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JAPAN’S MONETARY POLICY: ACCOMMODATING INFLATION UNCONVENTIONALLY[[1]](#endnote-1)

[Tulsi Jayakumar](https://iveypubs.my.salesforce.com/003A000001EUF89) wrote this case solely to provide material for class discussion. The author does not intend to illustrate either effective or ineffective handling of a managerial situation. The author may have disguised certain names and other identifying information to protect confidentiality.

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On January 22, 2018, the policy board of the Bank of Japan (BoJ)—the highest decision-making body responsible for monetary and currency control in Japan—held a meeting to make a decision on the monetary policy stance going forward. Japan’s macroeconomic indicators—growth, output gap, unemployment level, and the job-openings-to-applications ratio—had indicated improvement since 2012. These indicators suggested that Japan had managed to come out of two decades of stagnation, deflation, economic pessimism, and insecurity, lasting from 1991 to 2011 and known as the “lost decades.” Yet, the chief concern for the governor of the BoJ, Haruhiko Kuroda, was Japan’s headline-inflation rate. The headline-inflation rate stood at 0.6 per cent, considerably less than the 2 per cent target level set for it by the BoJ in January 2013.[[2]](#endnote-2)

Over the period 2012–2017, Japan’s monetary policy had emerged as the chief pillar of Prime Minister Shinzo Abe’s plan, deemed centralto rekindling Japanese growth and ending deflation (see Exhibit 1). The BoJ had been using various unconventional monetary policies since 1999. What necessitated such unconventional monetary policy measures? How should businesses view such unconventional accommodative monetary policies? Could a policy of accommodation stimulate investment in the economy and lead to recovery, or were there concerns with a continued monetary stimulus?

UNCONVENTIONAL MONETARY POLICY MEASURES

Theoretically, all other things being equal, an economy would experience recession and deflation when the real interest rates in the economy exceeded the natural rate of interest (or when natural rates declined). Conversely, output and prices increased when the real interest rate gap turned negative. The natural rate of interest was the rate consistent with real gross domestic product (GDP) growing at its trend (potential) rate with stable inflation and, hence, the rate at which the central bank would maintain a neutral monetary policy stance (i.e., neither loose nor tight). The expected, future-short-term real interest rates were one way of assessing such a natural interest rate.[[3]](#endnote-3) Thus, any accommodative monetary policy, regardless of whether it was conducted through conventional or unconventional policy means, meant that the central bank sought to drive the real interest rate below the natural rate of interest.[[4]](#endnote-4)

Central banks traditionally used either price instruments (interest rates) or quantity instruments, such as the monetary base or other monetary aggregates, to effect monetary policies.[[5]](#endnote-5) Conventional monetary policy measures followed by most central banks during normal times were to first set targets for policy rates (typically, interest rates in the overnight interbank call-money markets). Central banks would then use open market operations (OMOs) to ensure that such targets were met. For instance, buying government securities through OMOs would increase the amount of money in the banking system and help in lowering interest rates in the economy towards the target policy rate. An inexpensive (easy) money policy, under conventional measures, meant lower target policy rates, and the reverse was true for tight money policies. Conventionally, central banks would not lend directly to the private sector or to the government, nor would they undertake outright purchases of government bonds, corporate debt, or other debt instruments in pursuance of monetary policy objectives.[[6]](#endnote-6)

However, during abnormal times, either when the nominal policy rates[[7]](#endnote-7) had already been brought down to zero (or near zero) or when the monetary transmission process had been severely impaired, such conventional measures could no longer be used to achieve monetary policy objectives. In such situations, central banks could use unconventional monetary policy measures, defined as “policies that directly target[ed] the cost and availability of external finance to banks, households and non-financial companies,”[[8]](#endnote-8) to overcome the problem of the “zero lower bound.” Such unconventional monetary policy measures to stimulate the economy could consist of (1) forward guidance to medium- and long-term inflation expectations, consisting of promising to continue with virtually zero (or very low) interest rates into the future; (2) changing the composition of the central bank’s balance sheet;[[9]](#endnote-9) and (3) expanding the size of the central bank balance sheet or “quantitative easing,” consisting of purchases of government bonds and other unconventional assets with longer maturities.[[10]](#endnote-10)

JAPAN’S UNCONVENTIONAL POLICY MEASURES

The Japanese economy, which had exhibited high growth rates in the 1970s and 1980s,[[11]](#endnote-11) began to stall in 1991. Japan entered a period of deflation and low growth for the next two decades, termed the “lost decades.”[[12]](#endnote-12) The GDP growth rate turned negative in 1998,[[13]](#endnote-13) declined, and was estimated to have reached zero per cent by 2000 (see Exhibit 2).[[14]](#endnote-14) The economy plunged into a period of recession and deflation.

The BoJ would need to increase the natural rate of interest to get the economy out of deflation. Japan’s declining natural interest rate was mainly the result of structural factors. These included declining potential growth rates, global factors contributing to a saving glut, and Japan-specific factors leading to an increase in domestic savings over investment.[[15]](#endnote-15)

Since the 1990s, Japan had sought to address the problem of declining natural rates of interest and the zero lower bound by using a set of unconventional monetary policy measures. These methods aimed at overcoming the zero lower bound in four ways: first, shifting the operating target from short-term interest rates, which faced the zero lower bound, to long-term interest rates;[[16]](#endnote-16) second, influencing risk premiums, mainly through the purchase of risk assets, when faced with a limit to reducing interest rates on risk-free assets, such as government bonds; third, removing the zero lower bound by applying a negative short-term nominal interest rate; and fourth, influencing people’s inflationary expectations by reducing real interest rates, rather than by affecting nominal interest rates.[[17]](#endnote-17)

**Zero Interest Rate Policy: 1999–2000**

One of the earliest unconventional monetary policy measures used by Japan to fight deflation and negative growth was a zero interest rate policy (ZIRP), introduced in February 1999. The BoJ lowered the overnight call rate towards zero by providing the market with more funds than necessary for financial institutions to meet their reserve requirements (see Exhibit 3). It also explicitly committed to continuing with the ZIRP until “deflationary concerns were dispelled.”[[18]](#endnote-18) In August 2000, as the GDP growth rate increased to 2.8 per cent, the BoJ lifted the ZIRP, claiming that deflationary concerns had been dispelled.[[19]](#endnote-19) However, interbank interest rates—the overnight call rates—remained at virtually zero through to mid-2005.[[20]](#endnote-20)

**Quantitative Easing: 2001–2006**

The Japanese economy deteriorated soon after the ZIRP was lifted. Industrial production decelerated, and the GDP growth rate fell to 0.4 per cent in 2001. In response to this, in March 2001, the BoJ introduced a quantitative-easing (QE) policy. Under QE, the bank shifted the operating target of monetary operations from the earlier overnight call rate (a price instrument) to the current account balances—in other words, the sum of required and excess reserves (a quantity instrument)—that commercial banks held at the BoJ. The BoJ increased the target current account balance in steps—from ¥4 trillion[[21]](#endnote-21) to reach ¥35 trillion in December 2004.[[22]](#endnote-22) It used monthly purchases of Japanese government bonds (JGBs) as the main instrument to achieve this operating target. Through purchases of JGBs, which increased from ¥400 million in August 2001 to ¥1.2 trillion in October 2002, banks were provided with enough liquidity so that they would place excess funds in the BoJ account that bore zero interest. It was assumed that, as a result, zero interest rates would result. The bank also reduced the official discount rate (ODR) in steps from 0.5 per cent to 0.1 per cent by September 2001 (see Exhibit 4).[[23]](#endnote-23)

The BoJ expected QE to affect output in three ways: (1) the excess liquidity to the banking system would lead to an expansion of money supply, which, in a recessionary economy, would facilitate economic recovery; (2) QE and the resultant liquidity to commercial banks was expected to ensure financial stability, given the weak capital position of several banks; and (3) the BoJ, through the excess reserves created under QE, signalled its commitment to continue monetary easing.[[24]](#endnote-24)

In March 2006, the BoJ announced that the QE policy had been successful, and, as such, the operating target was again changed back to the uncollateralized overnight call rate, which would effectively remain at zero per cent,[[25]](#endnote-25) signalling a return back to the ZIRP. In July 2006, based on an outlook of economic expansion, as well as positive inflation, the bank announced an exit from the ZIRP. The BoJ sought to keep the overnight call rate at 0.25 per cent.[[26]](#endnote-26)

**Comprehensive Monetary-Easing Policy: 2010–2013**

In December 2009, following the global financial crisis, the BoJ decided that, given the international economic scenario and the downside risks to the Japanese economy, it would introduce a new funds-supplying operation, with the goal of further reducing longer-term interest rates. Under this operation, approximately ¥10 trillion worth of loans would be lent for a duration of three months, at an extremely low and fixed interest rate of 0.1 per cent against any eligible collateral, including Japanese government securities, corporate bonds, commercial paper, and loans against property title deeds.[[27]](#endnote-27)

As economic growth deteriorated even further, in October 2010, the BoJ implemented a comprehensive monetary-easing policy that consisted of three measures: (1) it reduced the target policy rate (overnight call rate) to 0–0.1 per cent with immediate effect; (2) it committed itself to maintaining the virtually zero interest rate level until it judged that price stability was in sight; and (3) it established a temporary ¥35-trillion asset purchase program, through which it purchased financial assets including government securities and risk assets such as corporate bonds, commercial paper, exchange-traded funds (ETFs), and Japanese real estate investment trusts (J-REITs) and provided longer-term funds at a fixed rate.[[28]](#endnote-28)

Following the Tohoku earthquake and tsunami in March 2011, the BoJ further enhanced monetary easing to counter the impact of these natural disasters on production and business and household sentiments so that Japan could overcome deflation and return to a sustainable growth path with price stability. To tackle the zero lower bound, the bank increased the amount of asset purchases, especially risky assets, under the Asset Purchase Program and undertook loan support programs.[[29]](#endnote-29) This announcement came three days after the earthquake and tsunami. The total size of the monetary easing under the Asset Purchase Program worked out to more than ¥120 trillion.[[30]](#endnote-30) These asset purchases were in addition to the regular purchases of JGBs of ¥21.6 trillion per year. However, economic activity and prices did not improve significantly. In January 2013, Governor Shirakawa Masaaki adopted the price-stability target of a 2 per cent consumer price index and committed to achieving such a target at the earliest possible time.[[31]](#endnote-31) In doing so, the BoJ had moved from the earlier “price stability goal” of 1 per cent to a “price stability target” of 2 per cent.

Quantitative and Qualitative Monetary Easing: 2013–2016

In April 2013, Kuroda introduced a policy of quantitative and qualitative monetary easing (QQE), which sought to achieve monetary easing in terms of both quantity and quality, so as to achieve the price-stability target of 2 per cent within two years. The operating target was shifted to the monetary base. The quantitative easing through QQE aimed at doubling the monetary base, increasing it at an annual pace of ¥50 trillion (later boosted to ¥80 trillion), and increasing the pace of annual JGB purchases, thereby affecting the quantity of money supply. The BoJ’s goal was to reduce the long-term interest rates primarily through signalling its commitment to keeping interest rates low, thereby easing financial conditions and assisting economic recovery and growth.[[32]](#endnote-32) The bank also sought to reduce interest rates by extending the maturity of its JGB holdings from less than three years to more than seven years.[[33]](#endnote-33) This was aimed at government debt management, with a view to “curb medium[-] and long-term funding costs.”[[34]](#endnote-34) Further, the bank increased the purchase of risk assets—ETFs and J-REITs—at a rate of ¥1 trillion and ¥30 billion per year, respectively. Such purchases were intended to increase the prices of these risky assets and thereby reinvigorate asset markets, push up inflationary expectations, and raise prices.[[35]](#endnote-35)

The QQE policy was expected to work through two transmission channels: (1) reducing the nominal interest rates through massive JGB purchases and (2) increasing people’s inflationary expectations through BoJ’s clear commitment to achieving the 2 per cent price-stability target with monetary easing. Together, these would help Japan overcome the deflation of the past 15 years (see Exhibit 5).[[36]](#endnote-36)

Quantitative and Qualitative Monetary Easing with Negative Interest Rate

In January 2016, the BoJ announced another variant of QQE, namely, QQE with negative interest rate. It now sought to implement monetary easing along three dimensions: quantity, quality, and interest rate (see Exhibit 6).[[37]](#endnote-37) The goal was to achieve the price-stability target of 2 per cent, at the earliest possible time. The new interest rate dimension essentially involved the bank applying a negative interest rate to marginal increases of current account balances held by financial institutions to encourage banks to maximize lending.[[38]](#endnote-38)

In September 2016, following a comprehensive macro assessment, the BoJ found that QQE had indeed resulted in a decline in real interest rates, as intended. Core consumer price index inflation (excluding food and energy), which had been −0.5 per cent before QQE, had remained positive for about two and a half years since the introduction of QQE. The BoJ thus pronounced that Japan was no longer in deflation. However, the bank had failed to achieve the 2 per cent price-stability target.[[39]](#endnote-39)

The bank attributed the failure of achieving the price target to the lack of development of adequate inflationary expectations. This itself was due to two factors. The first was that exogenous developments, including a decline in prices of crude oil, a weak domestic demand following the consumption tax hike in April 2014, and a slowdown in emerging economies and volatile global financial markets, had lowered the observed inflation rate. This would prevent the formation of inflationary expectations. The second was that much of the inflationary expectations were based on past inflation (i.e., adaptive expectations). Hence, when the observed inflation rate declined, inflation expectations actually weakened.[[40]](#endnote-40)

Consequently, the bank decided that inflation expectations needed to be raised to achieve the 2 per cent price-stability target. This was difficult and uncertain if expectations formation was based on past inflation data (i.e., through the adaptive mechanism). As such, moving forward, the bank acknowledged the critical role of a forward-looking expectations-formation mechanism in driving up expectations and in moving out of deflation and towards the target rate of 2 per cent.[[41]](#endnote-41) The bank then decided to introduce a new policy framework to strengthen monetary easing as framed under the two earlier frameworks, QQE and QQE with negative interest rate. This was called QQE with yield curve control.[[42]](#endnote-42)

**Quantitative and Qualitative Monetary Easing with Yield Curve Control: 2016**

The new policy framework consisted of two major components. First, the BoJ shifted from the earlier operating target of monetary base control to yield curve control. Yield curve control meant that the bank would seek to reduce real interest rates by controlling both short- and long-term interest rates. Specifically, while the short-term policy interest rate would continue to be −0.1 per cent on excess reserves held in the current account by banks and financial institutions with the BoJ, the bank would, through the purchase of JGBs, also keep the 10-year government-bond yields at zero (see Exhibit 3).[[43]](#endnote-43) When the central bank purchased bonds, bond prices moved up. Given the inverse relationship between bond prices and bond yields, yields would become lower. This control of the short- and long-term yields would steepen the yield curve. Banks could borrow money at cheaper short-term rates and lend at higher long-term rates, thereby availing of opportunities to make profits. Such opportunities were expected to increase banking activity, leading to greater economic activity and, thereby, higher inflation.[[44]](#endnote-44)

The BoJ, under the new policy framework, committed itself to using monetary policy and expanding the monetary base until inflation went above (overshot) the price-stability target of 2 per cent and stayed above this target in a stable manner. This was called the inflation-overshooting commitment. Such commitment was meant to influence people’s expected inflation; people would then use such expected (rather than observed) inflation to form their inflationary expectations. The higher expected inflation would then drive up wages and investments.[[45]](#endnote-45)

**THE POLICY OF ACCOMMODATION**

A continued policy of monetary easing to tackle the problem of zero lower bound had its own risks. Low interest rates under such a policy framework would mean not only that existing firms would undertake inefficient resource allocation but also, more importantly, that firms with very low productivity could continue to exist and flourish, adversely affecting the competitive advantage of the Japanese economy.[[46]](#endnote-46)

The BOJ’s large-scale purchases of ETFs could create stock market bubbles, which would not reflect the true performance of the economy or that of individual companies. Such purchases also carried potential governance risks for these companies, as the central bank turned into a major shareholder in these companies.[[47]](#endnote-47) Low interest rates could also lower savings rates through negative real returns, thereby exacerbating the social divide and discontent.[[48]](#endnote-48)

A major risk of such monetary easing was its impact on fiscal discipline and fiscal sustainability, as the government could raise debt at low interest rates with no incentives to exercise fiscal discipline.[[49]](#endnote-49) Paradoxically, it was Prime Minister Abe’s attempts at fiscal consolidation through consumption tax hikes in 2014 and the consequent drop in GDP growth rate that had formed the basis of successive rounds of monetary easing. Such monetary easing was also required to facilitate Abe’s “second arrow,” namely the fiscal stimulus. Thus, since 2014, not only had Abe postponed the earlier proposed hike in consumption tax, his government had also announced a huge fiscal stimulus package of ¥13.5 trillion in 2016.[[50]](#endnote-50)

Estimates of government debt indicated that in September 2017, the Japanese general government owed a total of ¥1,276.2 trillion in liability, equivalent to 232.4 per cent of the GDP—the highest among developed economies. These liabilities included ¥878 trillion of JGBs, ¥108.5 trillion of treasury bills, and ¥154.3 trillion of loans.[[51]](#endnote-51) In fact, the five years of monetary easing since 2013 had resulted in the BoJ owning about 46 per cent of the JGB market.[[52]](#endnote-52)

Critics of such monetary easing believed that it was the real economy that truly mattered. As such, they wanted the BoJ to stop monetary easing and concentrate on reducing its bloated balance sheet (consisting of various financial assets and JGBs). They believed that the inflation target should be lowered to 1 per cent, and that with inflation on target, the BoJ could wind down its QQE program.[[53]](#endnote-53)

There was an even more basic criticism of whether such massive monetary easing through targeting the monetary base had really had an impact on money stock in the economy (see Exhibit 7). Theoretically, the expansion of the monetary base should have led to a multiple-times increase in the money supply.[[54]](#endnote-54) However, this had not happened. Analysts felt that banks had not been lending the funds provided by the BoJ but had been depositing these funds into their own accounts at the central bank. This had reduced the effect of monetary easing on the real economy. This was further due to reluctance on the part of companies to borrow money or spend more and to save instead, as there was little faith in the BoJ’s claim of getting the Japanese economy to a 2 per cent inflation rate.[[55]](#endnote-55)

The supporters of monetary easing felt that incurring such fiscal spending and the associated risks were worth the effort if it led to inflation and, hence, kick-started the economy. Masahiro Kawai, a professor of economics at the University of Tokyo, had said, “If prices continue to decline, that will kill people’s animal spirits. In other words, people do not invest, do not consume and the economy continues to stagnate.”[[56]](#endnote-56)

The U.S. dollar–Japanese yen rate on March 19, 2013, when Kuroda assumed charge as governor of the BoJ, was US$1 = ¥94.85.[[57]](#endnote-57) Monetary easing had led to the yen depreciating to a rate of ¥112.49 against the dollar on December 31, 2017, thereby benefitting export-driven firms.[[58]](#endnote-58) However, the cost of imports of food, oil, and natural resources, which Japan was highly reliant on, rose.[[59]](#endnote-59) Such easing had also led to a rise in stock prices to much higher levels than before the commencement of the QQE policy in 2013.[[60]](#endnote-60) The Nikkei had reached 22,2764 on December 31, 2017, which was up from 12,1888, when the easing began.

On its part, Abe’s government had tried to get large profitable companies to raise wages by 3 per cent or more, given the positive impact of wage increases on inflation rates. However, Japanese workers preferred job security over demanding wage hikes, fearing job losses as companies either shifted operations abroad or adopted labour-saving technologies.[[61]](#endnote-61) With most advanced countries experiencing synchronous growth, the outlook for inflation from the external environment was promising.[[62]](#endnote-62) However, what was also required were structural reforms in the domestic economy aimed at improving labour productivity and the opening up of Japan’s labour market to increase the size of the Japanese workforce.[[63]](#endnote-63)

In January 2018, despite Japan’s strong growth indicators suggesting an end to over two decades of stagnation, headline inflation continued to remain under 1 per cent. Five years into monetary easing, with the BoJ’s balance sheet already standing at 96 per cent of Japan’s GDP, the policy board of the BoJ had to consider whether the monetary stimulus was doing more harm than good.[[64]](#endnote-64) Was it time for Japan to end its monetary stimulus?

EXHIBIT 1: GLOSSARY OF TERMS

|  |  |
| --- | --- |
| **Term** | **Meaning** |
| **Abenomics** | This refers to the comprehensive economic policy package unveiled by Prime Minister Shinzo Abe in early 2013 as a means to sustainably revive the Japanese economy, which had gone through two decades of economic stagflation, while at the same time maintaining fiscal discipline. The centrepiece of Abenomics has been the three “policy arrows”—aggressive monetary policy, flexible fiscal policy, and growth strategy including structural reform. |
| **Commercial Paper** | Short-term, unsecured debt instrument (promissory notes) issued by companies. |
| **Deflation** | The phenomenon of a continuous and sustained fall in the level of prices in the economy. |
| **Forward Guidance** | This refers to the central bank providing information about its future monetary policy intentions based on its outlook for price stability. If, based on its current and future economic outlook, the central bank were to announce its future monetary policy intentions of keeping key interest rates low, commercial banks would keep long-term interest rates low as well, as they would know that they could borrow from the central bank in case of shortage. This, in turn, would encourage businesses to invest and individuals to spend through borrowings and will stimulate economic activity. It would also bring inflation in line with the price-stability objectives. |
| **Monetary Aggregates** | This is a measure of the amount of money in circulation within a country. Japan defines three monetary aggregates: M1= currency in circulation + deposit money (i.e., demand deposits—cheques and notes held by financial institutions); M2 = M1 + quasi-money (i.e., time deposits, fixed savings, instalment savings, and foreign-currency deposits) + CDs (certificates of deposit); M3 = currency in circulation + deposits at depository institutions. |
| **Monetary Base** | The sum of currency (banknotes and coins) in circulation plus banks’ current account balances at the BoJ. An increase in either of these components on the central bank’s liability side would lead to an increase in the economy’s monetary base. |
| **Official Discount Rate (ODR)** | This was the representative policy interest rate of the BoJ until 1994, which indicated the basic stance of the monetary policy. It was the rate at which the BoJ lent to financial institutions. In this period when interest rates were regulated, there was a basic link between the ODR and the various interest rates in the economy. Thus, a change in the ODR could be used to affect all other interest rates in the economy as well. With the deregulation of interest rates in 1994, the previous ODR began to be called the basic loan rate, the rate at which financial institutions could avail of the BoJ’s Complementary Lending Facility. The basic loan rate acted as a ceiling on the money-market interest rates, namely the uncollateralized overnight call rate. |
| **Open Market Operations** | This is the primary means by which the BoJ conducts its money-market operations to meet the “Guidelines for Money Market Operations,” the bank’s monetary policy stance, decided at the monetary policy meetings. The bank, through open market operations, either provides loans to financial institutions or purchases from or sells to financial institutions financial assets such as Japanese government securities. Under the guidelines, these activities of supplying or absorbing funds in financial markets are done on a daily basis. |
| **Operating Target** | The operating target of monetary policy is the variable that a central bank controls using its monetary policy instruments to achieve monetary goals. |
| **Policy Interest Rate** | The rate that the BoJ directly controls to influence the level of inflation (or other policy goals) in the economy. |
| **Uncollateralized Overnight Call Rate** | The rate at which financial institutions can lend and borrow short-term (overnight) funds. These overnight funds have to be repaid by 10:00 a.m. the next morning and do not require collateral. From the 1990s, the uncollateralized overnight call rate was the main operating target for the BoJ’s money-market operations. From 1998, the bank began to control and maintain these call rates at an appropriate level through open market operations. |

exhibit 1 (continued)

|  |  |
| --- | --- |
| **Yield Curve (Flat)** | This is a line that plots the interest rates, at a set point in time, of bonds having equal credit quality but differing maturity dates. Yield curve shapes indicate future interest rate changes and the course of economic activity. They may be normal upward sloping, inverted, or flat, indicative of economic expansion, economic recession, and economic transition, respectively. A flat yield curve is an indicator of economic transition. As an economy transitions from expansion towards slowdown or even recession, yields on longer-maturity bonds tend to fall, and yields on shorter-term securities tend to rise. This leads to the normal yield curve inverting into a flat yield curve. Conversely, when the economy transitions from recession to recovery and potential expansion, yields on longer-maturity bonds are set to rise and yields on shorter-maturity securities are sure to fall, tilting an inverted yield curve toward a flat yield curve. |
| **Zero Lower Bound** | This is a problem that occurs when the central bank of a country finds it difficult to lower nominal interest rates further to achieve monetary policy objectives, as these interest rates are already close to or at zero. Thus, conventional monetary policies become ineffective when the economy is at the zero lower bound. |

Note: BoJ = Bank of Japan

Source: “About Abenomics,” The Government of Japan, accessed March 1, 2018, <https://www.japan.go.jp/abenomics/about/>; “Bank of Japan FAQs: Price Stability and Monetary Policy,” Bank of Japan, accessed March 5, 2018, <https://www.boj.or.jp/en/announcements/education/oshiete/seisaku/b38.htm/>; “[Notes on Statistics]: Monetary Aggregates (Market Volume, Outstanding)/Currency,” Bank of Japan, accessed March 23, 2018, <https://www.boj.or.jp/en/statistics/outline/note/notest31.htm/>; “Bank of Japan FAQs: Price Stability and Monetary Policy,” Bank of Japan, accessed March 5, 2018, https://www.boj.or.jp/en/announcements/education/oshiete/seisaku/index.htm/; Daniel Harari, “Japan’s Economy: From the ‘Lost Decade’ to Abenomics,” House of Commons Library, October 24, 2013, accessed March 18, 2018, <http://researchbriefings.files.parliament.uk/documents/SN06629/SN06629.pdf>; “Yield Curve,” Investopedia, accessed March 23, 2018, <https://www.investopedia.com/terms/y/yieldcurve.asp>; “The Zero Lower Bound Problem,” Macroeconomic Analysis, accessed March 19, 2018, <http://macroeconomicanalysis.com/macroeconomics-wikipedia/zero-lower-bound-problem/>.

EXHIBIT 2: JAPAN’s REAL GDP GROWTH RATE AND INFLATION RATE, 1980–2017

Note: GDP = gross domestic product

Source: Created by the case author based on IMF DataMapper, “Real GDP Growth: Annual Percent Change,” International Monetary Fund, accessed March 4, 2018, [www.imf.org/external/datamapper/NGDP\_RPCH@WEO/OEMDC/ADVEC/WEOWORLD/JPN/OEMDC/ADVEC/WEOWORLD/JPN?year=2018](http://www.imf.org/external/datamapper/NGDP_RPCH@WEO/OEMDC/ADVEC/WEOWORLD/JPN/OEMDC/ADVEC/WEOWORLD/JPN?year=2018); IMF Data Mapper, “Inflation Rate, Average Consumer Prices: Annual Percent Change,” International Monetary Fund, accessed March 4, 2018, www.imf.org/external/datamapper/PCPIPCH@WEO/OEMDC/ADVEC/WEOWORLD/JPN/OEMDC/ADVEC/WEOWORLD/JPN?year=2018.

EXHIBIT 3: SHORT-TERM NOMINAL INTEREST RATES AND LONG-TERM REAL BOND YIELDS IN JAPAN, 1986–2018

Source: Created by the case author based on Organization for Economic Co-operation and Development, “Immediate Rates: Less than 24 Hours: Call Money/Interbank Rate for Japan (IRSTCI01JPM156N),” FRED Economic Data, Federal Reserve Bank of St. Louis, accessed March 6, 2018, <https://fred.stlouisfed.org/series/IRSTCI01JPM156N>; “Real Japan 10-year Government Benchmark Bond Yield - Yield, Average of Observations through Period,” European Central Bank, Statistical Data Warehouse, accessed March 6, 2018, http://sdw.ecb.europa.eu/quickview.do?SERIES\_KEY=143.FM.M.JP.JPY.4F.BB.R\_JP10YT\_RR.YLDA.

EXHIBIT 4: OFFICIAL DISCOUNT RATE (%)

|  |  |
| --- | --- |
| **Effective Date** | **Basic Discount Rate & Basic Loan Rate** |
| 2001.01.04 | 0.5 |
| 2001.02.13 | 0.35 |
| 2001.03.01 | 0.25 |
| 2001.09.19 | 0.1 |
| 2006.07.14 | 0.4 |
| 2007.02.21 | 0.75 |
| 2008.10.31 | 0.5 |
| 2008.12.19 | 0.3 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Effective Date** | **Official Discount Rate** | **Effective Date** | **Official Discount Rate** |
| 1980.02.19 | 7.25 | 1991.07.01 | 5.5 |
| 1980.03.19 | 9 | 1991.11.14 | 5 |
| 1980.08.20 | 8.25 | 1991.12.30 | 4.5 |
| 1980.11.06 | 7.25 | 1992.04.01 | 3.75 |
| 1981.03.18 | 6.25 | 1992.07.27 | 3.25 |
| 1981.12.11 | 5.5 | 1993.02.04 | 2.5 |
| 1983.10.22 | 5 | 1993.09.21 | 1.75 |
| 1986.01.30 | 4.5 | 1995.04.14 | 1 |
| 1986.03.10 | 4 | 1995.09.08 | 0.5 |
| 1986.04.21 | 3.5 |  |  |
| 1986.11.01 | 3 |  |  |
| 1987.02.23 | 2.5 |  |  |
| 1989.05.31 | 3.25 |  |  |
| 1989.10.11 | 3.75 |  |  |
| 1989.12.25 | 4.25 |  |  |
| 1990.03.20 | 5.25 |  |  |
| 1990.08.30 | 6 |  |  |

Note: The official discount rate was the policy interest rate until 1995; in 1996, the uncollateralized call-money interest rate replaced the official discount rate as the policy rate. In 2006, the official discount rate was changed to the “Basic Discount Rate and Basic Loan Rate.”

Source: Created by the case author based on “Statistics: The Basic Discount Rate and Basic Loan Rate (Previously Indicated as ‘Official Discount Rates’),” accessed March 21, 2018, <https://www.boj.or.jp/en/statistics/boj/other/discount/discount.htm/>.

EXHIBIT 5: TRANSMISSION MECHANISM UNDER QQE ENVISAGED IN 2013

2. Strong and clear commitment to achieving the price-stability target PLUS the Bank of Japan's large-scale monetary easing

Increase in people’s inflationary expectations and dispelling of deflationary mindset

3. Decline in real interest rates

1. Bank’s purchases of Japanese government bonds

5. Observed inflation rate increases

Decline in nominal interest rates

4. Reduction in output gap (economic recovery)

Note: QQE = quantitative and qualitative monetary easing

Source: Adapted by the case author from “Comprehensive Assessment: Developments in Economic Activity and Prices as well as Policy Effects since the Introduction of Quantitative and Qualitative Monetary Easing (QQE),” Bank of Japan, September 21, 2016, accessed April 21, 2018, <https://www.boj.or.jp/en/announcements/release_2016/k160921b.pdf>.

EXHIBIT 6: QQE WITH NEGATIVE INTEREST RATE: THREE DIMENSIONS

Note: QQE = quantitative and qualitative monetary easing; ¥ = JPY = Japanese yen; US$1 = ¥109.18 on January 31, 2018; JGBs = Japanese government bonds; ETFs = exchange-traded funds; J-REITs = Japanese real estate investment trusts. Required reserves constituted the macro add-on balances. Current account balances that financial institutions held during benchmark reserve maintenance periods from January 2015 to December 2015 corresponded to the existing balance and were regarded as basic balances. Reserves in excess of macro add-on and basic balances constituted the policy-rate balances.

Source: Created by the case author based on “Introduction of ‘Quantitative and Qualitative Monetary Easing with a Negative Interest Rate,’” Bank of Japan, January 29, 2016, accessed April 22, 2018, <https://www.boj.or.jp/en/announcements/release_2016/k160129a.pdf>.

EXHIBIT 7: JAPANESE MONETARY BASE AND MONEY SUPPLY (M2), 2012–2017

Source: Created by the case author based on “Introduction of ‘Quantitative and Qualitative Monetary Easing with a Negative Interest Rate,’” Bank of Japan, January 29, 2016, accessed April 22, 2018, <https://www.boj.or.jp/en/announcements/release_2016/k160129a.pdf>.

ENDNOTES

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