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The Impact of Two Price-rising Factors on Japan's Inflation Assessment

Focus on deterioration of GDP gap after increase in consumption tax

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Summary

- There is rising concern regarding two factors that could cause an increase in Japan's consumer price index in the future. These are (1) the planned increase in consumption tax scheduled for October 2019, and (2) the rising price of crude oil since spring this year. In this report, we provide an estimate of the extent to which these factors may impact CPI, while at the same time considering the implications that this could have on Japan's efforts to overcome deflation and achieve its target for inflation.

- It is our assumption that the increase in consumption tax and the issue of making preschool education free of charge will not directly impact the overall assessment of CPI, or the government's efforts to overcome deflation and reach the BOJ inflation target of 2%, other than to act as special, temporary factors. On the other hand, if the GDP gap which the government is especially concerned about falls larger than expected after the planned increase in consumption tax, the goal of overcoming deflation will only grow more distant.

- Once the approximately 20% rise in the price of crude oil since the spring of 2018 manifests itself more completely, upward pressure (in y/y terms) is expected to be experienced in certain elements of Japan's core CPI (excluding fresh food), mainly (1) a direct effect via energy expenses pushing CPI up by around +0.29%pt, and (2) an overall effect of around +0.37%pt in consideration of economic structure. In other words, there will be an unambiguous effect of rising oil price on core CPI, and with the time lag that occurs before feeling the entirety of the ripple effects, its impact is expected to continue for some time. However, impact on new core-core CPI (excluding fresh food and energy) is expected to be less than on core CPI. Considering this factor, the comprehensive effect is that at this time, we do not expect the government to reach its goal of overcoming deflation or of reaching the BOJ's target of 2% inflation.

Introduction

Japan's consumer price index is currently moving in the positive range in y/y terms, though the extent to which it is on the plus side is relatively minor. Even so, the government's goal of overcoming deflation, as well as the BOJ target of 2% inflation, continue to face a high hurdle. There is rising concern regarding two factors that could cause an increase in Japan's consumer price index in the future. These are (1) the planned increase in consumption tax scheduled for October 2019, and (2) the rising price of crude oil since spring this year. In this report, we provide an estimate of the extent to which these factors may impact CPI, while at the same time considering the implications that this could have on Japan's efforts to overcome deflation and achieve BOJ's target for inflation.

1. Impact of the Increase in Consumption Tax Planned for October 2019

First prime minister to implement two consumption tax hikes during his tenure

Prime Minister Shinzo Abe made a formal announcement during the extraordinary cabinet meeting of October 15, 2018 that he planned to go ahead as planned with the increase in consumption tax scheduled for October 2019. The government had already stipulated in writing in its "Basic Policy on Economic and Fiscal Management and Reform 2018," approved by the cabinet on June 15, 2018, that the consumption tax rate would be raised from 8% to 10% in October 2019. However, the people of Japan still held the strong assumption that the increase in consumption tax would be postponed since this had happened twice in the past (Chart 1). In any case, the understanding now is that implementation of the consumption tax hike is a done deal[1].

History of the Consumption Tax Hike Issue Under the Abe Administration **Chart 1**

April 2014 consumption tax hike implemented as planned
(announced 6-Months in advance)

Aug. 26, 2013	Inspection meeting regarding future economic and fiscal trends (8/26 - 8/31 met 7 times).
Oct. 1, 2013	PM Abe announces that consumption tax w ill be raised to 8% on Apr. 1, 2014.
Apr. 1, 2014	Consumption tax rate increased.

October 2015 consumption tax hike postponed for 1 year, 6 months till April 2017
(announced 10.5-months in advance)

Nov. 4, 2014	Meeting regarding future economic and fiscal trends (11/4 - 11/18 met five times).
Nov. 17, 2014	Jul-Sep 2014 real GDP unexpectedly experiences decline for tw o consecutive quarters.
Nov. 18, 2014	PM Abe announces postponement of tax hike and dissolution of House of Representatives.
Dec. 14, 2014	LDP-Komeito coalition w ins House of Representatives election.

April 2017 consumption tax hike postponed for 2.5 years til October 2019
(announced 10-months in advance)

Mar. 16, 2016	Meeting regarding international financial and economic analysis (3/16-5/19 met 7 times).
June 1, 2016	PM Abe announces that consumption tax hike to be postponed for 2 yrs 6 months.
July 10, 2016	LDP-Komeito coalition w ins House of Councillors election.

Oct. 2019 consumption tax hike
(announced 1-year in advance that implementation would take place as planned)

Oct. 15, 2018	PM Abe announces that consumption tax hike to be implemented as planned, and indicates economic measures.

Source: Various news reports; compiled by DIR.

[1] At the same time, it goes without saying that there is always the possibility that the tax hike could be suddenly postponed in the event of an unprecedented financial or economic crisis.

The last time an increase in consumption tax was implemented, in April 2014, the announcement was made only six months before the fact. In contrast, the currently planned increase was announced one year in advance. The earlier announcement was made in light of the necessity of handling corporate issues in association with introduction of the reduced tax rate, and in order to make sure that information regarding policy measures to equalize the effects of economic fluctuations was properly disseminated. Not a few observers are of the opinion that it was felt to be important to let the public know about the decision as soon as possible in view of next year's House of Councillors election and nationwide local elections.

If the increase in consumption tax is implemented as planned, Prime Minister Abe will become the first prime minister in history to have increased the consumption tax twice during his time in office. If we ignore the reduced tax rate and the free preschool education being offered to people who need it (this being a major, unprecedented relief policy), raising the consumption tax twice during Abe's time in office is definitely something worth taking note of, especially in view of the fact that dealing with the consumption tax issue has meant literally entering the gates of hell for past administrations.

The extent to which increasing the consumption tax brings upward pressure on CPI figures is expected to be less than half that experienced the last time a tax hike was implemented

In this section we examine the extent to which Japan's CPI was forced upwards by the initial introduction of the consumption tax in April 1989, and increases in the consumption tax in April 1997 and April 2014. Then we provide an estimate of the impact of the planned increase in October 2019, along with the expected impact of free preschool education offered to those who need it (Chart 2)[2].

Impact on CPI (y/y, %) of the Introduction of Consumption Tax and Consumption Tax Hikes   Chart 2

<table>
<tr><th></th><th colspan="3">Estimating Agency</th><th>CPI (%pt)</th><th>Core CPI (%pt)</th></tr>
<tr><td>April 1989 (3%)</td><td colspan="3">Former Economic Planning Agency</td><td>1.2</td><td>-</td></tr>
<tr><td rowspan="2">April 1997 (3%→5%)</td><td colspan="3">Ministry of Internal Affairs and Communications</td><td>1.4</td><td>1.4</td></tr>
<tr><td colspan="3">Former Economic Planning Agency</td><td>1.5</td><td>-</td></tr>
<tr><td rowspan="3">April 2014 (5%→8%)</td><td colspan="3">Ministry of Internal Affairs and Communications</td><td>2.0</td><td>2.0</td></tr>
<tr><td colspan="3">Bank of Japan</td><td>2.1</td><td>2.0</td></tr>
<tr><td colspan="3">Cabinet Office</td><td>2.0</td><td>2.0</td></tr>
<tr><td rowspan="4">Oct. 2019 (8%→10%)</td><td rowspan="4">DIR</td><td rowspan="2">No Reduced Tax</td><td>No Free Preschool Education</td><td>1.3</td><td>1.3</td></tr>
<tr><td>With Free Preschool Education</td><td>0.7</td><td>0.6</td></tr>
<tr><td rowspan="2">With Reduced Tax</td><td>No Free Preschool Education</td><td>1.0</td><td>1.0</td></tr>
<tr><td>With Free Preschool Education</td><td>0.3</td><td>0.4</td></tr>
</table>

Source: Former Economic Planning Agency, Ministry of Internal Affairs and Communications, Cabinet Office, BOJ, and Cabinet Secretariat; compiled by DIR.

Notes: 1) Core CPI excludes fresh food.
2) The 1989 estimate by the Former Economic Planning Agency includes effect of abolishing commodity tax.
3) Estimated values of the Ministry of Internal Affairs and Communications derived from the difference between official values and the index adjusted for consumption tax. Both values are taken as of May when transitional measures lose their effect.
4) BOJ estimates for 2014 assume complete pass-through.
5) Cabinet Office estimates for 2014 are as of May.
6) DIR estimates for 2019 assume full pass-through. Calculation using data from April 2018 CPI. CPI statistics assume impact on nursery school fees to be for 3-5 year olds only. Weight calculated based on number of nursery school children by age. These results should be understood as covering a certain range.

[2] Although it has not yet been decided how the question of free preschool education will be handled, it should be noted that we have included our estimate based on what is known at this time. In addition, for the purposes of this estimate, we assume that the impacts of free preschool education and the increase in consumption tax will be felt at the same time (i.e. in October 2019).

When the consumption tax was first introduced in April 1989, the consumer price index grew by around +1.2%pt y/y. Then, in April 1997 when the consumption tax was increased it is estimated to have grown by around +1.5%pt, and in April 2014 when it was again increased, by around +2.0%pt. It should be noted that when the consumption tax was introduced in April 1989, an additional tax rate of 3% was applied, but at the same time, the commodity tax was abolished. Therefore the impact on CPI in y/y terms was smaller than when the consumption tax was in increased in April 1997 (3% → 5%) and April 2014 (5% → 8%).

Now we move to an estimation of the impact of the planned increase in consumption tax in October 2019 (8% → 10%) on CPI in y/y terms. Here we have two different situations: the first case in which there is a reduced tax rate and no free preschool education, in which impact on CPI would be around +1.0%pt, and the second case in which a reduced tax rate and free preschool education is applied. Here the impact is estimated to be around +0.3%pt. In other words, the planned increase in 2019 is expected to have the least impact in comparison to the last three times a change has been made to the consumption tax, and less than half the impact of the last increase in consumption tax. There are three factors behind this: (1) the extent to which the consumption tax is being raised is small, (2) a reduced tax rate is being introduced at the same time, and (3) free preschool education will be introduced at the same time.

Finally, the original introduction of the consumption tax and subsequent increases in consumption tax were all implemented in the month of April in contrast with the next planned increase in consumption tax in 2019, which is to be implemented in the month of October. The result of this change is to shift the fiscal impact to the second half of the fiscal year alone (October 2019 to March 2020). Hence the extent of the impact on core CPI in y/y terms for the entire year of fiscal 2019 will be half that shown in Chart 2, while the remaining impact will occur during fiscal 2020.

In determining whether deflation has been overcome, the worsening of the GDP gap is the more telling point rather than the effect of increasing the consumption tax

Now the next question is how do we approach the impact of price fluctuations associated with the planned increase in consumption tax in October 2019 and free preschool education on the overall assessment of the consumer price index by the government and the BOJ? Judging from past monthly economic reports by the Cabinet Office and the quarterly BOJ's Outlook for Economic Activity and Prices, the increase in consumption tax and the issue of making preschool education free of charge will not directly impact the overall assessment of CPI other than to act as special, temporary factors. In other words, they will have no direct effect on the government's goal of overcoming deflation or the BOJ's inflation target of 2%.

On the other hand, if personal consumption and housing investment, as well as other GDP components, suffer declines after the increase in consumption tax, leading to a major decline (worsening) in the GDP gap, which indicates the balance of supply and demand on the macro level, then recovery from the tax increase could be delayed. This would have the effect of bringing downward pressure on CPI. In other words, it would work against the government's goal of overcoming deflation and the BOJ's reaching its inflation target of 2%. The government is placing special importance on the GDP gap as one of the factors underlying fluctuation of the consumer price index. If the GDP gap falls unexpectedly low, the government's goal of overcoming deflation will grow more distant[3].

The planned increase in consumption tax scheduled for October 2019 is expected to have less impact than the increase of April 2014, due to the introduction of a reduced tax rate and free preschool

[3] In judging where the Japanese economy stands in terms of overcoming deflation, the government looks at two indices in its assessment of prices: (1) the consumer price index, and (2) the GDP deflator. The important variant factors behind these are (1) the GDP gap, and (2) unit labor cost.

education, as well as measures to equalize the effects of economic fluctuation. However, the extent to which economic fluctuation will occur remains an unknown. Considering the uncertainty regarding the future of the economy, it is expected that most likely, the government will not make any announcements containing a strong political message such as its declaration to overcome deflation before the increase in the consumption tax.

2. Impact of Rising Price of Crude Oil on CPI

Growth of 20% in the price of crude oil has a direct impact on core CPI, pushing up the index by around +0.29%pt in y/y terms

The price of crude oil on the international commodities market hit bottom in June 2017 and has been on the rise ever since. The price has risen around 20% since spring of 2018 and has been attracting attention as a factor in pushing up the level of CPI. In this section we provide an estimate of the impact on CPI in terms of (1) the direct effect via energy expenses, and (2) the overall effect in consideration of economic structure.

First we estimate the direct effect on CPI which occurs via the increase in energy prices (electricity, gas for cooking, kerosene, and gasoline for cars). Based on past statistics, when the price of crude oil rises by 10%, energy prices in general also rise, with core CPI (excluding fresh foods) estimated to be forced upwards by around +0.15%pt in y/y terms (Chart 3). The price of crude oil has risen around 20% since spring of 2018, and once the impact becomes more fully manifest, core CPI in y/y terms will be forced upwards by around +0.29%pt.

Looking at the individual components making up energy prices, we see that contribution to overall increase is especially large for gasoline (around +0.13%pt). The next biggest contributor is electricity. The price of electricity actually carries more weight than gasoline as a component of core CPI, but the growth rate in the price of gasoline now considerably exceeds that of electricity. Hence there is a difference of twice as much in the case of both of these components.

Impact of Rising Crude Oil Prices on Core CPI (y/y) ((1) Direct Impact via Energy Expenses) Chart 3

	Price of Crude Oil on International Commodities Market				
	Up 10%	Up 20%	Up 30%	Up 40%	Up 50%
Electricity (9-10 month lag)	0.03%pt	0.06%pt	0.09%pt	0.12%pt	0.15%pt
Gas (9-10 month lag)	0.03%pt	0.06%pt	0.09%pt	0.12%pt	0.15%pt
Kerosene (around 2-month lag)	0.02%pt	0.04%pt	0.06%pt	0.08%pt	0.10%pt
Gasoline (around 1-month lag)	0.07%pt	0.13%pt	0.20%pt	0.26%pt	0.33%pt
Total (impact fully manifest)	0.15%pt	0.29%pt	0.44%pt	0.59%pt	0.73%pt

Source: Ministry of Finance, Ministry of Internal Affairs and Communications, Bloomberg; compiled by DIR.
Notes: 1) Estimated impact based on data from January 2012 to March 2018.
2) Lag time based on correlation coefficient for time difference.
3) Linkage between crude oil import price and LNG import price taken into consideration in estimating price of electricity and gas.
4) Since methods of estimating impact vary, as well as periods of time covered by the various data used, extent of impact can differ. Hence these results should be understood as covering a certain range.

Impact of Rising Crude Oil Prices on Core CPI (y/y) ((2) Overall Effect Considering Economic Structure) Chart 4

	Price of Crude Oil on International Commodities Market				
	Up 10%	Up 20%	Up 30%	Up 40%	Up 50%
Core CPI	0.18%pt	0.37%pt	0.55%pt	0.73%pt	0.92%pt

Source: Ministry Internal Affairs and Communications, Cabinet Office; compiled by DIR.
Notes: 1) Estimated impact based on multiplier of the Cabinet Office's macro econometric model for the short-term Japanese economy (2018), and the elasticity of private final consumption expenditure deflator for core CPI (excluding fresh foods) (from 2010 to 2017).
2) These results should be understood as covering a certain range.

Next, we estimate the overall effect on CPI in consideration of economic structure using the Cabinet Office's macro econometric model for the short-term Japanese economy announced in September 2018. If the price of crude oil rises by 20%, core CPI is estimated to be pushed up by around +0.37%pt y/y (Chart 4). This includes the indirect effects as well, coming from the price of materials derived from petroleum and the increase in transport and shipment costs. Because of these indirect effects, the impact is larger than the direct effect from the cost of energy.

Meanwhile, considering the fact that core CPI was at +1.0% y/y just recently in September 2018, we can assume that the rising price of crude oil since spring of this year, when upward pressure on prices began to be clearly felt, will continue to have an impact for some time as there is usually some time lag before the ripple effects are felt.

General assessment of consumer price index will likely move upwards

We now consider the impact of fluctuations in the price of crude oil on the general assessment of the consumer price index by the government and the BOJ. This question has mainly to do with which of the CPI measurements should be used in seeking out the most accurate estimate of CPI trend[4]. The most important indices to look at are mainly (1) core CPI (excluding fresh foods) and (2) new core core CPI (excluding fresh foods and energy)[5].

The rising price of crude oil since the spring of 2018 has brought upward pressure on both core CPI and new core core CPI. Hence the government and the BOJ are of the opinion that this phenomenon will cause their general assessment of the consumer price index to move upwards. However, impact on new core-core CPI is expected to be less than on core CPI. Considering this factor, the comprehensive effect is that at this time, we do not expect the government to reach its goal of overcoming deflation or of reaching the BOJ's target of 2% inflation.

[4] For more detailed information on this question, see Shiratsuka, S. (2015) "Performance of Core Indicators of Japan's Consumer Price Index", Bank of Japan Review, 2015-E-7.
[5] It should be noted that the government and the Bank of Japan do make use of other indices in addition to the two main core indices in making comprehensive assessments of the consumer price index.

IMPORTANT