

Potential issues with BOJ's exit from unconventional monetary policy

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Abstract

It looks as though the processes toward normalization of monetary policy and eventual exit from unconventional easing will no longer be a big issue as the Fed, which has already set out on the path toward exiting monetary easing, serves as a useful frame of reference and a template for the 'exit'. However, the BOJ's idiosyncratic monetary easing policy sets it apart from other central banks that have adopted unconventional monetary easing, and this too could make a shift to an exit difficult. The BOJ faces the problems that it is likely to have a larger balance sheet than other central banks at the time of exit, and also that its assets are likely to have a longer average maturity (residual maturity). This means that, as interest rates rise during the exit phase, the BOJ's interest income is likely to turn negative and its losses are likely to grow. We carried out a simulation of BOJ net interest income during an exit phase based on varying periods of continued monetary easing, which leads to differences in the size of its assets, and varying lengths of average residual maturity on its JGB holdings. The results of this simulation showed that the longer the BOJ continues to pursue monetary easing, and the longer the average residual maturity on its JGB holdings, the greater its losses are likely to be and the longer its losses are likely to continue. However, it is difficult to see a direct causal connection whereby a deterioration in the BOJ's finances, such as moving into the red, leads to a loss of confidence in the currency and the BOJ's monetary policy or a reduction or loss of the BOJ's political independence. What would be problematic, in our view, would be if the government has not achieved fiscal consolidation to some extent when the current BOJ monetary easing policy approaches an exit.

Introduction

As the Bank of Japan's unconventional monetary easing policy persists, there is an increasingly lively debate surrounding the prospect of the BOJ normalizing monetary policy or exiting from monetary easing. The discussion varies from emphasizing serious difficulties in exiting from the current policy to how BOJ should communicate about that. In this report, I try to clarify issues that can arise from the exit process by running a simulation focused on likely magnitude of net interest earning of BOJ during the exit process and by discussing how such a deterioration in the BOJ's finance will or will not affect the monetary policy.

1. Prospect of BOJ exit from monetary easing attracts growing interest and concerns

There is an increasingly lively debate surrounding the prospect of the BOJ normalizing monetary policy or exiting from monetary easing. Counting the number of mentions of the word "exit" in the regular press conferences of the BOJ Governor, we can see that the word received almost no mentions prior to the BOJ's so-called Comprehensive Assessment of September 2016, but saw an increasing number of mentions from around the end of 2016 (Figure 1). We note in particular a rapid rise in the use of the word "exit" in the two regular BOJ governor press conferences that followed the LDP's Administrative Reform Promotion Headquarters submitting its monetary policy recommendations to the BOJ on 19 April 2017 in which it called for a risk assessment and market dialogue on the subject of the BOJ's exit strategy.

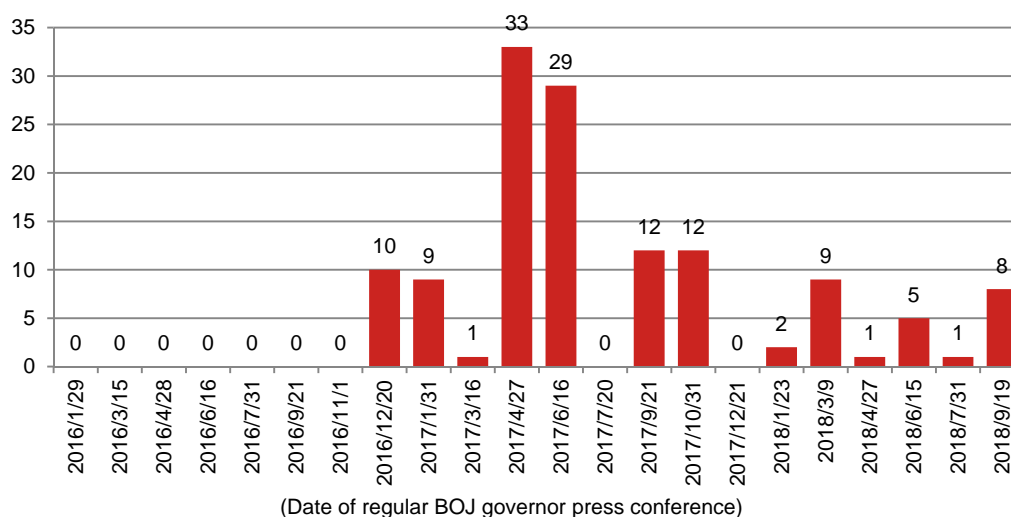
One reason for the growing debate over the BOJ's potential exit from monetary easing is the fact that the Fed has already set in motion the process of normalizing monetary policy. Given the correlation that exists between economic cycles globally, it makes sense that a correlation is also seen to exist between the monetary policy cycles of major countries. Based on that assumption, it seems only natural to expect that once the normalization of monetary policy has started in the US it will at some point start in Japan and other major economies as well.

However, despite the growing interest in a prospective exit from monetary policy, the BOJ has not had much to say on the matter. In a statement to the Lower House Financial Affairs Committee on 3 April 2018, BOJ Governor Haruhiko Kuroda said that while the BOJ has had "various internal discussions" about its exit strategy it was "misleading" to

talk about such a strategy when the 2% price stability target was still a long way off, adding that indicating a specific process for exiting monetary easing would not be an appropriate dialogue to have with the markets. Indeed, some may struggle to understand how market participants who see the 2% price stability target as difficult to reach (according to a Bloomberg survey in August 2018 the consensus forecast for FY19 core CPI inflation is 1.2%), might clamor for a debate on an exit from monetary easing. However, it is easy to understand the apprehension that some may feel about an exit, as the difficulty of reaching the 2% price stability target has increased concerns that the current monetary policy may become prolonged with little likelihood of reaching its objective, which could in turn result in a variety of problems increasing in severity during the exit phase.

We therefore consider here what specific problems might arise during the period when the BOJ exits its current accommodative monetary policy, and what kind of exit strategy might be desirable in order to minimize such problems.

Fig. 1: Number of mentions of the word "exit" in the regular press conferences of BOJ governor Haruhiko Kuroda



Note: Each mention by a journalist during the course of Q&A sessions is also counted as one mention.
Source: Nomura, based on BOJ data

2. What has the BOJ done to date? Similarities and differences with other central banks

We begin our discussion by examining BOJ monetary policy to date, and in particular

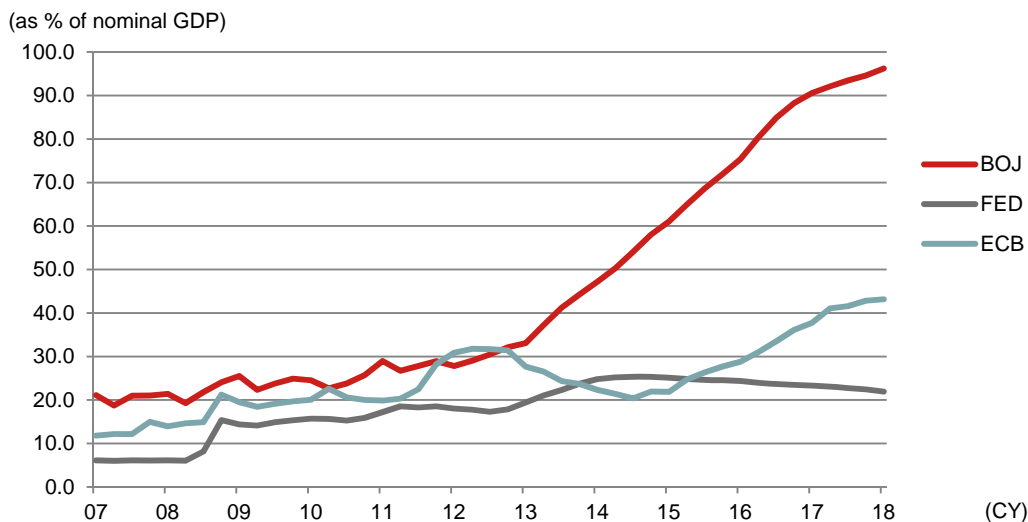
comparing the BOJ with other major central banks, in order to highlight the points that could become problematic when the BOJ exits its current accommodative monetary policy. We think that the BOJ's measures to tackle the financial crisis sparked by the collapse of Lehman Brothers in 2008, stand out as unusual even compared with the unconventional monetary easing policies adopted by other major central banks. We think the main differences can be summarized under two points. First, is the size of the BOJ's balance sheet as a result of its purchases of JGBs and other assets. Second, is the decline in market interest rates across a broad range of maturities following the BOJ's decision to adopt quantitative and qualitative easing (QQE) with Negative Interest Rate Policy (NIRP) in January 2016 and the decision to introduce QQE with yield curve control in September of the same year.

(1) The vast size of the BOJ's balance sheet

The BOJ has surpassed other central banks in the way in which its balance sheet has swelled in size as a result of its purchases of JGBs and other assets. Total assets at the BOJ reached 96.5% of nominal GDP as of end-March 2018, whereas at their peak the Fed's total assets were equivalent to around 25% of nominal GDP and the ECB's total assets were equivalent to around 40% (Figure 2). Although the BOJ has been gradually reining in its purchases, given that its JGB purchases are continuing at a pace of several tens of trillion yen a year (on a net basis), we think it is only a matter of time before the BOJ's total assets exceed the level of nominal GDP.

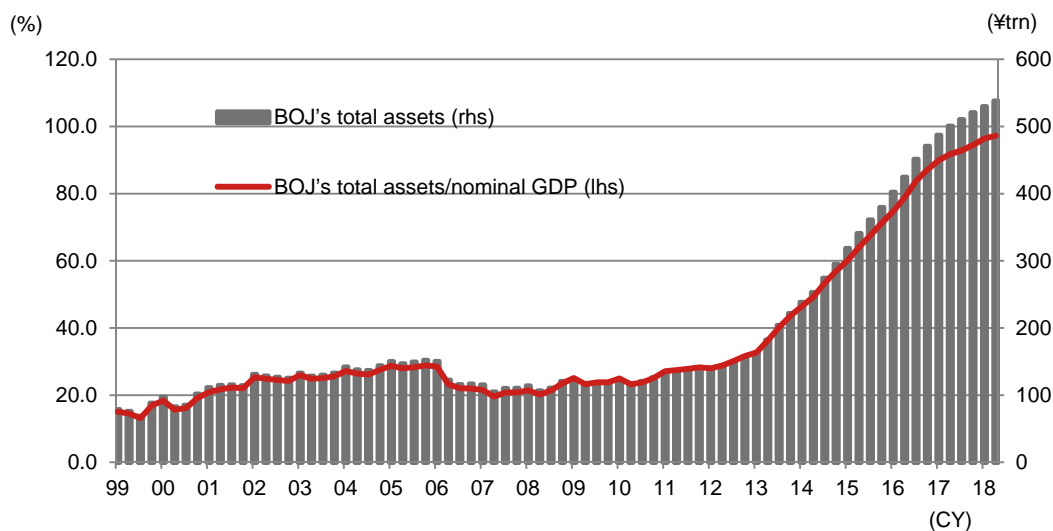
The increase in the size of the BOJ's balance sheet since 2013, moreover, far exceeds the levels seen as a result of its previous periods of quantitative easing. Indeed looking at the increase in the BOJ's balance sheet as a result of the quantitative easing policy it implemented from 2001 through 2005, we can see that total assets were at their peak equivalent to just under 30% of nominal GDP (Figure 3).

Fig. 2: International comparison of total assets at central banks



Source: Nomura, based on BOJ, Fed, and European Central Bank (ECB) data

Fig. 3: BOJ's total assets and long-term JGB holdings



Source: Nomura, based on BOJ data

(2) "Suppression" of long-term interest rates via yield curve controls

Apart from the size of their respective balance sheets, another major difference between the unconventional monetary easing policies of the BOJ and those of other central banks is the strength of the downward pressure on government bond yields and other market interest rates. Since the introduction of NIRP, the decline into negative territory of

yields even on government bonds with longer maturities has been seen globally. However, in our view the BOJ's monetary easing policy stands out as unique in that in addition to NIRP, it set a guidance target of around zero percent even on 10-year JGBs, and carried out central bank money market operations which had the effect of curbing rises in interest rates.

3. A template for the process of exiting monetary easing

Despite those differences, we think it unlikely that there will be differences between the processes that will be followed during the normalization of monetary policy and the exit from monetary easing. On this point, the Fed, which has already set out on the path toward exiting monetary easing, serves as a useful frame of reference. The different steps in this process are: (1) a phased reduction in asset purchases; (2) stopping further expansion of the balance sheet via a complete cessation of asset purchases; (3) raising policy interest rates; and (4) reducing the balance sheet by scaling back reinvestments.

The Fed decided to start tapering the pace of asset purchases in measured steps at the Federal Open Market Committee (FOMC) meeting in December 2013, and has reduced its purchases of longer-term treasury securities and mortgage-backed securities (MBS) by \$5.0bn apiece at each FOMC meeting since that date. At its meeting in October 2014, the FOMC decided to conclude its asset purchase program. This was followed by the decision at the December 2015 FOMC meeting to start raising the policy rate, thereby heralding a shift away from so-called NIRP. The FOMC then suspended its policy interest rate hikes temporarily in response to various uncertainties, including financial market turbulence sparked by developments in China at the beginning of 2016, the UK Brexit vote in June, and the US presidential elections in November of that year, before resuming policy rate hikes at its December 2016 meeting. In September 2017 the FOMC made a formal decision to begin a phased reduction in its reinvestments, and in October of the same year started scaling back its reinvestments.

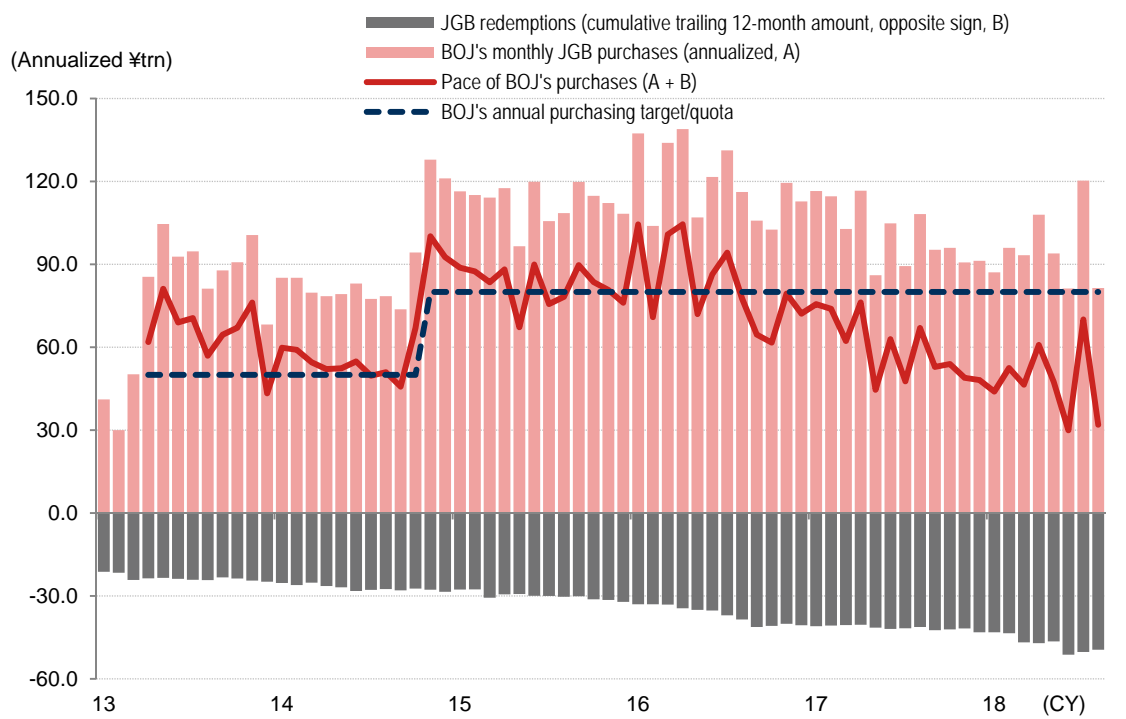
4. The BOJ has already started to normalize monetary policy, but...

If we take the Fed as the template for exiting unconventional monetary easing, we think it fair to say that the BOJ has already taken its first step toward exiting unconventional monetary easing and started to normalize monetary policy. At its monetary policy meeting on 20-21 September 2016, having conducted its Comprehensive Assessment on

developments in economic activity and prices under both QQE and QQE with negative interest rates the BOJ decided to introduce its policy of QQE with yield curve control. The decisive difference between QQE with yield curve control and previous monetary easing policy lay in the policy target, which rather than the amount of JGB purchases from the market, was based on a combination of short-term interest rates on BOJ current accounts and long-term interest rates referencing 10-year JGB yields. In money market operations the figure of around ¥80trn/year was retained as the amount of JGBs the BOJ was allowed to purchase, but this figure changed from being a target to a guideline.

From the outset, the market has interpreted this change as "tapering by stealth." Indeed, the BOJ's JGB purchases have since that point followed a gradual downward trajectory, falling to around ¥30trn a year as of June 2018 (Figure 4). We regard the shift from QQE to yield curve control policy as similar in essence to the tapering of asset purchases decided upon by the Fed in December 2013. We regard this as genuine tapering rather than what market participants have laughingly referred to as "tapering by stealth."

Fig. 4: BOJ's long-term JGB purchase operations



Source: Nomura, based on BOJ data

On 31 July 2018, the BOJ decided on a change in monetary policy in a document

entitled *Strengthening the Framework for Continuous Powerful Monetary Easing*. Based on its awareness that reaching the price stability target would take longer than expected to achieve, the BOJ widened its tolerance range around the targeted 10-year JGB yield of around 0%, in a move designed to prolong the lifespan of its yield curve control policy. At the same time, it adopted a more flexible approach to allow greater upward and downward fluctuations in targets for purchases of exchange-traded funds (ETFs) and Japanese real estate investment trusts (J-REITs).

Until this change of policy, the BOJ had used purchase operations to restrict the fluctuation tolerated in 10-year JGB yields to around 0.1% either side of the target of 0%. However, JGB transactions had reached a low ebb, partly because of overly small fluctuations in interest rates, raising concerns over a decline in liquidity on the JGB market and shortcomings in the market's price formation function.

Some market participants take the view that increasing the tolerated range in 10-year JGB yield fluctuations was effectively opening the door to higher interest rates. However, given that this change of policy occurred alongside the introduction of forward guidance for yield curve controls, we do not regard this policy change as a step forward toward the normalization of monetary policy. If anything we think the introduction of forward guidance has for now closed the door on normalization.

5. Issues facing the BOJ in a true exit phase

In terms of the first steps towards an exit from unconventional monetary easing, in our view, the BOJ has skillfully paved the way for this exit with the introduction of its yield curve control policy. However, we think the policy adjustments it made in July 2018 might have closed the door on policy normalization. Moreover, in addition to the idiosyncrasies of the BOJ's monetary easing policies when compared to those of other central banks, as discussed above, we also do not think its key price stability target is likely to be achieved soon and expect it to continue to pursue monetary easing for some time to come. We therefore think the BOJ will run into various problems from the second stage of the exit process onwards.

Generally speaking, when unconventional monetary easing, and in particular monetary easing that has involved an expansion of the central bank's assets, comes to an end—i.e., in a so-called exit phase, the interest the central bank pays on its liabilities, in the form

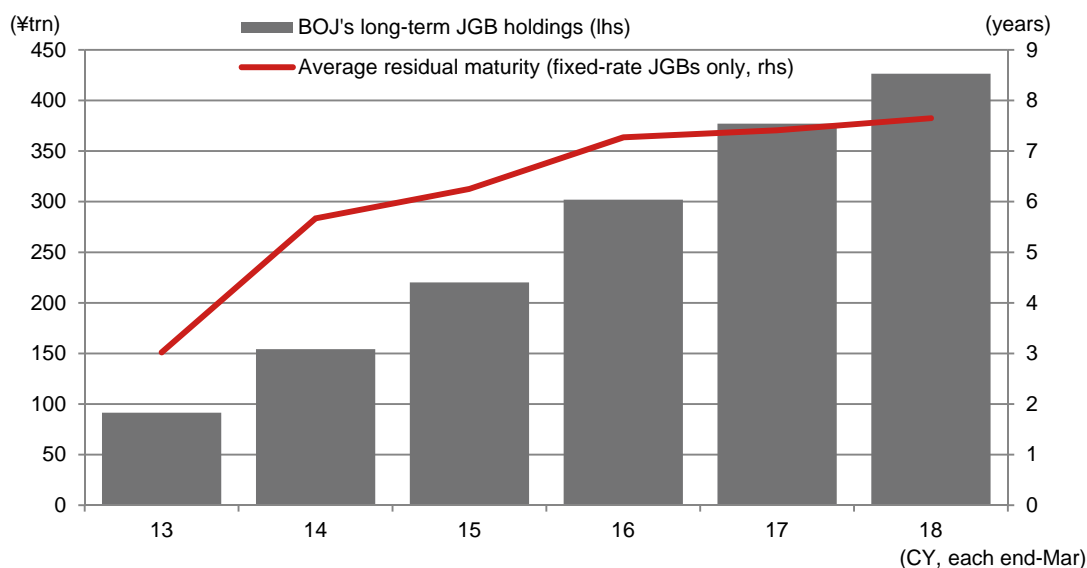
of private-sector financial institutions' reserve deposits, increases more rapidly than the interest it receives on its own assets, which are mainly government bonds. This causes the central bank's earnings to deteriorate and reduces its financial stability, which is clearly a problem.

If we apply this argument to the BOJ's current situation, it appears that the idiosyncrasies of its monetary easing policies, which we discussed above, might mean that its earnings are likely to be hit relatively hard, for the two reasons set out below.

The first is that the very fact that the BOJ's assets have increased substantially, because of the size of its JGB purchases, means that the interest it receives on these assets (i.e., the interest on its JGB holdings) increases more slowly than the interest it pays on current account deposits. Central banks' liabilities, not just those of the BOJ, can be broadly divided into two categories: bank notes in circulation and outstanding private-sector financial institution reserve deposits. However, the central banks' so-called quantitative easing policies have caused them to build up their assets, and most of the liabilities that have increased in line with this have built up in the form of reserve deposits (ie, current account deposits with the BOJ).

To put this another way, the greater the scale of quantitative easing, the smaller the contribution from seigniorage (i.e., the income from issuing currency) will be in an exit phase, which means that the central bank's earnings are more likely to deteriorate. This is because the bank's buffer against the gap between interest received and interest paid, which is generated by its banknotes in circulation (which are interest-free), represents a smaller proportion of its total assets (and total liabilities).

Fig. 5: BOJ's outstanding long-term JGB holdings and average residual maturity



Note: We excluded variable-rate JGBs and JGBis from our calculation of average residual maturity.

Source: Nomura, based on BOJ data

The second reason is that the BOJ has set long-term interest rates as the operating variable under its yield curve control policy framework, which means that it is forced to buy larger amounts of long and superlong JGBs than it would if it did not have long-term interest rates as its operating variable. This in turn lengthens the average residual maturity, or duration (the average time taken to recoup the investment principal), of its JGB holdings (Figure 5). An increase in the average residual maturity on the JGBs held by the BOJ as assets increases the length of time it takes for the BOJ to recoup its investment via interest and redemptions, in line with the concept of "duration." This means that it takes longer for the bank to be able to cover the increase in payments of interest on liabilities that occurs during an exit phase with income from its assets.

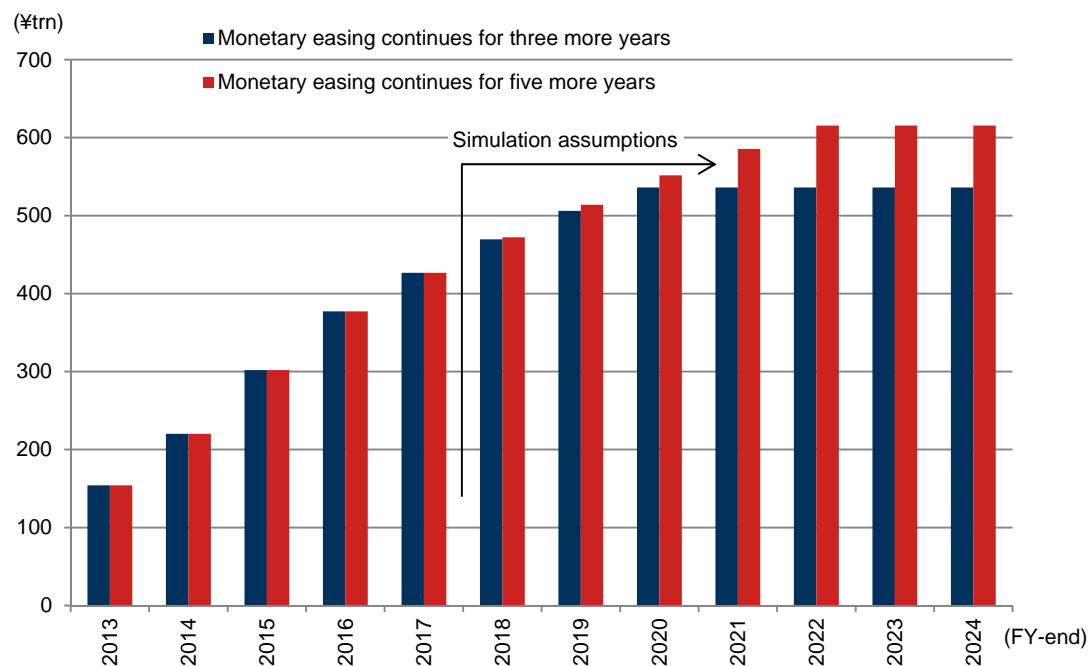
6. Simulation of BOJ earnings in exit phase and our underlying assumptions

The problems discussed above are likely to emerge, for structural reasons, when the BOJ exits from its monetary easing policy. The longer the BOJ continues to pursue monetary easing and the greater the value of its JGB purchases (even if it is gradually reducing them), the more serious these structural problems are likely to be. On the other hand, the BOJ could lessen the seriousness of these problems by keeping the average residual maturity of its JGB holdings at an appropriate level via technical adjustments of

its JGB purchase operations.

We carried out a simple simulation to assess the impact on the BOJ's earnings during an exit phase from changes in the following two parameters: (1) the length of time it continues to pursue monetary easing and (2) the skill with which the BOJ manages the average residual maturity of its JGB holdings (i.e., its long-term JGB purchases). For the BOJ's earnings, which are the target of this simulation, for the sake of simplicity we looked only at the difference between the interest the BOJ receives on its JGB holdings and the interest it pays on banks' current account deposits. With regard to (1) the length of time during which the BOJ continues to pursue monetary easing, we looked at two scenarios: one in which the BOJ maintains its monetary easing policy through to end-FY20 (i.e., for three years from end-FY17) and one in which it maintains its monetary easing policy through to end-FY22 (i.e., for five years from end-FY17) (Figure 6). Under the BOJ's yield curve control policy, the value of its JGB purchases and the outstanding JGB holdings that result from these purchases depend on the vagaries of both the supply-demand environment in the JGB market and the domestic and overseas financial markets, which makes it difficult to make assumptions. However, we assumed that the BOJ's net JGB purchases in the final fiscal year of its current phase of monetary easing fall gradually to ¥30trn, around the same as the income the state currently receives on its general account from bonds (i.e., the new JGB issuance amount).

Fig. 6: Assumptions for outstanding JGB holdings used in our simulation for exit from monetary easing



Note: "Monetary easing continues for x more years" is from starting point of end-FY17.

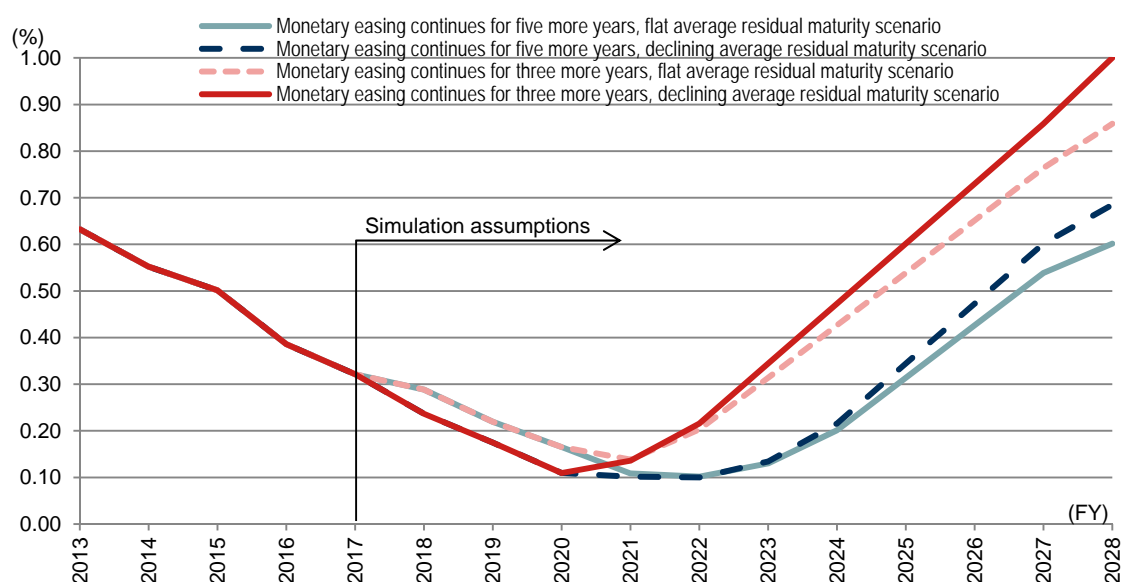
Source: Nomura, based on BOJ data

With regard to (2) the skill with which the BOJ manages the average residual maturity of its JGB holdings, we look at two scenarios: one in which the average residual maturity of the BOJ's outstanding JGB holdings in the final fiscal year of yield curve control is similar to that at end-FY17 (we call this the “flat average residual maturity scenario”), and one in which the average residual maturity of its outstanding JGB holdings shortens gradually because the BOJ ensures that the average residual maturity of its new JGB purchases is 10 years during the remaining years of yield curve control (we call this the “declining average residual maturity scenario”). The average residual maturity of its JGB holdings in the last fiscal year of yield curve control and at the point at which yield curve control ends will affect the BOJ's earnings via the rate of increase in the average effective yield on the BOJ's long-term JGB holdings after yield curve control has come to an end. That is to say, the longer the average residual maturity when yield curve control comes to an end, the slower the increase in the average effective yield on the BOJ's long-term JGB holdings. This will reduce the interest the BOJ receives and thus put downward pressure on its earnings.

In our simulation, we also made the following assumptions regarding long-term and short-term interest rates during the monetary policy normalization process. For the short-term policy interest rate, we assumed that the BOJ raises the interest rate on

current account deposits at the BOJ to +0.5% over the three years after the end of monetary easing (i.e., after three years or five years have passed from end-FY17). We assumed that this positive rate of interest on BOJ current account deposits will apply to all outstanding current account deposits at the Bank. With regard to long-term interest rates, we think it is highly likely that the BOJ will abandon its policy guidance target when it ends monetary easing. In our simulation we therefore assumed that 10-year JGB yields rise, in line with hikes in the policy short-term interest rate, to +1.0% three years after the end of monetary easing. We also assumed that the effective rate of interest on the coupons that the BOJ receives on its long-term JGB holdings rises more slowly than market interest rates, varying in line with differences in the average residual maturity on the BOJ's JGB holdings when it abandons monetary easing (Figure 7).

Fig. 7: Assumptions for the effective yield on long-term JGBs used in our simulation of an exit from BOJ monetary easing



Source: Nomura, based on BOJ data

Other assumptions that have a major impact on the results of our simulation are the rate of increase in bank notes in circulation and the rate of increase in outstanding current account deposits, both of which are BOJ liabilities, and the relative speed of one versus the other. If the BOJ starts to normalize monetary policy and long-term and short-term interest rates start to rise, this is likely to have an effect on the incentive for private-sector non-financial economic entities to hoard cash, but it is difficult to predict this in a prescient and meaningful way.

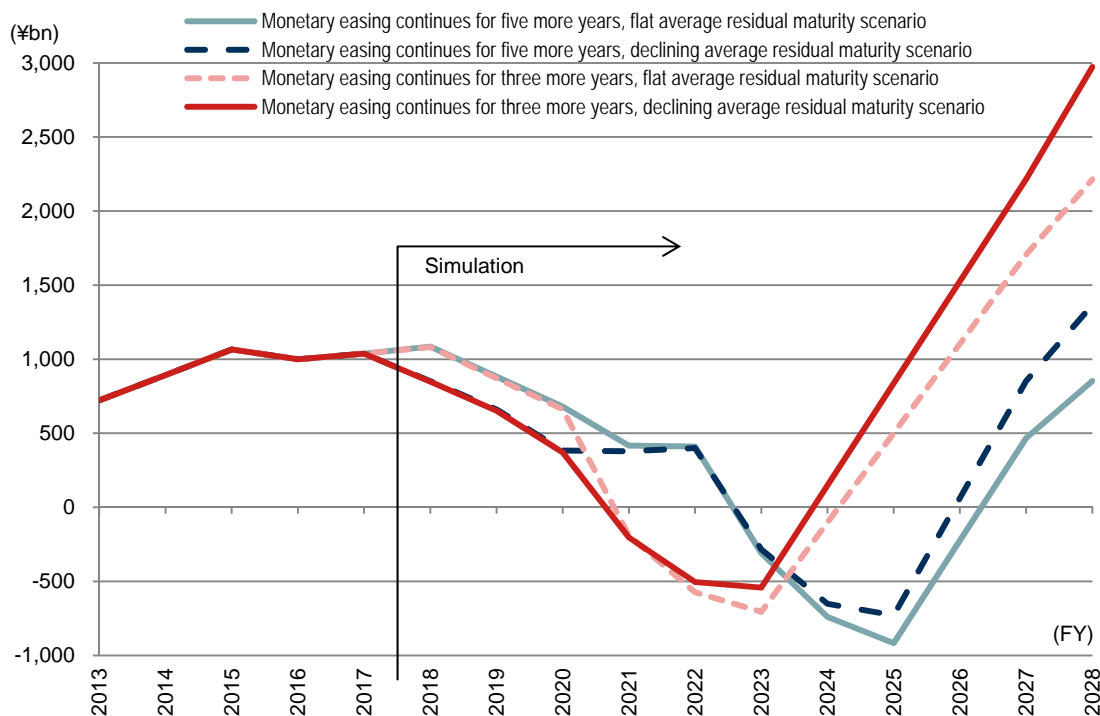
In our simulation, therefore, we assumed that bank notes in circulation grow at their average pace from end-FY12 through end-FY17, and also that the BOJ's liabilities excluding bank notes in circulation and outstanding current account deposits at the BOJ remain roughly the same. We then calculated outstanding current account deposits at the BOJ as the BOJ's total outstanding assets, which grow in line with changes in outstanding JGB holdings, minus bank notes in circulation and other outstanding liabilities.

7. Simulation results

The results of our simulation were generally in line with what we had intuitively expected. That is to say, the longer the BOJ continues to pursue monetary easing, the greater the BOJ's assets (i.e., its outstanding holdings of JGBs), and the longer the average residual maturity of its JGB holdings, the greater the BOJ's losses during the period of its exit from monetary easing and the longer it takes the BOJ to move into the black (Figure 8).

In the scenario in which the BOJ maintains monetary easing for three years from end-FY17 and the average residual maturity of the BOJ's JGB holdings becomes shorter, it records negative net interest income over the three years of its exit phase, to a cumulative total loss of around ¥1.25trn. Meanwhile, in the scenario in which it maintains its monetary easing policy for five years and the average residual maturity of its JGB holdings does not become shorter, it records negative net interest income for four years during the exit phase, giving a cumulative total loss of around ¥2.2trn.

Fig. 8: Results of simulation of BOJ earnings (net interest income) during the exit phase



Note: We ran a simulation for interest received by the BOJ on its JGB holdings - interest paid by the BOJ on current account deposits.
Source: Nomura, based on BOJ data

8. Essence of exit problem

As shown in the results of the above simple simulation, if we focus only on the size of the BOJ's losses (and the degree of capital erosion resulting from that) in the exit phase, we think the problem is, if anything, how to control balance sheet expansion and the average residual maturity of JGB holdings in the normalization process until the time the exit approaches. Meanwhile, if we look at whether the size itself of the losses in the exit phase could cause some sort of problem or hindrance to the management of monetary policy, the answer for the moment is probably no. Based on its characteristics as a special corporation defined in the Bank of Japan Act, the BOJ's financial strength as seen in its income and capital ratio does not have an impact on monetary policy management, and a system is in place so that this does not happen.

So why do the markets and the media consider an exit from the BOJ's monetary easing to be so much of a problem? We think it is because of concerns about a deterioration in the BOJ's finances itself leading to a decline in confidence in currency and monetary policies, and about a deterioration in the BOJ's finances leading to a decline in payments

to the national treasury, inviting greater political involvement and interference in decisions on monetary policy.

In sum, we see little risk of a direct causal connection whereby a deterioration in the BOJ's finances leads to a loss of confidence in the currency and the BOJ's monetary policy or a reduction or loss of the BOJ's political independence. Deterioration in the BOJ's income (and a resulting reduction in payments to the national treasury) as a result of having to make increased interest payments when raising the policy interest rate during an exit could be seen as a transfer of income from the state to the banking sector. The resulting deterioration in the BOJ's income and increase in the government's fiscal burden could be likened to compensation to the people for the inflation that can be expected to occur during an exit phase. If the general public is aware of this background, it is by no means inevitable that confidence in the currency and the BOJ's monetary policy will be undermined by such an exit.

What would be problematic, in our view, would be if the government has not achieved fiscal consolidation to some extent when the current BOJ monetary easing policy approaches an exit. In such a situation, a decline in the BOJ's payments to the national treasury as soon as it started to exit, or an increase in the government's interest payments to the BOJ a certain period after the rise in interest rates, would place added risk on the government's fiscal management. If at this time the BOJ found itself obliged to delay raising interest rates, including its policy interest rate, because of concerns about the government's debt management instead of the BOJ's assessment of the nonfinancial economy and inflation, or if the government should call for the BOJ to take into consideration the government's debt management with the threat of revising the Bank of Japan Act, it might induce private-sector economic agents to hedge the risk of a pickup in inflation (namely, by fleeing yen assets in general). In other words, the effect would, to all intents and purposes, be the same as if they had lost confidence in the currency.

Seen in this light, we think the real risks associated with a BOJ exit strategy can be seen to stem not so much from the form or outcome of the BOJ's exit strategy, but from Japan's finances and the sustainability of government debt.

Conclusion

There has been much debate on an exit from the BOJ's monetary easing policy since its

Comprehensive Assessment of September 2016. With achieving the 2% price stability target proving difficult, it makes sense for concerns to increase about various problems becoming more serious the more protracted the current monetary easing policy becomes.

We think there are unlikely to be major differences between central banks in terms of the procedure toward normalization of monetary policy and an exit. However, the BOJ's monetary easing has idiosyncrasies even among those central banks in various regions that have adopted unconventional monetary easing, and these could also make it difficult to transition toward an exit. The idiosyncrasies of the BOJ's monetary easing are (1) the substantial size of total assets as a result of very large purchases of JGBs, and (2) it made long-term interest rates its policy target under yield curve control.

As a result of the idiosyncrasies of its monetary easing, the BOJ faces the problems of having a larger balance sheet than other central banks at the time of exit and of its assets tending to have a longer average maturity (residual maturity). This means that, as interest rates rise during the exit phase, the BOJ's interest income is likely to turn negative and its losses are likely to grow because of differences in the pace of growth between the interest it pays and the interest it receives. A simulation based on varying periods of continued monetary easing, which leads to differences in the size of its assets, and varying lengths of average residual maturity on its JGB holdings also shows that the longer the duration of easing and the longer the average residual maturity of JGB holdings, the greater the BOJ's losses (i.e., negative net interest income) are likely to be and the longer its losses are likely to continue.

However, it is difficult to see a direct causal connection whereby a deterioration in the BOJ's finances, such as moving into the red, leads to a loss of confidence in the currency and the BOJ's monetary policy or a reduction or loss of the BOJ's political independence. What would be problematic, in our view, would be if the government has not achieved fiscal consolidation to some extent when the current BOJ monetary easing policy approaches an exit. This is because higher interest rates in the exit phase would increase the burden on the government's fiscal management, and interest rate hikes via monetary policy could constrain the management of government debt.