wage outlook, concerns about the post-retirement life, and upward bias in price perception and inflation expectations. First, actual wage performance (total cash earnings) has improved over the past 4 years since 2014, but the scale of wage improvement has been too moderate to exceed the 2000 level. According to the *Monthly Labor Survey*

compiled by the Ministry of Labor, Health and Welfare, the year-on-year change in total cash earnings per employee rose from -0.4% in 2013 to 0.4% in 2014 and thereafter registered an unimpressive 0.1% in 2015, 0.5% in 2016, and 0.4% in 2017. Wages have risen more rapidly in 2018, with the average year-on-year change in total cash earnings for the first 9 months recording 1.5% —thanks to the government’s call for a 3% nominal wage growth, favorable corporate profits, and a labor shortage. Nonetheless, the average growth rate of scheduled cash earnings (basic pay) over the same month recorded a lower 1.1% . The more rapid growth in total cash earnings than scheduled cash earnings indicates that the recent wage increase has been driven mainly by volatile bonus payments—biannual payments generally linked to firms’ profit performance. Moreover, the level of total cash earnings remained below the 2000 level (Figure 6). More importantly, real wages remained stagnant and below the 2000 level, suggesting that nominal wage growth did not catch up with an increase in prices. In the first 9 months of 2018, moreover, the average rate of real wage growth was only 0.3% and that of real basic pay recorded -0.2% .

With regards to wage perceptions, many households claim that they feel that wages have remained unchanged. According to the BOJ’s *Opinion Survey on the General Public’s Views and Behavior*, the percent share of the number of respondents choosing that their “present income level has increased compared with one year ago” rose only to 14% in the latest September 2018 survey—from 10.5% in the June 2006 survey (survey introduced from this month) and from 7% in the March 2013 survey (prior to QQE). Among the remaining respondents in the September 2018 survey, 53% of the respondents chose that their income “has remained the same” while 33% chose that their income “has declined.” These results are consistent with sluggish total cash earnings.

Figure 6: Nominal and Real Total Cash Earnings (Year 2000=100)



Note: Data for fiscal year 2018 use the y/y growth rate for January–June 2018.

Source: The Ministry of Labor, Health and Welfare.

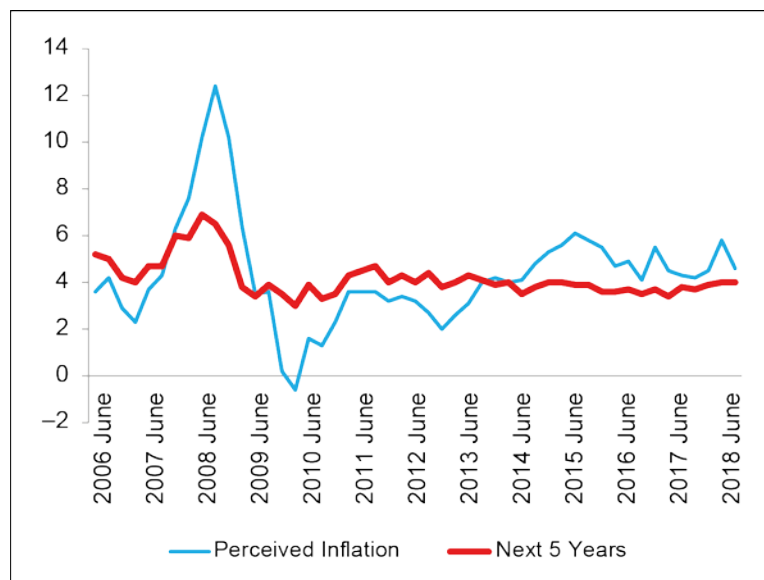
In addition to the current wage performance, many households claim that they do not expect that wages will increase in the near future. According to the BOJ's Opinion Survey on the General Public's Views and Behavior, the percent share of the number of respondents choosing that their outlook for income from one year from now "will increase" remained low at 10% in the latest September 2018 survey—barely changing from 8.8% in the June 2006 survey and from 9.5% in the March 2013 survey. Among the remaining respondents, the percent share of the number of respondents that chose their outlook for income "will remain the same" was 58% while 33% chose "will decline" according to the September 2016 survey.

Second, many households worry about their life in old age. According to the annual *Public Opinion Survey on Households' Financial Assets and Liabilities* conducted by the Central Council for Financial Services Information and its Related Organizations (Secretariat located at the BOJ), the percentage of households responding that they "hold some financial assets" dropped to 69% in the latest 2017 survey—from 88% in the 2000 survey and 74% in the 2012 survey. This suggests that the number of households that do not hold any financial assets has increased over time. Moreover, the percentage of households responding that they "worry about life in old age" recorded 82% in the latest 2017 survey—rising from 79% in the 2000 survey and maintaining the same 82% in the 2012 survey. Concerns about the social security system including public pensions, elderly care, and medical insurance are major reasons why many households are willing to save. Indeed, households have remained overly risk averse and have allocated more than a half of their financial assets to cash and deposits, so little returns have been generated in the current substantially low interest rate environment, as pointed out below.

4.4 Upward Bias in Households' Price Perception and Inflation Expectation

Third, households' spending has been weak partly because of strong upward bias in their price perception and inflation expectation. This means that households have an *inflationary mindset rather than deflationary mindset* claimed by the BOJ. This occurred even when the rate of actual CPI-based inflation was negative in 2009–2012 and 2016. This appears to be a reflection of the fact that households' real disposable income have not risen since the early 2000s due to rising food prices and oil prices, as well as stagnant present incomes and income prospects. Due to the resultant tighter household budgets and their outlook, they appear to feel that prices have gone up and prices will go up. This is consistent with the fact that their spending has been very sensitive to the prices of daily goods and services. A recent example is the January–March quarter of 2018, when the contribution of consumption to real GDP growth turned negative due to higher food prices caused by bad weather. The upward bias remained unchanged before and after QQE. Figure 7 indicates that households' *perceived* rate of inflation (a rate of current perceived price change as compared to one year ago) as well as long-term inflation expectations (over the next 5 years) have remained not only positive but also very high.

Figure 7: Households' Perceived Inflation and Inflation Expectation (%)



Source: Bank of Japan.

It should be noted that the majority of respondents consistently held the view that price rises are unfavorable before and after QQE. According to the BOJ's Opinion Survey on the General Public's Views and Behavior, the percentage of respondents choosing "prices have gone up significantly" or "prices have gone up slightly" compared with one year ago rose to 70% in the latest September 2018 survey—from 54% in the June 2006 survey and 46% in the March 2013 survey. The percentage rose to the maximum 86% in 2015 after the consumption tax hike in fiscal year 2014 and the sharp depreciation of the yen. Around 80% of the respondents who had perceived there to be a price rise over the past year commented that such price rises were "rather unfavorable." This ratio was no different before or after the adoption of QQE. These responses imply that the importance of achieving the 2% target has not been widely understood and shared by households. Without households' acceptance of a price hike, achieving 2% sustainably is a challenging task. The BOJ's aforementioned opinion survey indicates that there appears little public support for the 2% price stability target to begin with. In addition, households' awareness of the 2% target has been low and even declined from 37% in the September 2013 survey (the first survey) to 27% in the latest September 2018 survey. Their awareness of QQE and/or yield curve control dropped sharply from 29% to 21% over the same period.

If these three factors—(1) sluggish wages and wage expectation, (2) concerns about life in old age, and (3) high price perceptions and inflation expectations—are deterring households from increasing their spending, it is uncertain whether the yen's depreciation and higher commodity prices could really contribute to raising households' consumption without giving rise to anxiety about the cost of living. It could result in cost-driven increases in spending on essential goods and services rather than demand-driven increases in spending on nonessential goods and services.

In my view, the expression the prevalence of deflation-oriented mindsets—often used by the BOJ and the government to describe Japan—seems to have been very applicable to the mindset of the corporate sector. It refers to firms' deflationary expectations and associated cautious price-setting behavior. The household sector, by

contrast, tended to form high price perception and inflation expectations reflecting long-standing stagnant income growth and anticipated tighter budgets. As a result, whenever households' present perceived inflation rose, their tolerance for price rises dropped, fostering a negative correlation between them. Based on this perception and thus resistance to price hikes, firms appear to have found it difficult to raise sales prices, contributing to a widespread use of discount-based marketing strategies. In the BOJ's latest September 2018 *Short-Term Economic Survey of Enterprises* (TANKAN), about 70% of respondents thought output prices would rise by "around zero percent" in the year ahead. Together with "don't know" responses, the ratio was over 80%. Thus, it is very unlikely that firms would actively raise their sales prices over the next year either to reflect their increased input cost or to raise profitability. Regarding the 3-year and 5-year horizons, it is interesting that "around zero percent" responses were replaced by "don't know" responses. The ratio of "around zero percent" and "don't know" for 3 years ahead was about 40% and about 20%, respectively. Those for 5 years ahead were about 30% and about 40%, respectively. Combining these ratios amounted to over 60% for both 3 years ahead and 5 years ahead. Therefore, there is a high degree of uncertainty with respect to the price-setting environment for firms as the length of the projection period increases.

4.5 Is Portfolio Rebalance Taking Place in Japan?

The portfolio rebalancing channel achieved through large-scale asset purchases is one of the major transmission channels envisaged by a central bank under the zero or effective lower bound (Joyce et al. 2012). To realize this channel, the BOJ also launched QQE hoping that the portfolio rebalancing channel would raise aggregate demand and inflation by encouraging investors to change the composition of their portfolios, thereby lowering funding costs and raising various asset prices directly. Households traditionally prefer banks deposits. Deposits and cash accounted for around 50% of households' total financial assets from 2000 to 2018. Such large-scale holdings of deposits are quite remarkable given that the deposit interest rate is about 0%. The household sector has remained a substantial net creditor as households' deposits for a long time. Since their deposits grew faster than their loans, the deposits to loans ratio rose over the period since the adoption of the QQE—contrary to the phenomenon expected under the portfolio rebalancing channel. QQE only moderately contributed to raising households' equity and investment fund share holdings as a share of total financial assets. Instead, QQE encouraged the participation of active foreign investors more than individuals (Shirai 2018f).

5. CONCLUSIONS

The BOJ has been struggling with sluggish underlying inflation despite the large scale of monetary accommodation and the diversity of tools adopted. While the BOJ's super-easy monetary policy has contributed to the yen's depreciation, higher stock prices, and higher corporate profits, its adverse impact on financial institutions and deep distortion in the financial and capital markets have become prevalent. The decline in the functioning of the JGB market is a growing concern given its disproportionately large size in the debt securities market and its role of providing a benchmark for pricing corporate bonds and loans. Moreover, concern has been growing about the decline in market functioning in the stock market due to reduced downside risk; overvaluation of some small-cap stocks; the potential adverse impact on corporate governance because of the growing presence of the BOJ as a large silent investor without actively exercising voting rights; and its impact on the BOJ's balance sheet risks (Shirai 2018a, 2018f,

2018g). Therefore, the BOJ is expected to take greater steps toward normalization of monetary policy before underlying inflation approaches 2%. Leaving room for additional monetary accommodation in the event of severe recession is also essential.

With the possible phasing out of the program in mind, the BOJ explicitly expanded the target range to $\pm 0.2\%$ and effectively raised the yields of 10 years and longer, as well as introduced flexibility with regards to ETF purchases that would enable it to undertake “stealth tapering.” For the time being, the BOJ should try to *tacitly* reduce the annual pace of ETF purchases toward about ¥3 trillion—the level before the 2016 expansion, while maintaining the official annual target of ¥6 trillion described in the Statement on Monetary Policy. It is better to reduce ETFs when corporate profits remain high, the Japanese economy is expanding, and the US dollar is strong. The BOJ could then also further expand the target range for yields on 10-year bonds from the current $\pm 0.2\%$ range and reduce JGB purchases to the level of net issuance (about ¥20 trillion annually).

Before taking any decisive steps toward monetary policy normalization, the BOJ needs to introduce flexibility in interpreting the 2% price stability target—such as the incorporation of the 1% upper and lower range ($\pm 1\%$) of the target into the 2% target. The BOJ would then not need to abandon the 2% target while in practice aiming at a 1% figure that would be acceptable to the public. Such flexibility would be better than lowering the target from 2% to 1% or abandoning the target since many other central banks also utilize the target range on their inflation target. A recent example is Sweden’s Riskbank, which adopted a $\pm 1\%$ target to the 2% inflation target in 2017. Moreover, a scheduled increase in the consumption tax in October 2019 from 8% to 10% is expected to generate inflation above 2% for a year. That gives officials the opportunity to introduce a 1% to 3% inflation target range that could be easily presented to the public.

Once the price stability target becomes more flexible, the BOJ may be able to reduce all asset purchases more clearly. A cut in JGB and ETF purchases toward zero—completing the process to cut the annual purchase amount of JGBs and ETFs may be challenging since the BOJ’s monetary policy is constrained by the forward guidance on asset purchases as well as the over-shooting commitment. Completing the process of tapering out purchases of ETFs and bonds and eliminating the 10-year yield target may take much longer since the Japanese economy may face an economic slowdown after the 2019 consumption tax hike and the 2020 Tokyo Olympic Games. So, the full normalization process of monetary policy, such as raising short-term interest rates (including a negative interest rate) and reducing the size of the BOJ’s balance sheet is difficult to forecast at this stage. It will be some time before the BOJ can follow the Federal Reserve.²

² The sequence of monetary policy normalization is essential. Following the approach adopted by the Federal Reserve, (full) monetary policy normalization -- or clear steps of monetary policy normalization -- refers to the phase in which the BOJ begins to reduce its short-term policy rates including the negative interest rate, followed by a shrinkage of the balance sheet. “Steps toward monetary policy normalization” are not yet clear steps of monetary policy normalization but steps moving closer toward normalization. Steps toward monetary policy normalization includes the phases prior to monetary policy normalization—that is the phases in which the BOJ reduces the annual pace of financial assets (i.e., JGBs, ETFs, and J-REITs) toward zero and raises the 10-year yield target (and eventually eliminating the 10-year target). See Shirai (2016, 2018a).

REFERENCES

- Bank of Japan. 2016. Flows of Funds—Overview of Japan, the United States, and the Euro Area. 22 December.
- . 2016. Comprehensive Assessment: Developments in Economic Activity and Prices as well as Policy Effects since the Introduction of Quantitative and Qualitative Monetary Easing (QQE). Background.
- Federal Reserve. 2011. Minutes of Federal Open Market Committee. 21–22 June.
- . 2014. Policy Normalization Principles and Plans. 17 September.
- . 2017. Addendum to the Policy Normalization Principles and Plans as Adopted Effective 13 June 2017.
- Hattori, M., and J. Yetman. 2017. The Evolution of Inflation Expectations in Japan. Hitotsubashi University Repository.
- Joyce, M., D. Miles, A. Scott, and D. Vayanos. 2012. Quantitative Easing and Unconventional Monetary Policy: An Introduction. *Economic Journal* 122(November): F271–F288.
- Kamada, K., J. Nakajima, and S. Nishiguchi. 2015. Are Households Inflation Expectations Anchored in Japan. Bank of Japan Working Paper Series No. 15-E-8.
- Kuroda, H. 2016a. BOJ Governor Press Conference Summary of 29 July 2016.
- . 2016b. Comprehensive Assessment of the Monetary Easing: Concept and Approaches. Speech at the Kisaragi-kai Meeting in Tokyo.
- . 2017. Summary of Governor Haruhiko Kuroda's Press Conference on 16 June 2017.
- . 2018. Summary of Governor Haruhiko Kuroda's Press Conference on 31 July 2018.
- The House of Representatives, Committee on Financial Affairs. 2017. Conference Proceedings, 10 May 2017.
- Shirai S. 2016. *Cyokinyu Kanwa Karano Dakkyaku*. Nikkei Publishing Inc. (in Japanese)
- . 2017a. Japan's Mistake of Negative Interest Rates. *The Wall Street Journal*. 8 March.
- . 2017b. The Truth about Deflation. *Japan Times*. 30 March.
- . 2017c. Super-Easy Monetary Policy and Reflating Japan's Economy. VOX CEPR's Policy Portal, 16 March.
- . 2017d. BOJ's Mission to Reflate Economy Incomplete. *Japan Times*. 22 March.
- . 2017e. BOJ's Dilemma between Price Stability and Financial Stability. *The Japan Times*. 17 April.
- . 2017. Japan Can't Devalue Its Way to Recovery. *The Wall Street Journal*. 21 May.

- . 2017g. The Bank of Japan' Three Communication Challenges. *Japan Times*. 20 July.
- . 2017h. New Problems from Yield Curve Control: Bank of Japan Needs More Time to Hit 2% Inflation. *The OMFIF Bulletin*. April 2017.
- . 2017i. The Contradiction in Japan's Monetary Policy. *The Wall Street Journal*. 12 April.
- . 2017j. The BOJ's Risky Yield Curve Control Experiment. *Central Banking* (www.centralbanking.com) 9 May.
- . 2017k. The Bank of Japan's Monetary Easing and Portfolio Rebalancing Channel. VOX CEPR's Policy Portal Columns. 31 July.
- . 2017. Declining Long-Term Interest Rates and Implications for Monetary Policy: the Case of Japan" VOX CEPR's Policy Portal, 5 October5, 2017
- . 2018a. *Mission Incomplete: Reflating Japan's Economy* (Second Revision). Tokyo: Asian Development Bank Institute. <https://www.adb.org/publications/mission-incomplete-reflating-japan-economy>
- . 2018b. Time for the BOJ to Reconsider the 2% Inflation Target. *Japan Times*, 27 June.
- . 2018c. Alternatives to Japan's 2% Flexible Inflation Target. *Central Banking Journal XXIX(1)* (www.centralbanking.com).
- . 2018d. BOJ Looks Set to Cut Its Inflation Forecast. *Central Banking* (www.centralbanking.com) 16 July.
- . 2018e. Is the BOJ's Monetary Policy Adjustment Really Just a Tweak? *Japan Times*, 1 August.
- . 2018f. Bank of Japan's Exchange-Traded Fund Purchases as an Unprecedented Monetary Easing Policy. ADBI Working Paper No. 865. August. <https://www.adb.org/publications/boj-exchange-traded-fund-purchases-unprecedented-monetary-easing-policy>
- . 2018g. BOJ's Hugh Stock Buying Reaching the Limit. *Nikkei Asian Review*. 21 September.