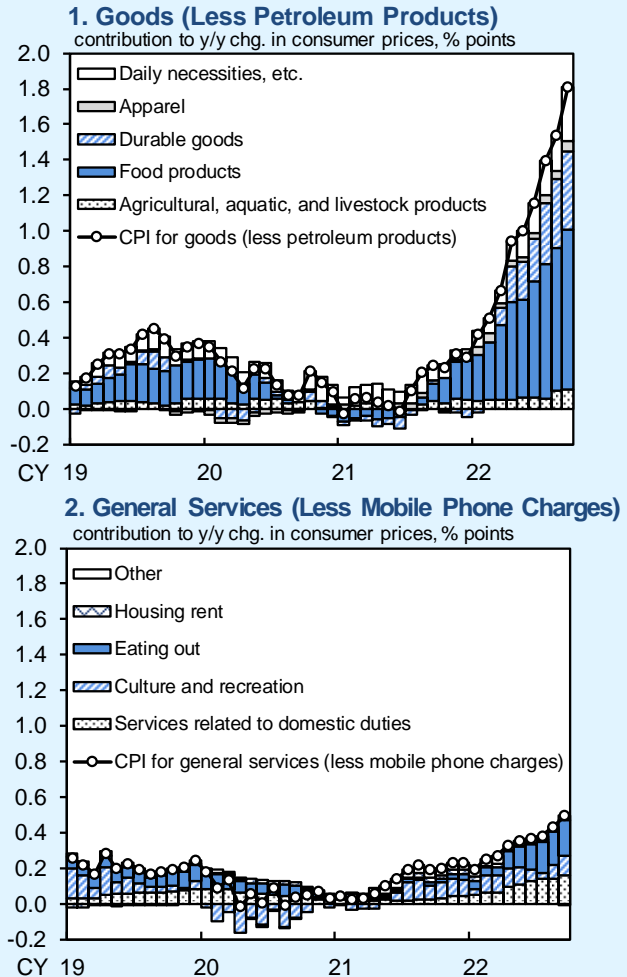


(Box 3) Developments in Firms' Price-Setting Stance

Recent developments in the CPI show that the year-on-year rates of increase have accelerated for both goods and services. In addition, the trimmed mean of the rate of change in the CPI and the diffusion index (DI) for the share of price-increasing items minus the share of price-decreasing items have risen to their highest levels since the first half of the 1990s. Such recent price rises are significantly attributable to increased upward pressure of costs led by a rise in import prices due to high commodity prices and the yen's depreciation. Examining the CPI (all items less fresh food and energy) in detail, for goods, prices of food products, as well as those of durable goods, for which the share of imported goods is high, have risen significantly. For services, the rates of change in prices have remained high for dining-out and housework-related services (e.g., services related to housing repairs and maintenance), which have a high share of material costs in their overall costs (Chart B3-1).

Firms' moves to reflect the rise in costs such as of raw materials in selling prices have intensified and become widespread recently. The price change distribution for the CPI items shows that, although its peak has continued to be around 0 percent, the thickness of its right tail has increased clearly, indicating an increase in the number of items for which prices have risen (Chart B3-2). The following examines such price-setting stance of firms in detail using microdata from the *Tankan* surveys.

Chart B3-1: Consumer Prices for Goods and Services

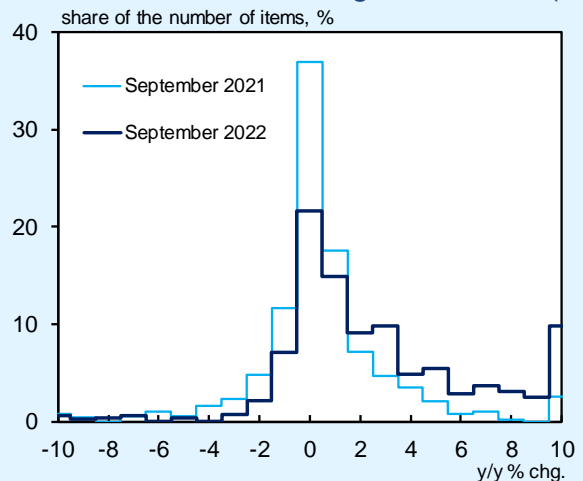


Source: Ministry of Internal Affairs and Communications.
 Notes: 1. Figures are the contribution to changes in the CPI (less fresh food and energy). Figures are staff estimates and exclude mobile phone charges and the effects of the consumption tax hike, policies concerning the provision of free education, and the "Go To Travel" campaign, which covers a portion of domestic travel expenses.
 2. Figures for services related to domestic duties include services related to housing repairs and maintenance.

First, the output prices DIs for consumption-related industries in the *Tankan* are classified into 37 categories based on their more detailed industry classification (e.g., supermarkets and convenience stores) and firm size and then reaggregated (Chart B3-3). The reaggregated DIs for the September survey were at or above 0 percentage point for all categories. This suggests that an increasing number of firms, regardless of industry and firm size, have raised prices recently, even more so than during the inflationary phase around 2008, when the DIs registered a net "fall" for quite a few categories. Next, the output prices DIs for firms that were cautious about changing their selling prices -- selected based on their answers to the *Tankan* surveys -- are aggregated (Chart B3-4). Developments in the aggregated DI show that it has risen clearly in the current phase, indicating that even such firms have begun to raise prices.

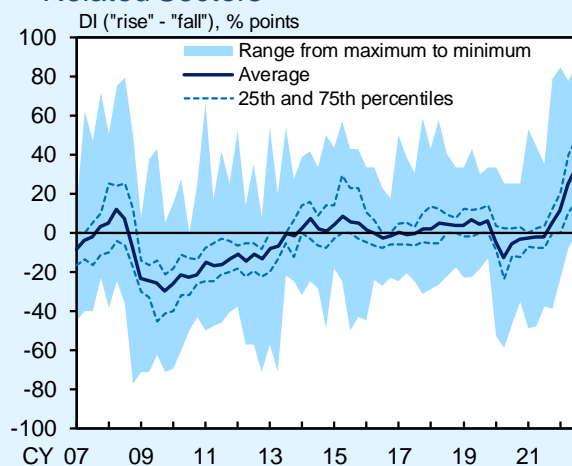
It seems that individual firms have taken into account their competitors' behavior when changing their price-setting stance. In this regard, each firm's behavior regarding the pass-through of cost increases given its competitors' price setting in the previous quarter is examined.²⁰ The results indicate that, when input prices rise, there seems to be a relationship in which the number of firms passing on cost increases goes up in a nonlinear fashion as more competitors raise their selling prices. Such a relationship has also been seen recently, and this suggests that the fact that many competitors have begun to raise prices has

Chart B3-2: Price Change Distribution (CPI)



Source: Ministry of Internal Affairs and Communications.
 Notes: 1. The CPI figures are staff estimates and exclude the effects of the "Go To Travel" campaign, which covers a portion of domestic travel expenses. Figures exclude fresh food and energy.
 2. The left-most bin includes items with a price decrease of more than 9.5 percent, while the right-most bin includes items with a price increase of 9.5 percent or more.

Chart B3-3: Output Prices in Consumption-Related Sectors



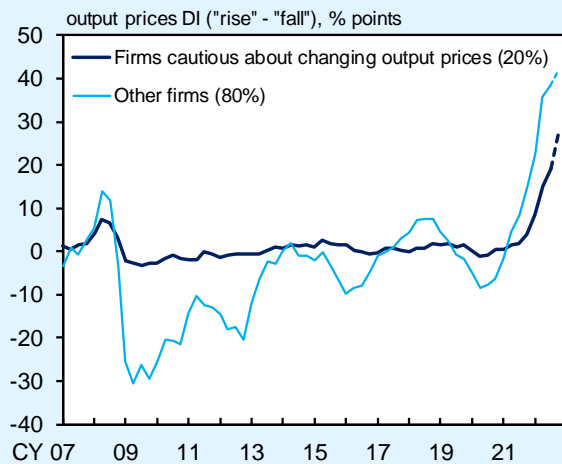
Source: Bank of Japan.
 Note: Based on the *Tankan*. In compiling these figures, consumption-related firms (firms in "retailing," "services for individuals," and "accommodations, eating & drinking services") were classified into 37 categories based on their detailed industry classification and size, and the output prices DIs for these 37 categories were then reaggregated.

²⁰ Firms' behavior regarding the pass-through of cost increases is represented by the vertical axis in Chart B3-5 while competitors' price setting is represented by the horizontal axis.

driven firms to lean more toward passing on higher input prices to selling prices (Chart B3-5).

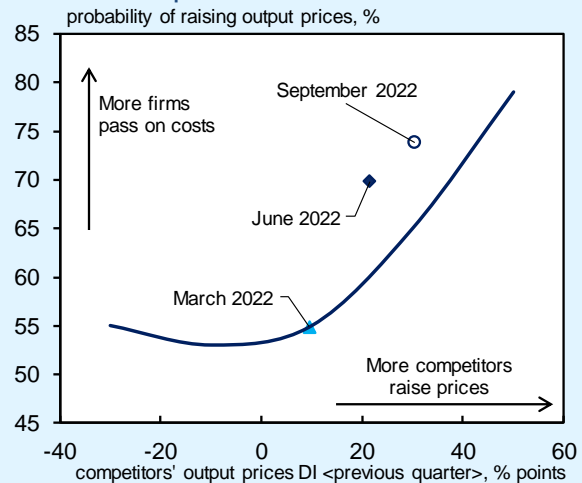
In sum, firms have leaned more toward passing on the rise in raw material costs to selling prices while taking competitors' price setting into consideration. As pointed out in the previous Outlook Report released in July, there seem to be three basic reasons behind such developments: (1) the recent upward pressure of costs has been greater than in the past; (2) Japan's economy is currently on its way to recovery from a significant downturn caused by COVID-19; and (3) supply and demand conditions for some individual goods have been tight, partly due to a surge in global demand and the impact of supply-chain disruptions.²¹

Chart B3-4: Change in Firms' Price-Setting Stance



Source: Bank of Japan.
 Note: Based on the *Tankan* (all industries and enterprises). Figures for "firms cautious about changing output prices" are for firms that for at least about 95 percent of the period from 1991 to 2019 replied that their output prices were "unchanged." The dots at the end of the lines are forecasts from the September 2022 survey.

Chart B3-5: Output Prices of Firms and Their Competitors



Source: Bank of Japan.
 Notes: 1. Based on the *Tankan*. Figures are for 10 sectors in the retailing industry from 1991 to 2022.
 2. The competitors' output prices DI denotes the output prices DI for firms' competitors defined as other firms in the same sector.
 3. The probability of raising output prices denotes the share of firms that raised their output prices in a certain quarter among those that saw an increase in their input prices in the same period. The curved line in the chart approximately represents the median of the probability for each level of the competitors' output prices DI.

²¹ For details, see Box 3 in the July 2022 Outlook Report.