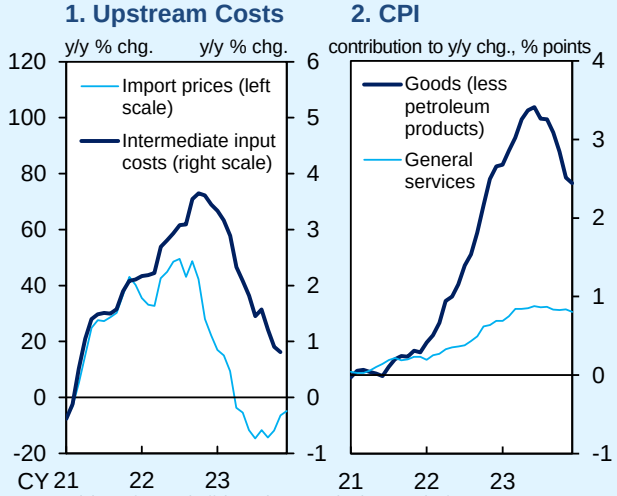
(Box 3) Recent Developments Surrounding the CPI: Upward Pressure of Costs Led by a Rise in Import Prices and Current Assessment of the Linkage between Wages and Prices

The year-on-year rate of increase in the CPI (all items less fresh food and energy) has decelerated recently (Chart 37). Looking at the environment surrounding the CPI, the year-on-year rate of change in import prices has remained negative as international commodity prices have been at lower levels than a while ago (Chart B3-1). The final demand-intermediate demand (FD-ID) price indexes indicate that waning of upward pressure of costs has spread steadily from the upstream to the downstream stages of supply chains in business-to-business (B to B) transactions (Chart 45). Reflecting these developments, the pace of increase in input costs (intermediate input costs) faced by firms that conduct business-to-consumer (B to C) transactions has further decelerated and the year-on-year rate of increase in goods prices, which has been susceptible to the impact of import prices, has been slowing.

Chart B3-1: Inflation Indicators



Sources: Ministry of Internal Affairs and Communications; Bank of Japan.
Notes: 1. Figures for import prices are on a yen basis. Intermediate input costs are calculated by multiplying the intermediate input ratio of each sector in the *2015 Input-Output Tables for Japan* by price data from the corporate goods price index or the services producer price index and then taking the weighted average using consumption expenditure shares as weights.
2. In the right-hand chart, figures show 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 travel subsidy programs.

As shown above, upward pressure of costs led by past rises in import prices has been decreasing gradually.[25] In this situation, whether the linkage between wages and prices -- in particular, firms' behavior of reflecting wage increases in selling prices -- would strengthen and an active wage- and price-setting behavior would spread among

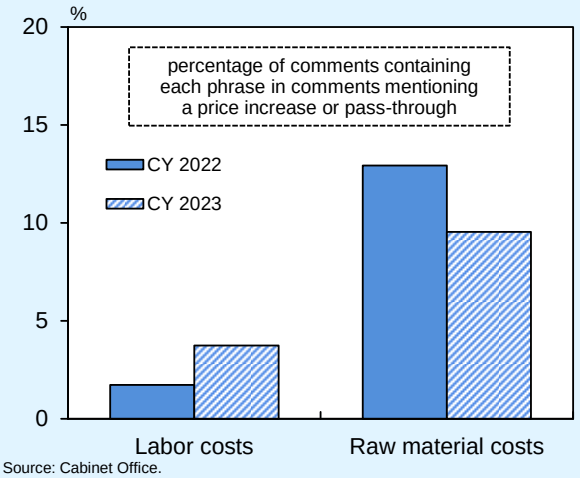
[25] International commodity prices have been stable on the whole, but developments differ across items and it is necessary to carefully monitor their impact on the CPI. For example, crude oil prices rose again in summer 2023; such rises could exert upward pressure on the CPI again with a time lag, and this warrants attention.

firms has become increasingly important when considering the outlook for price developments.[26] An assessment of the current situation of the linkage between wages and prices is described below.

First, while many firms have maintained the view that "it is now possible to pass fluctuations in raw material costs on to selling prices, but it is difficult to pass labor costs on to selling prices," moves to raise prices to obtain the source of wage increases have been spreading gradually, mainly among face-to-face services for which demand has recovered. On this point, firms' comments in the *Economy Watchers Survey* show that the number of firms that identified labor costs as one of the reasons for price increases has increased slightly (Chart B3-2).

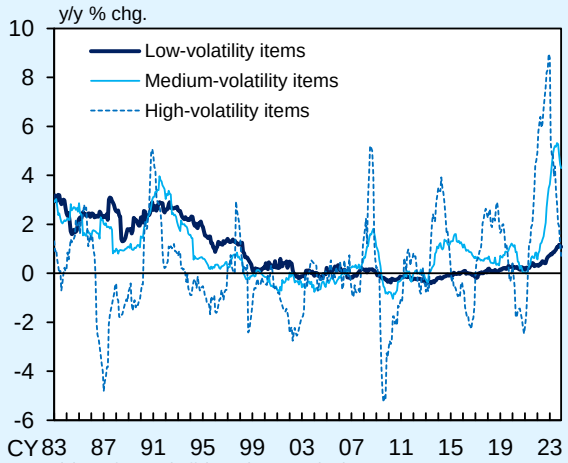
Next, a quantitative analysis using time-series data shows that moves to reflect wages in selling prices have been spreading, albeit moderately. In Chart B3-3, the CPI items are classified into three groups, according to the degree of price volatility. The chart shows that even the prices of "low-volatility items," which had shown little sign of movements, have been rising moderately to date. Moreover, a look at three indicators; namely, (1) "low-volatility items" of this analysis, (2) the contribution of wage factors to CPI changes, estimated by using the relationship of price developments by the degree of price volatility, import prices, the output gap, and wages, and (3) the trend in services prices -- where labor costs

Chart B3-2: Text Analysis of the *Economy Watchers Survey*



Source: Cabinet Office.
Notes: 1. Figures are calculated using comments regarding current economic conditions.
2. Figures for CY 2022 and CY 2023 are those for July-December 2022 and July-December 2023, respectively.
3. Figures for labor costs are for comments that contain the phrases "*jinken-hi*" or "*rōmu-hi*" in Japanese, while those for raw material costs are for comments that contain "*genzairyō*" or "*genryō*."

Chart B3-3: CPI Items by Degree of Price Volatility



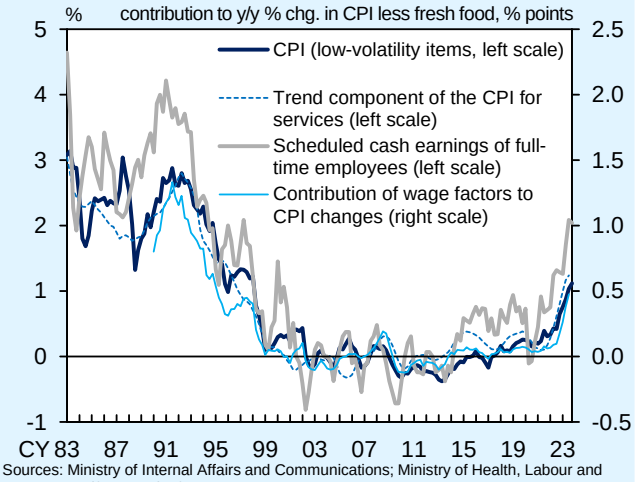
Source: Ministry of Internal Affairs and Communications.
Notes: 1. The CPI items are classified into three groups based on their volatility using long-term time-series data for the CPI (less fresh food).
2. The CPI figures are staff estimates and exclude mobile phone charges and the effects of the consumption tax hikes, travel subsidy programs, policies concerning the provision of free education, etc.

[26] See also Box 3 of the 2023 October Outlook Report for the linkage between wages and prices.

account for a high share of selling prices -- shows that all of them have been increasing moderately to date after remaining at around 0 percent for a long time (Chart B3-4).[27]

As explained, positive developments have been spreading gradually in firms' wage- and price-setting behavior. It is important to determine whether the linkage between wages and prices would strengthen by continuously conducting qualitative analyses, such as interviews with firms, carefully, as well as by carrying out quantitative analyses from various standpoints.

Chart B3-4: CPI and Scheduled Cash Earnings



Sources: Ministry of Internal Affairs and Communications; Ministry of Health, Labour and Welfare; Bank of Japan.

Notes: 1. Figures for low-volatility CPI items and scheduled cash earnings of full-time employees are year-on-year percentage changes, while those for the trend component of the CPI for services are the 6-quarter backward moving averages of annualized quarter-on-quarter percentage changes.
2. Figures for scheduled cash earnings of full-time employees before 1994 are those for regular employees. Moreover, figures from 2016/Q1 onward are based on continuing observations following the sample revisions. The figure for 2023/Q4 is the October-November average.
3. Figures for the contribution of wage factors to CPI changes are based on the relationship between the CPI and wages, estimated using a 4-variable VAR model comprising import prices (yen basis), the output gap, wages (scheduled cash earnings of full-time employees), and price indices for low-, medium-, and high-volatility items in the CPI. The estimates are obtained using 20-year rolling regressions for low-, medium-, and high-volatility CPI items.
4. Figures for the trend component of the CPI for services are the composite of the sector-specific price trend for services and the common trend in services prices and wages. The figures are estimated using category-level services prices and industry-level scheduled cash earnings. The approach is based on Kiley (2023) and Stock and Watson (2016).

[27] The approach is based on the following prior studies:

Kiley, M. T., "The Role of Wages in Trend Inflation: Back to the 1980s?" Finance and Economics Discussion Series (Washington: Board of Governors of the Federal Reserve System), no. 2023-022 (2023).

Stock, J. H. and M. W. Watson, "Core Inflation and Trend Inflation," *The Review of Economics and Statistics* 98, no. 4 (2016): 770-784.