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# Mizuho Economic Outlook & Analysis

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March 8, 2018

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## *The rise of “familiar prices”<sup>1</sup> is pushing down consumer spending*

*Households are sensitive to rising food and energy prices and practical price increases*

### < Summary >

- ◆ The steep rise of vegetables prices due to bad weather, the increase of gasoline prices stemming from the rise of crude oil prices, and practical price increases through the replacement of old products with new ones and adjustment of product volumes have contributed to make familiar prices for households higher than real price increases.
- ◆ Familiar prices are characterized by their faster pace of growth compared with the CPI when prices are on an upward trend as well as their slower pace of decline when CPI growth starts to fall. Familiar prices also have a higher correlation with consumption compared with the CPI and can therefore exert a great influence on the consumption behavior of households.
- ◆ It is highly likely that the current decline of real familiar wages, which is deflated by familiar prices, will continue while energy prices continue to rise. In light of the future consumption tax hike, the rise of nominal wages is indispensable to drive strong growth of consumer spending.

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<sup>1</sup> “Familiar prices” refers to prices of items familiar to households.

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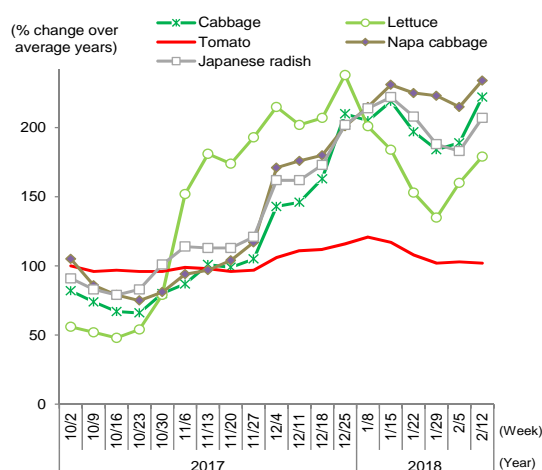
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# 1. Trends in fresh food and energy prices and households' "familiar prices"

## (1) Familiar prices are increasing due to price hikes of fresh food and energy

Bad weather since October last year has caused fresh vegetable prices to rise sharply by more than +200% compared with average years, and prices even in February continued to stay higher than in normal years (**Chart 1**). Furthermore, with the increase in crude oil prices, gasoline prices are also on a rising trend. Households are susceptible to the price trends of such familiar items. According to the *Bukka monita chosa (price monitor survey)* (in Japanese) (the November 2017 survey) compiled by the Consumer Affairs Agency, when households were asked, "with which product do you feel change in prices the most?", the share of gasoline/kerosene, fresh food, and food items other than fresh food came in significantly higher compared with other items (**Chart 2**).

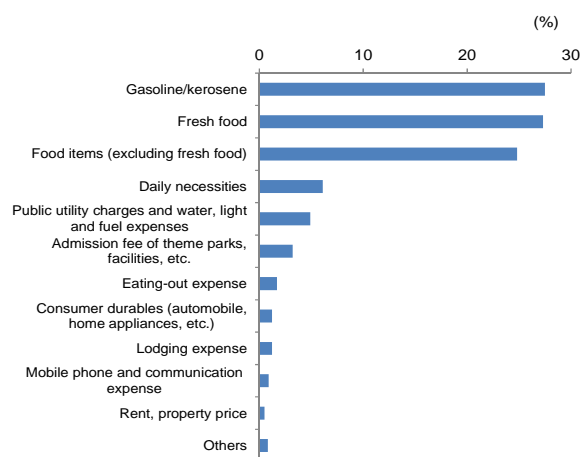
**Chart 1: Trend of fresh food prices**



Note: Change over average years mean a comparison with five-year average prices taken from the food price trend survey from 2012 to 2016.

Source: Made by MHRI based on the Ministry of Agriculture, Forestry and Fishery, *Shohikakaku doko chosa (yasai) (retail prices trend survey (vegetables))* (in Japanese)

**Chart 2: Share of items for which households feel changes in price**



Note: Based on the November 2017 survey.  
Source: Made by MHRI based on the Consumer Affairs Agency, *Bukka monita chosa (price monitor survey)* (in Japanese)

In fact, when looking at the *Opinion Survey on the General Public's Views and Behavior* by the Bank of Japan, household responses (median) to the question, "By what percent do you think prices have changed compared with one year ago?" showed a tendency to be more susceptible to price increases in fresh food and energy (**Chart 3**). In this report, we refer to the prices mentioned by consumers in the above survey as

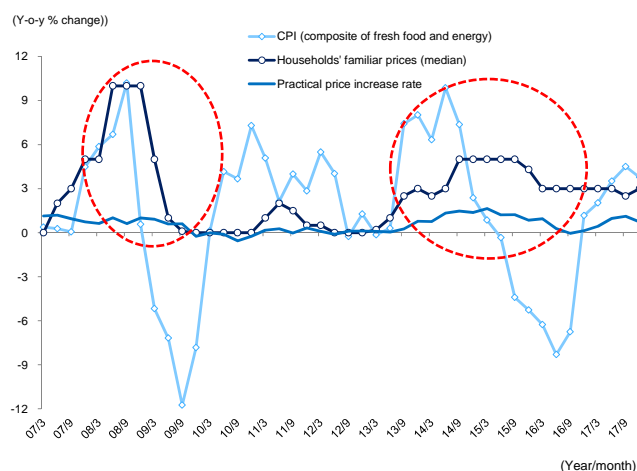
“familiar prices,” in the sense that their prices mean the prices of familiar items.

When energy prices soared in 2008, familiar prices rose significantly by +10% y-o-y. Familiar prices started increasing again in 2013 on the back of rising crude oil prices and the falling yen, and in 2014 they rose by around +5% y-o-y compared with the preceding year when the consumption tax was raised. Even today, familiar prices continue going up at around +3% y-o-y, reflecting the steep rise in energy and fresh food prices.

## (2) Familiar prices also react to practical price increases

Familiar prices also react to invisible “practical price increases” in addition to “visible” price increases of such items as fresh food and energy. In order to grasp the situation of practical price increases by replacing old products with new ones and adjusting product volumes, we referred to Ono (2017) in this report. More specifically, by using the SRI-Hitotsubashi Consumer Purchase Indices that capture households’ purchase amount and prices at supermarkets and convenience stores, among others, we regarded the difference in the growth rate of the SRI-Hitotsubashi Unit Value Price Index,<sup>2</sup> which reflects the replacement of old products with new products and the adjustment of product volumes, and the SRI-Hitotsubashi Consumer Purchase Price Index,<sup>3</sup> which reflects price changes only, as the “real rate of price increase.” If we take another look at **Chart 3**, it shows that households’ familiar prices have a positive correlation with the practical price increases

**Chart 3: Prices of fresh food and energy, practical price increase rate, and familiar prices**



Note: 1. The practical price increase rate is calculated by subtracting the growth rate of the SRI-Hitotsubashi Consumer Purchase Price Index from the growth rate of the SRI-Hitotsubashi Unit Value Price Index.

2. Households’ familiar prices are the median of answers to the survey question, “By what percent do you think prices have changed compared with one year ago?”

Source: Made by MHRI based on the Bank of Japan, *Opinion Survey on the General Public’s Views and Behavior*, the Ministry of Internal Affairs and Communications, *Consumer Price Index*, and the SRI-Hitotsubashi Consumer Purchase Indices.

<sup>2</sup> Unit price index refers to the index growth rate from the same week of the previous year; the index is calculated as the weighted average of volume unit price (product price divided by its volume) using the weight of volume × quantity. Since the volume unit price of new products and discarded products is reflected in the unit price index, we can capture the impact of product replacement and volume adjustment on price changes.

<sup>3</sup> Price index refers to the product price growth rate from the same week of the previous year. Since the price index is calculated based only on continued products, information on product replacement and volume adjustment is not reflected in changes in the index.

(correlation coefficient: about 0.6). We hold that familiar prices remained high around 2015, even after the effect of the consumption tax hike came to an end, because retailers raised product prices by adjusting the volume of products while maintaining marked prices (there was actually media coverage on how food makers at that time reviewed their products and reduced the size of beverage bottles while keeping prices the same). Even today, the rate of practical price increases is on the rise again, and we believe this trend is having an impact on households' familiar prices.

### **(3) Reasons why we focus on familiar prices: their movement is different from the consumer price index (CPI)**

We have noticed that the movement of familiar prices described in the previous section have several characteristics which differ from the consumer price index (CPI, all items, less imputed rent<sup>4</sup>), which is the most representative index of price trends. Firstly, familiar prices tend to grow at a stronger pace compared with the CPI when prices are on an upward track, as shown by the fact that it rose above +5% y-o-y when the consumption tax was raised (**Chart 4**). Furthermore, growth in familiar prices tends to remain unchanged even after CPI growth starts to slow down, and rarely falls into negative territory. For example, even though the CPI is recently hovering at around +1% y-o-y compared with the previous year, familiar prices remain relatively high at around +3% y-o-y. While households are susceptible to the rising price of familiar items (upside risk), once they experience the price increase, the strong impression makes them unresponsive to subsequent price declines. In this sense, we can say “familiar prices tend to rise easily but do not fall as readily.”

## **2. Households' consumption behavior is determined by “real familiar wages”**

Familiar prices indicate households' direct views on price trends and may have a significant impact on consumption sentiment. Next, we would like to study how familiar prices may affect consumer behavior based on the characteristics of familiar prices described in the previous section.

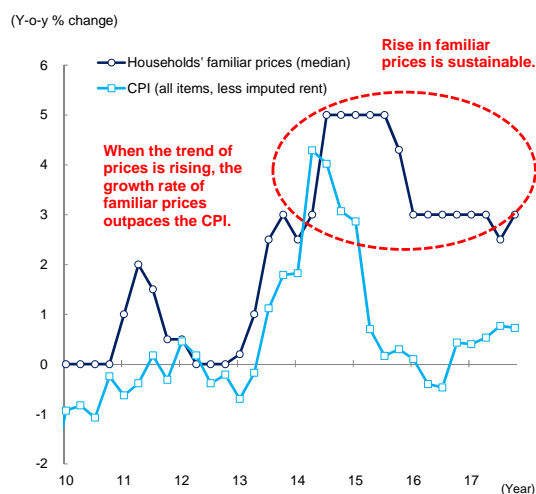
In general, households' consumption behavior is determined based on “real wages” (more specifically, “real disposable income” including the impact of tax and social insurance), which is derived by taking into consideration price trends in addition to nominal wages (nominal income) gained from labor. However, as shown in the previous section, “price trends” can carry different connotations as shown by the difference between the trends in familiar prices actually felt by households and the CPI. So we

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<sup>4</sup> It is used when calculating real wages in the *Monthly Labour Survey*.

compared the correlation coefficient (correlation of growth rate) of real household consumption with “real wages” calculated by converting nominal wages into real terms using the CPI (all items, less imputed rent) (same definition as real wage in the *Monthly Labour Survey*) with that of the “real familiar wages” made real using familiar prices. As a result, the value of the correlation coefficient was higher for “real familiar wages” than “real wages” (**Chart 5**). This implies that households make spending decisions more in reaction to familiar prices than to the CPI. Admittedly, few households grasp CPI trends like that of an economist, and it is only natural that they make purchase decisions by evaluating their “real wages (real familiar wages)” in view of familiar prices. The rate of change of real familiar wages has remained in negative territory since the first quarter of 2011 and currently stands around -2% y-o-y (**Chart 6**). This slump in the real familiar wage is considered to dampen consumer spending. In fact, the “saving propensity index”<sup>5</sup> created by Mizuho Research Institute (MHRI) has shown a sharp increase recently (**Chart 7**). It seems that the rise in familiar prices due to soaring fresh food and energy prices has led to stagnant movement of the real familiar wage, driving consumers to save rather than spend and causing real consumption growth to weaken.

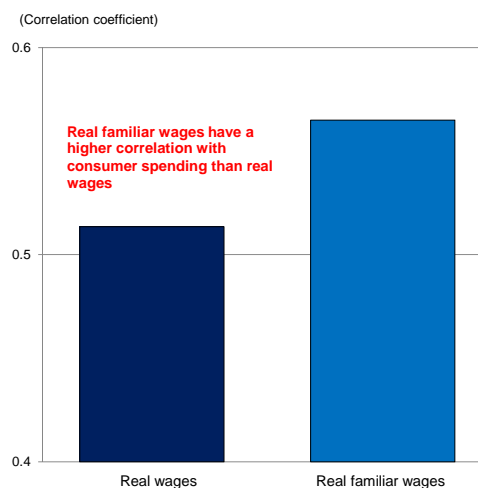
**Chart 4: Comparison of familiar prices with the CPI**



Note: Households' familiar prices are the median of answers to the survey question, “By what percent do you think prices have changed compared with one year ago?”

Source: Made by MHRI based on the Bank of Japan, *Opinion Survey on the General Public's Views and Behavior*, the Ministry of Internal Affairs and Communications, *Consumer Price Index*, among others.

**Chart 5: Real familiar wages and real consumption**



Note: The above was calculated based on data from the second quarter of 2006 through to the third quarter of 2017.

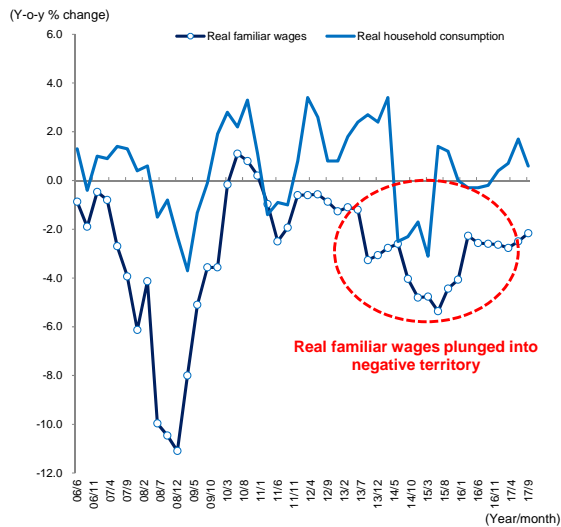
Source: Made by MHRI based on the Ministry of Internal Affairs and Communications, *Consumer Price Index* and the Ministry of Health, Labour and Welfare, *Monthly Labour Survey*, among others.

<sup>5</sup> An index derived by comparing 137 common items covered by the CPI and *Family Income and Expenditure Survey* and indexing the difference of the year-on-year growth rate of the CPI and average unit price using the weight of the CPI. For details refer to Arita (2016).

### 3. Future outlook

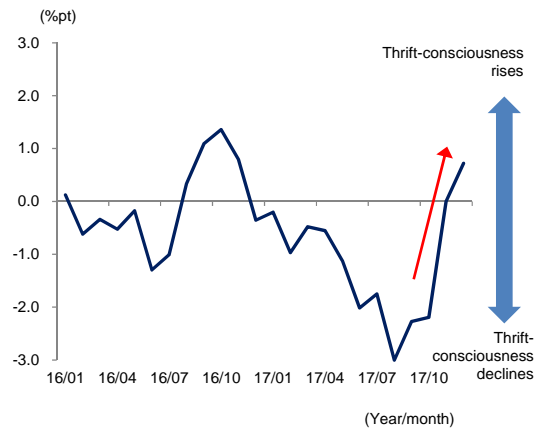
Let us move forward to our outlook based on the analysis in the previous sections. While the sharp rise of fresh food prices should stabilize in time since it stems from the temporary factor of bad weather conditions, energy prices are expected to continue rising in tandem with the rise of crude oil prices (**Chart 8**). If the price of gasoline rises, real familiar wages will decline and possibly push personal consumption down through the rise of thrift-consciousness. As mentioned earlier, considering the asymmetrical nature of households' familiar prices, once familiar prices rise it will take some time until they settle down. This means that downward pressures will weigh on real familiar wages for a certain period of time. If we take into account the current trends of real familiar wages (about -2% y-o-y), we need to see an increase in nominal wages sufficient to compensate for the sluggish rise of real familiar wages to stimulate strong growth in consumer spending.

**Chart 6: Real familiar wages and real consumption**



Source: Made by MHRI based on the Ministry of Internal Affairs and Communications, *Consumer Price Index* and the Ministry of Health, Labour and Welfare, *Monthly Labour Survey*, among others.

**Chart 7: Household thrift-consciousness (3-month backward moving average)**



Note: The "thrift-consciousness" index is derived by comparing 137 common items covered by the CPI and *Family Income and Expenditure Survey* and indexing the difference of the year-on-year growth rate of the CPI and average unit price using the weight of the CPI (2015 standard).

Source: Made by MHRI based on the Ministry of Internal Affairs and Communications, *Consumer Price Index* and *Family Income and Expenditure Survey*.

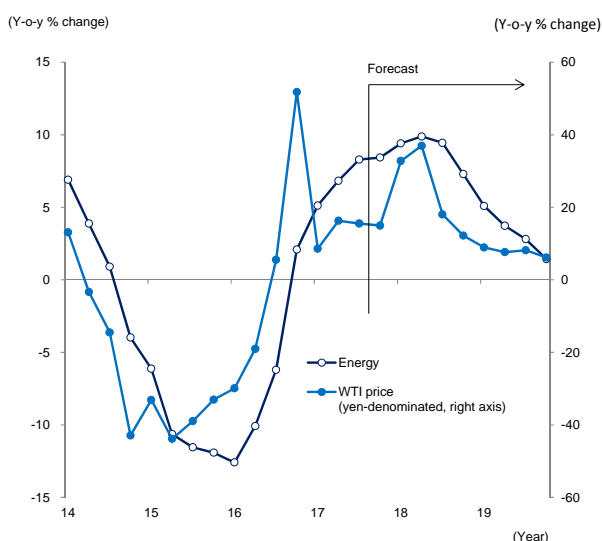
Furthermore, given the scheduled consumption tax hike in FY2019, the rise of familiar prices cannot be avoided. At the time of the consumption tax hike in 2014 (5%→8%), the rate of familiar prices increased by approximately 2.5% (+2.5% y-o-y to +5% y-o-y). In the consumption tax hike scheduled in October 2019 (8%→10%), the breadth of the tax hike will be smaller compared with 2014 and a reduced tax rate will be imposed on food and other items. This implies that the rise of familiar prices will be smaller than in 2014. Even so, an increase of around 1% is still possible. Even in the event the rise of energy prices slows down due to a pause in the rise of crude oil prices, if product prices are raised because of the consumption tax hike, familiar prices will follow suit and place further downward pressure on real familiar wages.

Japan's economic policy thus far, including the inflation target in monetary policy, has been determined mainly based on the CPI growth rate. In light of our analysis in this report, it would be necessary to watch the trend of households' familiar prices in addition to the conventional CPI. Policy decisions that ignore familiar prices may lead to the rise of households' thrift-consciousness and weigh down on consumer spending, thereby running the risk of failing to generate the expected policy effects.

Refer to the original Japanese report by clicking the URL below for the reference material

<https://www.mizuho-ri.co.jp/publication/research/pdf/insight/jp180308.pdf>

**Chart 8: Outlook on energy prices**



Note: Data from the Jan-Mar quarter of 2018 are estimates by MHRI.  
 Source: Made by MHRI based on the Ministry of Internal Affairs and Communications, *Consumer Price Index*, among others.