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Japan's Economy: Monthly Review

Barriers to Attaining Economic Virtuous Circle with Negative Interest Rate

Implementing a sound economic growth strategy and building a sustainable social security system are essential

Economic Intelligence Team
Mitsumaru Kumagai
Satoshi Osanai
Keisuke Okamoto
Shunsuke Kobayashi
Tsutomu Saito
Kazuma Maeda
Hiroyuki Nagai
Makoto Tanaka

Summary

- **Japan's Economy after Brexit:** A national referendum was held in the UK on June 23rd to determine whether or not the citizens of that country would prefer to withdraw from the EU. The results of the vote found that the majority of citizens choose to leave behind membership in the EU (or "Brexit" as it has come to be known). In this report we provide estimates of the effects of Brexit on Japan's economy calculated using the DIR short-term macro model. Our conclusion is that, assuming repercussions are in the same class as the global financial crisis of 2008 with falling stock prices, yen appreciation and a shrinking global economy, Japan's real GDP could drop by as much as 1.11% in comparison to the benchmark.

- **Barriers to attaining economic virtuous circle with negative interest rate:** The BOJ made the decision to introduce a negative interest rate in January, but this has yet to produce the desired effect on Japan's economy – that of triggering a virtuous circle scenario. The reason is that there are three barriers to the effectiveness of the BOJ's policy. These are (1) turmoil in the global financial markets, (2) weak corporate capex, and (3) worsening of household consumer confidence. As for barrier (1), it would be difficult for the BOJ or the Japanese government to single-handedly cause global market volatility to subside. On the other hand, it can do something about (2) and (3) by responding with appropriate policies. By implementing a sound growth strategy and thereby increasing Japan's anticipated growth rate, improvement of corporate business sentiment can be expected, along with a subsequent increase in capex spending. Meanwhile, by building a sustainable social security system, the government can remove the sense of uncertainty on the part of households regarding the future, and by doing so can also revitalize personal consumption.

1. Japan's Economy after Brexit

1.1 UK Voters Choose to Withdraw from the EU (Brexit)

A national referendum was held in the UK on June 23rd to determine whether or not the citizens of that country would prefer to withdraw from the EU. The results of the vote found that the majority of citizens choose to leave behind membership in the EU (or "Brexit" as it has come to be known). Though global financial markets have calmed since the initial decision, uncertainty regarding the future of the world economy could still increase if withdrawal negotiations between Britain and the EU happen to hit a rough spot. If this occurs, depreciation of the pound and the euro on the global currency markets may be unavoidable, as well as falling stock prices on the world's financial markets.

1.2 Estimating the Effects of Brexit on Japan's Economy

Brexit is most likely to have an effect on Japan's economy via the ripple effect of (1) yen appreciation, (2) stock price lows, and (3) a slowdown in the world economy. As for (1), the purchase of yen as a means of risk avoidance is expected as the sense of uncertainty regarding the world economy increases as a result of Brexit. Yen appreciation has a negative effect on Japan's exports, and declining exports would cause a downturn in the economy. Meanwhile, (2) stock price lows have a chilling effect on consumer confidence, and a decline in consumer confidence would cause personal consumption to decline. Finally, (3) a slowdown in the world economy would bring with it a decline in overseas demand, leading to a decline in Japan's exports and therefore a decline in GDP.

Chart 1 shows estimated values of the effect of Brexit on Japan's economy using the DIR short-term macro model. We look at two cases with somewhat different assumptions: (1) repercussions in the same class as the global financial crisis of 2008 (worldwide real GDP declines by -1.3%), and (2) case using IMF estimates (worldwide real GDP declines by -0.04%). In both cases we assume the same growth rate in the yen-dollar exchange rate and in the rate of decrease in TOPIX.

According to our estimation results, if the yen-dollar rate increases by 15% and TOPIX declines by 20%, case (1) repercussions in the same class as the global financial crisis of 2008 would see Japan's real GDP down by 1.11% in comparison to the benchmark. Meanwhile, case (2) using IMF estimates would see Japan's real GDP down by 0.34%. Estimation results indicate that if effects are limited to the rapid appreciation of the yen and stock price lows, influence on Japan's economy will most likely be fairly minor. However, if the world economy suffers a rapid downturn, leading to a decline in Japan's exports, the Japanese economy could be forced downwards considerably.

Estimation of Brexit's Effects on Japan's Economy — Chart 1

Case (1) Repercussions in Same Class as Global Financial Crisis of 2008

Yen-Dollar Rate of Increase	Rate of Decrease in TOPIX: -10%	-15%	-20%	-25%	-30%
5%	-0.95%	-0.98%	-1.01%	-1.04%	-1.07%
10%	-1.00%	-1.03%	-1.06%	-1.09%	-1.12%
15%	-1.05%	-1.08%	-1.11%	-1.14%	-1.17%
20%	-1.11%	-1.14%	-1.17%	-1.20%	-1.23%
25%	-1.18%	-1.20%	-1.23%	-1.26%	-1.29%

Case (2) Using IMF Estimates

Yen-Dollar Rate of Increase	Rate of Decrease in TOPIX: -10%	-15%	-20%	-25%	-30%
5%	-0.17%	-0.20%	-0.23%	-0.26%	-0.29%
10%	-0.23%	-0.26%	-0.28%	-0.31%	-0.34%
15%	-0.28%	-0.31%	-0.34%	-0.37%	-0.40%
20%	-0.35%	-0.38%	-0.41%	-0.44%	-0.47%
25%	-0.42%	-0.45%	-0.48%	-0.51%	-0.54%

Source: Simulation using DIR short-term macro model.

Notes: 1) Figures show extent to which Japan's real GDP would be forced downwards in comparison to the benchmark (average values of four quarters after occurrence).

2) Case (1) Repercussions in the same class as the global financial crisis of 2008 (worldwide real GDP declines by -1.3%)
Case (2) Case using IMF estimates (worldwide real GDP declines by -0.04%).

3) Figures in red frames represent cases in which all financial markets experience the same extent of effects felt immediately after the beginning of the global financial crisis of 2008 (Oct-Dec period of 2008 recorded yen appreciation of 14% against the dollar and a 21% decline of the TOPIX index).

2. Barriers to Attaining Economic Virtuous Circle with Negative Interest Rate

Over six months have passed now since the BOJ made the decision to introduce a negative interest rate. The introduction of the negative interest rate has so far cut yield on both short-term and long-term government bonds including 20-year and 30-year bonds, hence successfully bringing down the long-term prime rate and interest on housing loans. At the same time, this has made things difficult on financial institutions with the decline in yield on corporate bonds and a shrinking loan-deposit interest spread. It also means that deposits held by households have interest of around 0%, meaning a major decline in interest income.

It would be difficult to claim at this point that negative interest has produced any noticeable benefits to the Japanese economy. However, as pointed out by Bank of Japan Governor Kuroda, if the negative interest rate had not been implemented, Japan's economy would likely have deteriorated even more than it has with the world economy moving further into a slowdown. Moreover, there tends to be a time-lag of several months before positive effects associated with negative interest appear. Hence it is only a matter of time before we begin to see improvements.

In this report, we present an analysis of changes in the environment surrounding Japan's economy since the negative interest rate was introduced, and factors which act as barriers to the activation of a virtuous circle. We also offer arguments regarding measures needed to put Japan's economy back on the road to a virtuous circle.

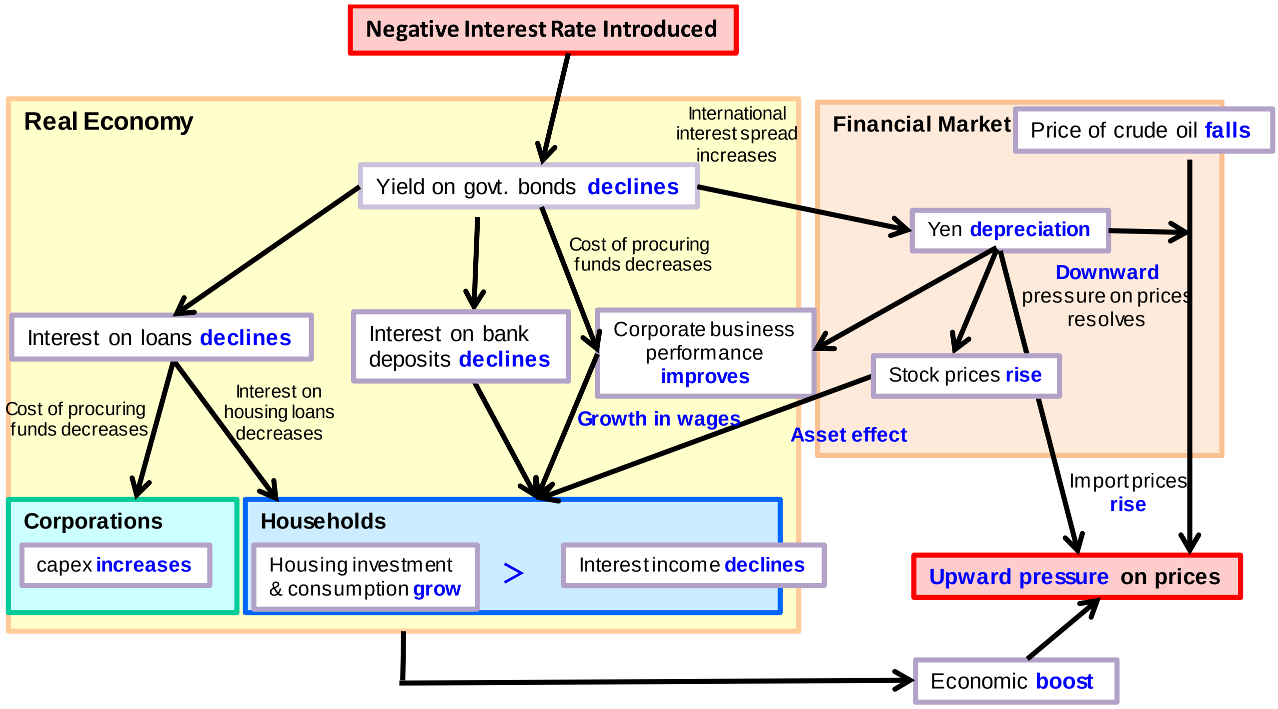
2.1 The Virtuous Circle Scenario Expected for the Economy and Prices by Introducing a Negative Interest Rate

First, we look at Chart 2, which provides a simple overview of exactly what the promised virtuous circle for the economy and prices as a result of introducing the negative interest rate consists of.

The introduction of the negative interest rate is expected to have a positive effect on both the financial markets and the real economy. As for the financial markets, positive influence is expected to come in the form of currency stability (a low yen rate) and stock price highs. Generally speaking, when interest rates are lowered the international interest spread grows (i.e. the difference between domestic and overseas interest rates). This brings pressure on exchange rates so that the yen weakens. Since a weak yen pushes import prices up, the consumer price index also moves upward. As the value of the yen dwindles, the business performance of export-driven corporations improves, causing the stock market to rally.

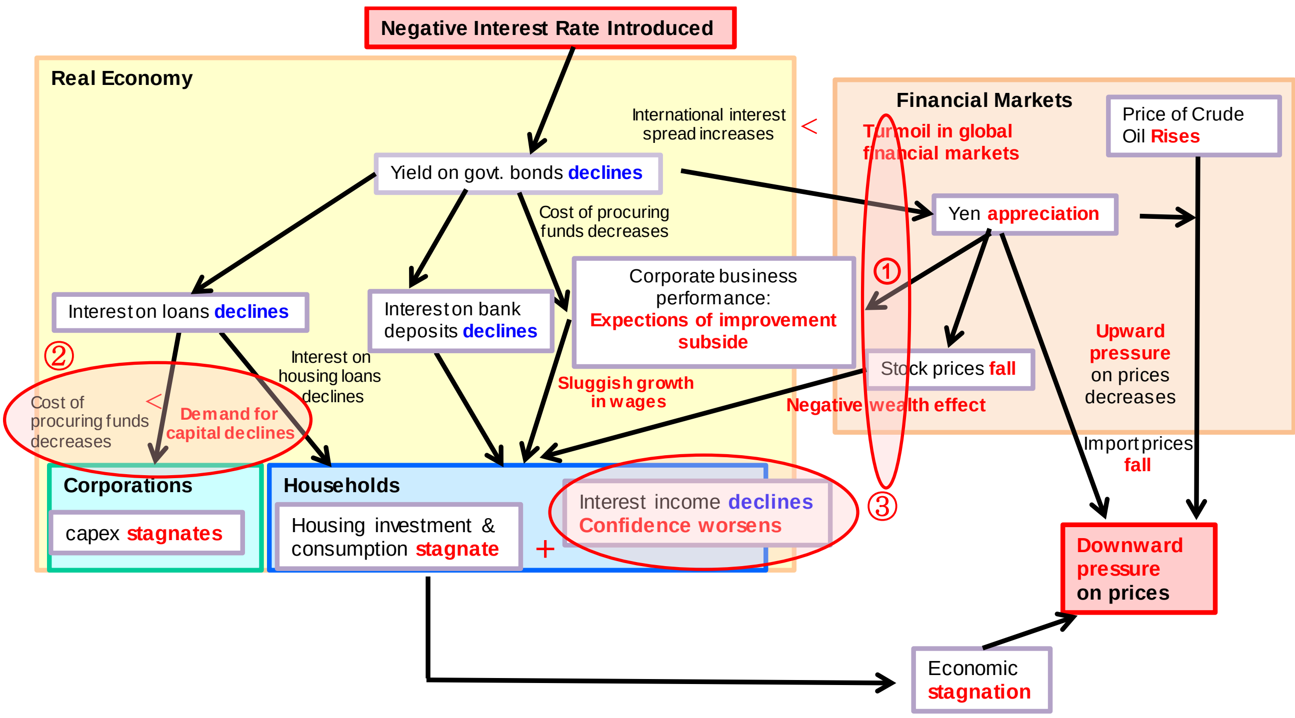
As for the real economy, yield on government bonds declines, bringing declines in interest on loans to corporations and on housing loans. This in turn has the effect of stimulating the willingness to engage in capex spending on the part of corporations and home purchases by households. Meanwhile, positive effects much like those mentioned above in the financial markets appear in the real economy as well. Since corporate business performance improves as a result of the weak yen, wages can also be expected to grow, while rising stock prices encourage the appraised value of assets held by households to grow. This brings more economic confidence to households. By introducing a negative interest rate, a virtuous circle scenario such as that described here promises to be activated, bringing a lift to the economy. This can also bring upward pressure on prices, helping the real economy as well.

Virtuous Circle Scenario Expected for Economy & Prices by Introducing Negative Interest — Chart 2



Source: Produced by DIR.

Issues of Concern Brought on by Introducing Negative Interest — Chart 3



Source: Produced by DIR.

2.2 Issues of Concern Brought on by Introducing Negative Interest

After negative interest was introduced in Japan some new developments have occurred, or could occur, bringing about the possibility of a very different scenario than the virtuous circle scenario shown in Chart 2. A more threatening scenario containing issues of concern in the future is shown in Chart 3. Elements in the chart which remain the same as in the virtuous circle scenario are shown in blue, while those in red are situations which move in the opposite direction and a more worrisome one.

First we take a look at the financial markets. Since yield on both short and long-term bonds has declined since the introduction of negative interest, the factor of interest rates continues to act according to the virtuous circle scenario. However, exchange rates see the yen strengthening against the dollar and the euro. Meanwhile, Japan's stock market begins to fall in reaction to the strong yen, making the appearance of the asset or wealth effect less likely. On the other hand, the real economy does not do as badly since yield on government bonds declines, bringing down interest on loans to corporations and housing loans. Both corporations and households are still able to reap the benefits of the negative interest rate. But as for capital investment and housing investment which had been expected to expand on into the future, it is still unclear at this time.

The original purpose of the Bank of Japan's introducing a negative interest rate was to encourage the consumer price index to reach the targeted growth rate of +2% annually as quickly as possible. This is the BOJ's target for price stability. However, if things continue as they are now, import prices will fall due to the progressively strong yen, and the real economy will be effected by insufficient demand associated with the economic slowdown. This is expected to bring downward pressure on the consumer price index. Looking at the actual growth rate of the consumer price index, we see that it has recently moved into negative territory in year-to-year terms. If downward pressure on prices increases in the future, demands for the Bank of Japan to implement additional monetary easing measures are likely to increase.

Three barriers to realizing the virtuous circle scenario

It would of course be unrealistic to expect the virtuous circle scenario to play itself out exactly as it is on paper. That would be too optimistic. But then what's wrong with the virtuous circle scenario? What is getting in the way of Japan's easily moving into a virtuous circle? We believe that there are three barriers to the activation of a virtuous circle, one which would move toward reflation and growth in prices, which emerged after the introduction of the negative interest rate. These are (1) turmoil in the global financial markets, (2) weak corporate capex, and (3) worsening of household consumer confidence. In the next section we take a close look at each one of these barriers and consider why they have occurred.

2.3 Three Barriers to Japan's Economy Attaining a Virtuous Circle

Barrier (1): Turmoil in the global financial markets

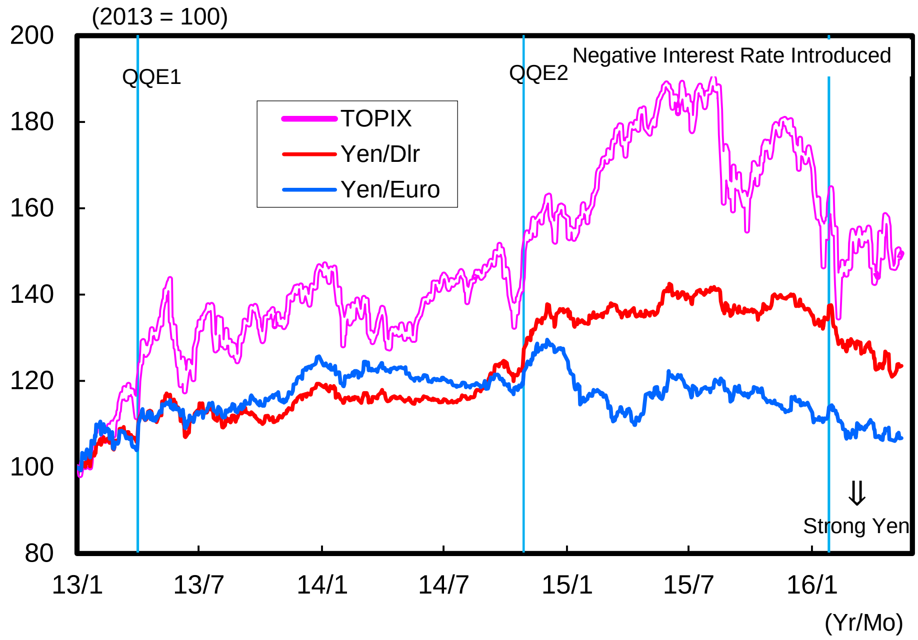
The first barrier is turmoil in the global financial markets. Chart 4 shows trends in yen/dollar and yen/euro rates since 2013, as well as trends on TOPIX. In the past, when the Bank of Japan announced quantitative and qualitative monetary easing measures QQE1 and QQE2, investors sold off yen holdings and TOPIX rallied. However, in January 2016 when the introduction of the negative interest rate was announced there was a different reaction.

Immediately after the Bank of Japan's announcement of its introduction of a negative interest rate at the end of January this year, the yen fell against all of the world's major currencies and TOPIX made major gains. As of that point the financial markets appeared to be reacting positively to the move. However, that reaction turned negative after that point. The reason was that the core of this new policy, interest rates, meant for many in the financial world that monetary easing, which until then had been very successful by increasing quantity, was now nearing its limit. If the BOJ had continued purchasing 80 tril yen in government bonds annually the bank's holdings would have reached over 70% of the outstanding issuance of government bonds by the end of 2020. If it were to purchase 100 tril yen in government bonds annually, its share of holdings would reach over 80% of total outstanding issuances of government bonds. In other words, we can conclude that the bank was gradually reaching its limit in terms of the extent that it could continue making use of the factor of quantity in its monetary policy.

The introduction of a negative interest rate has an unfavorable relationship from all sides. The general awareness is that you can't go very deep in carrying out monetary easing by adjusting interest rates. This is at least one of the reasons that the financial markets shifted to a negative reaction. In addition, the sense of uncertainty regarding the future of the world economy was increasing around the same time the negative interest rate was introduced. Not only had the Fed decided to slow down the pace of its interest rate hikes, but the ECB had also cut its rate a notch, and these developments triggered the purchase of yen. All of these negative factors just happened to stack up at around the same time, leading to the yen's appreciation on the currency markets, as well as the unavoidable collapse of TOPIX.

The strengthening yen and turmoil in the global economy led to fears that the business performance of export-driven corporations would worsen. This also led to dwindling hopes that wages would be increased. Meanwhile, falling stock prices led to a reverse-wealth effect, meaning that there is a possibility that personal consumption will be negatively influenced in the future.

Historical Trends in Yen Rate against the Dollar and Euro, and TOPIX Trends — Chart 4



Source: Bloomberg; compiled by DIR.

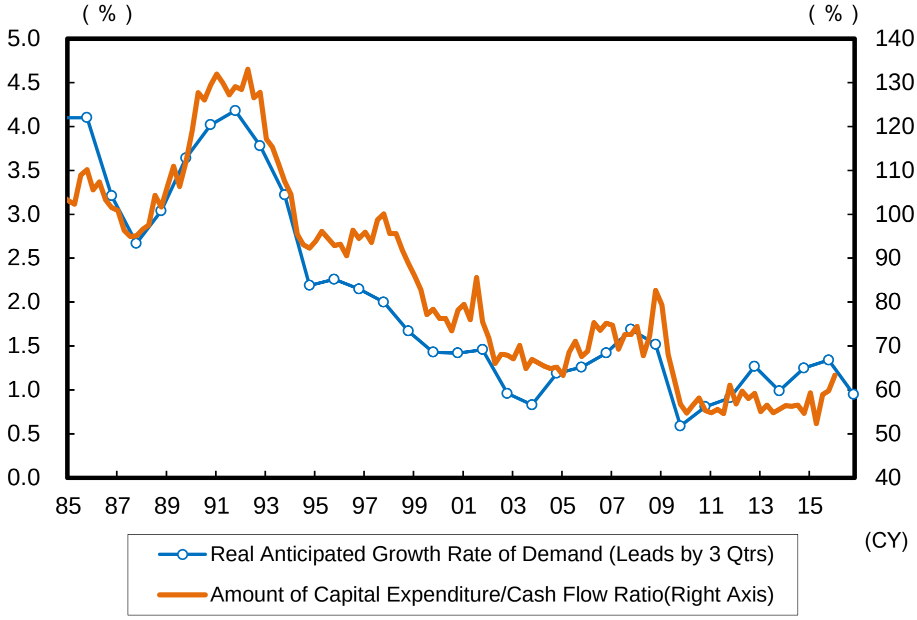
Barrier (2): Weak corporate capex

As for the future of capital expenditure, our outlook sees a moderate growth trend. However, recent capex spending by corporations is sluggish, despite the fact that the introduction of a negative interest rate has improved the environment for procuring capital. Some would say that it is still too early to assess the effect of the decline in interest on capital procurement going toward capex, but we argue in this section that there are structural factors causing capex to become sluggish.

One of the major structural factors causing stagnant corporate capex is the decline in Japan's anticipated growth rate. Chart 5 shows the real anticipated growth rate of demand and trends in the ratio between amount of capital expenditure and cash flow. During the latter half of the 1980s when Japan was still in the midst of its high-growth period, the real anticipated growth rate of demand was high, and corporations were carrying out capital expenditure in excess of cash flow. But once into the first half of the 1990s when Japan's economic bubble burst, the anticipated growth rate began to decline. More recently it was at a level just below 1%. Along with the change in the 1990s, the ratio between amount of capital expenditure and cash flow declined. Since the year 2009 it has settled at around 50%. Corporations now have plenty in cash holdings, and with low expectations for future growth, there is not much incentive for becoming more aggressive in capital expenditure and increase borrowings from financial institutions despite the low interest. Another factor behind sluggish capital expenditure is that having come through the financial crisis, there are fewer corporate managers who still have the raw ambition to succeed.

The findings of the Bank of Japan's April Regional Economic Report (*the Sakura Report*) seem to be consistent with the above argument. The report lists the following reasons that corporations are cautious regarding domestic capital expenditure: (1) An increasing sense of uncertainty regarding the future, (2) The anticipated growth rate is low, so there is no reason to invest more, (3) Priority is on improving weak financial condition, (4) Lack of personnel who can take over management of the company in the future, and general shortage of manpower, (5) Increase in overseas onsite production, and (6) Lack of desire or motivation to expand business.[1]

Real Anticipated Growth Rate of Demand, and Amount of Capital Expenditure/Cash Flow Ratio
Chart 5



Source: Ministry of Finance, Cabinet Office; compiled by DIR.
Note: Real anticipated growth rate of demand is an all-industry figure. Indicates outlook five-years into the future.

[1] Bank of Japan Regional Economic Report (*Sakura Report*), April 2016.

Barrier (3): Worsening of household consumer confidence

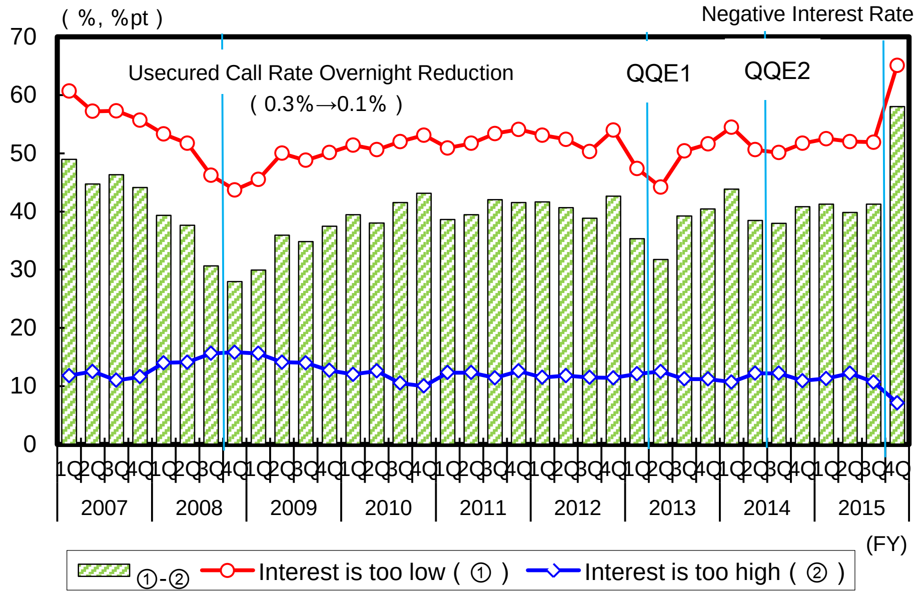
The third barrier which we will discuss here is the deterioration of household consumer confidence.

As was pointed out earlier, fears are rising that the business performance of export-driven corporations may deteriorate, due to the progressively strong yen since the beginning of the year and a slowdown in the world economy. If business performance worsens, its influence could cause a ripple effect leading all the way to the household sector through the restraining of wage hikes and cutting back on bonus payments, and ultimately cutbacks in hiring. Currently these negative effects have not yet appeared, but if the sense of anxiety regarding employment increases in the future, household consumer confidence will experience a chilling effect.

Feelings of strong dissatisfaction in regard to the fact that interest on bank deposits has fallen to around 0% in association with the introduction of the negative interest rate may also be affecting household consumer confidence. This point can be confirmed by referring to the Bank of Japan’s *Opinion Survey on the General Public's Views and Behavior*, which indicates the opinions of individuals regarding the interest level (Chart 6). The Bank of Japan reduced the policy interest rate (the unsecured overnight call rate) from 0.3% to 0.1% in December 2008. Then in 2013 and 2014 the bank implemented QQE1 and QQE2. But at that time the difference between the ratio of survey respondents who answered that the interest rate was too low to those who responded that the interest rate was too high ((1)-(2)) was flat. But when the survey was taken again after the introduction of the negative interest rate, the ratio of survey respondents who answered that the interest rate was too low grew sharply, many adding that the rate was already low enough before. The result was that many more respondents thought that the interest rate is now too low than respondents who thought it was too high.

The decline in interest on bank deposits has a major influence on the lives of private citizens, especially the elderly who have a large amount in savings. Another characteristic of the elderly is that they also tend to hold more in stock shares than do young adults (Chart 7). It is likely that the reverse-wealth effect is affecting the elderly much more as well, due to the collapse of stock prices with the turmoil in the financial markets. This in turn is expected to have a negative effect on consumer confidence. Looking at consumer expenditure by age group we see that the elderly are comparatively higher in expenditure than young adults. The number of elderly households is growing yearly due to the phenomenon of the super-aged society to the point where the number of elderly households has a huge influence on personal consumption as well. The worsening of consumer confidence amongst the elderly creates a much heavier than expected weight on statistics regarding the consumer activity of the household sector in the macro sense, and this is something which must be kept in mind when viewing said statistics.

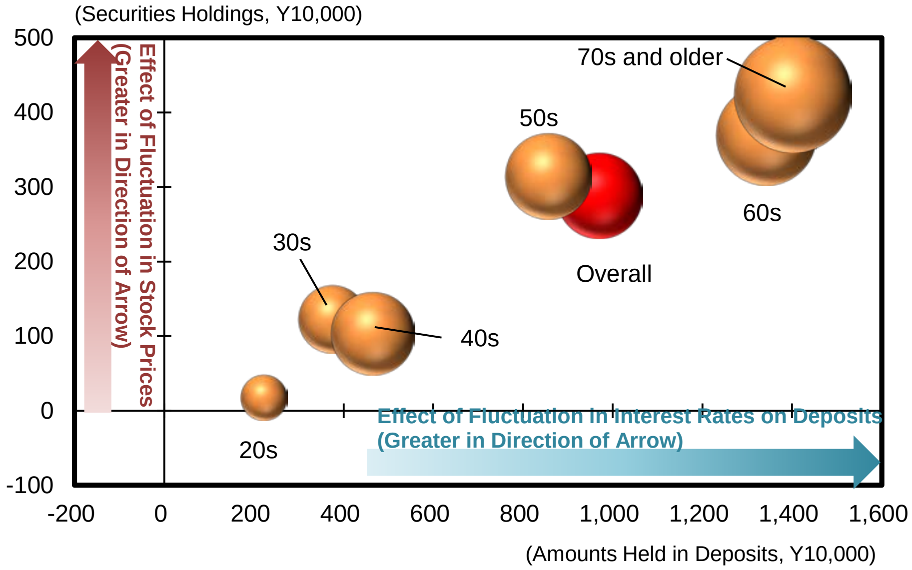
Individual Opinions Regarding Level of Interest Rate — Chart 6



Source: Bank of Japan; compiled by DIR.

Note: Ratio of responses to survey regarding level of interest rate (too low : too high).

Deposits and Securities Holdings by Age of Head of Household (Households Holding Financial Assets, 2015) — Chart 7



Source: The Central Council for Financial Services Information, Ministry of General Affairs and Communication; compiled by DIR.

Note: Size of circles represents number of households as of 2015. Overall category is a simple average of number of households.

2.4 Handling the Three Barriers will open the Way to Defeating Stagnation in Japan's Economy

In this chapter we have demonstrated how certain problems or barriers stand in the way of Japan's economy attaining a virtuous circle. These barriers are (1) turmoil in the global financial markets, (2) weak corporate capex, and (3) worsening of household consumer confidence. The question now is how to break through these barriers as a means of activating the virtuous circle scenario. Here we discuss the possibility of opening the way to defeating stagnation in Japan's economy.

The Japanese government and the Bank of Japan do not have the power to bring a stop to turmoil in the global financial markets

As for how to handle the first barrier, turmoil in the global financial markets, the Japanese government could bring a stop (at least to a point) to the rapidly appreciating yen in the short-term through verbal intervention. However, the Japanese government and the Bank of Japan do not have the power to dramatically change the recent strong yen/weak dollar trend as long as the Fed has indicated its stance toward slowing the pace of raising the US interest rate. The Fed has a huge amount of influence on the world's financial markets. The Fed is now slowing the pace of raising the FF rate in response to the gradual slowing down of the US economy since interest rate hikes began at the end of last year.

On the other hand, there is room for improvement in the Bank of Japan's ability to communicate its policies to the markets. During his time as governor of the Bank of Japan, Kuroda has poured his heart and soul into producing a series of surprises, such as announcing a bold monetary easing policy greatly exceeding market expectations. But then at the April BOJ Monetary Policy Meeting he went against market expectations and announced a delay in further monetary easing, hence causing sudden and extreme fluctuations in exchange rates and stock prices. Many are of the opinion that the BOJ Monetary Policy Meeting itself had become a factor in creating turbulence in the market. It is hoped that in the future the Bank of Japan will find a better way of communicating its monetary policy so as to avoid creating turmoil in the markets.

Reliable implementation of original Third Arrow (growth strategy to stimulate capex) is the point

The key to successfully activating the virtuous circle scenario in Japan's economy is to handle the other two barriers – weak corporate capex and worsening of household consumer confidence. Unlike the first barrier (turmoil in the global financial markets) this is something which can actually be dealt with and improved by implementing the right policies.

The government's reliable implementation of Abenomics' original *Third Arrow* (growth strategy to stimulate capex) is essential in order to activate the virtuous circle scenario. While the Bank of Japan continues a proactive monetary easing policy, the government must accelerate its efforts to liberalize Japan's bedrock policies and lower the effective corporate tax rate. If the government can shift its attention to executing mid to long-term improvements and structural reform of fundamental economic institutions, the future will become more promising and corporate willingness to carry out capital expenditure will begin to improve.

Building a sustainable social security system is essential to raising household consumer confidence

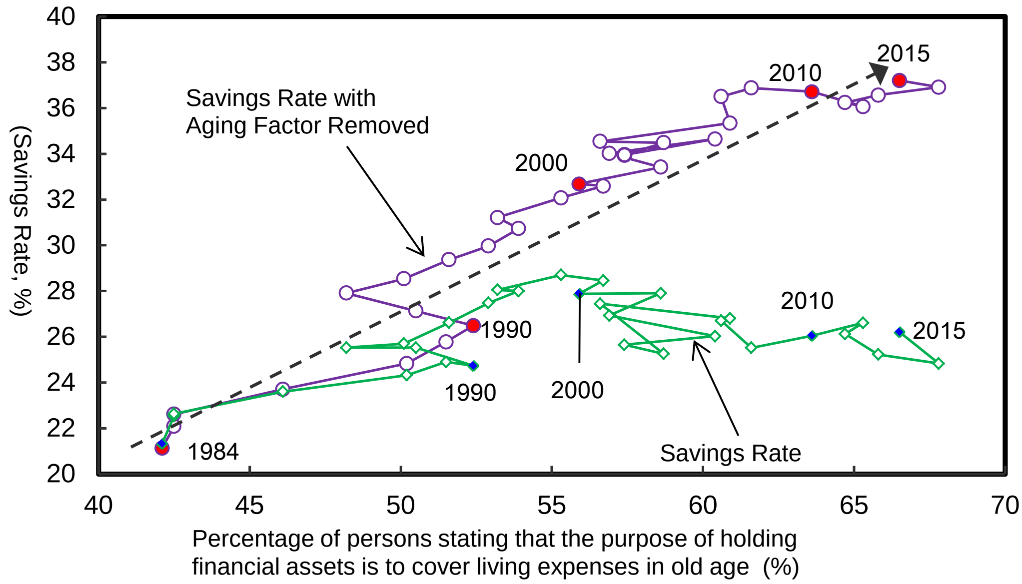
As for personal consumption, skepticism regarding the sustainability of Japan's pension system creates a sense of anxiety regarding the future, and this may contribute to keeping household consumer confidence in check. Looking at the Ministry of Internal Affairs and Communications survey regarding the purpose of holding financial assets, we see that since the 1980s, the percentage of Japanese citizens holding financial assets in order to cover living expenses in old age has been on the increase. In other words, we can infer that many people are increasing savings and holding back on consumption due to anxiety regarding old age.

Chart 8 displays the results of the Ministry of Internal Affairs and Communications survey on the purpose of holding financial assets. The vertical axis shows the savings rate based on a household survey, and the horizontal axis shows the percentage of persons responding that the purpose is to cover living expenses in old age. As Japan's society progressively ages, the number of citizens gradually using up their savings as a means of covering living expenses is on the rise. This is why Japan's actual savings rate overall has been in a decline since the year 2000. However, if we remove the aging factor from the mix and calculate Japan's overall savings rate without the elderly population, we see that it is actually growing at the same time anxiety regarding the future is on the rise in the younger age groups.

The fact that the savings rate is on the rise due to anxiety regarding the future means that Japanese citizens are holding back on consumption. In other words, skepticism regarding the sustainability of Japan's social security system is creating a sense of anxiety regarding the future, thus causing the savings rate to grow, while also possibly becoming a factor in holding down personal consumption. It follows from this observation that in order to revitalize personal consumption, Japan's social security system must be restructured so that it becomes a sustainable one. It is essential to remove the factor of the Japanese people's anxiety regarding the future.

The subject of reforming the social security system, including the possible necessity of holding down benefit payments, is one that citizens depending on those benefits do not want to hear about, and elected representatives avoid dealing with since it could become such a hot-button issue. All one can say is that the nation awaits a wise decision on the part of the Abe administration – one which properly takes Japan's future into consideration.

Financial Planning for Life After Retirement and Household Savings Rate **Chart 8**



Source: Ministry of Internal Affairs and Communications, Bank of Japan; compiled by DIR.

Note: Savings rate from household survey "Rate of Surplus". Aging factor found by estimating savings rate. The forecast formula is as follows: Savings rate = 18.01 – 0.75 x aging rate + 0.16 x anxiety regarding the future +0.01 x household assets (-2). Aging rate and household asset factors have a significance of 1%. Anxiety regarding the future has a significance of 5%. Anxiety regarding the future is the percentage of persons stating that the purpose of holding financial assets is to cover living expenses in old age in reply to surveys regarding the purpose of holding financial assets.

Economic Indicators and Interest Rates — Chart 9

Indicator	2015 Oct-Dec	2016 Jan-Mar	2016 Apr-Jun	2016 Jul-Sep	2016 Oct-Dec	2017 Jan-Mar	FY14	FY15	FY16	FY17
	Actual		DIR estimates				Actual		DIR estimates	
Real GDP										
Q/q %, annualized	-1.8	1.9	0.4	1.1	1.3	0.6				
Y/y %	0.7	0.1	0.5	0.4	1.2	0.8	-0.9	0.8	0.7	0.7
Current account balance SAAR (Y tril)	19.2	19.8	20.2	20.4	21.0	21.4	8.7	17.7	20.7	23.0
Unemployment rate (%)	3.3	3.2	3.2	3.2	3.2	3.1	3.5	3.3	3.2	3.1
CPI (excl. fresh foods; 2010 prices; y/y %)	0.0	-0.1	-0.3	-0.1	0.2	0.7	2.8	-0.0	0.1	0.9
10-year JGB yield (period average; %)	0.29	-0.01	-0.15	-0.25	-0.25	-0.25	0.46	0.26	-0.22	-0.25

Source: Compiled by DIR.
Note: Estimates taken from DIR's *Japan's Economic Outlook No.189 Update (Summary)*.