Analysis on Pass-through of Import Price Growth by Industry: Focusing on import price of raw materials

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Import prices have risen so fast this year that they have been passed on to the prices of domestically produced goods and services, adding further to domestic inflation pressure. This pass-through of import price growth goes as follows: 「Import price growth → Production cost increase → Output price increase」. This paper analyzes the process by looking at how import price fluctuations are passed through production into domestic prices by industry and by regime.

The result of the analysis shows that the pass-through of import price growth to output prices has the following characteristics. First, this pass-through is attributable mainly to the shock on import prices of raw materials rather than that of intermediate goods. More specifically, the price shock on agricultural and fishery products such as grains makes a greater and longer-lasting impact than that on mineral products such as crude oil does. Next, this paper also confirmed that, in the short term, this pass-through is asymmetric and non-linear, where the degree of pass-through is higher when import prices rise rather than fall and when their growth is large rather than small. Lastly, the degree of price pass-through differs by industry depending on the proportion of imported raw material input, the price elasticity of demand, the degree of market concentration, and the possibility of prices reflecting government policies.

Looking at the characteristics of each industry in detail, in the manufacturing industry, petroleum refining, chemicals, and steel, which require a high proportion of imported raw material input, showed a greater pass-through. However, IT manufacturing and transport equipment manufacturing have low pass-through as they have a lower proportion of imported raw material input and their demand is relatively sensitive to prices. Next, in the service industry, price pass-through is not that high in general. However, transportation sectors such as aviation and shipping show a relatively high degree of price pass-through as they have higher share of raw material input and market concentration. Price pass-through is large in the construction industry where output prices are highly influenced by production cost changes. Concerning electricity and gas, while they have a quite large share of raw material input such as coal and natural gas, the price pass-through is partially limited by government policy.

The implications drawn from the above analysis are as follows. First, considering the asymmetric and non-linear characteristics of import price pass-through, it is noteworthy that even when there is a repeated fluctuation in international commodity prices, upward pressure on inflation can still be strong. In addition, when implementing price stabilization policies and economic forecasts, attention must be paid to the fact that the degree of import price might differ by industry.

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