The Influence of Soaring Oil Prices on Japanese Industrial Prices

Background

Oil prices have been escalating from the beginning of 2002. Soaring oil prices had serious impact on the Japanese economy through drastic inflation in the past two oil crises. The tempo of price increase is weak at present. Analysis of the influence of current high oil prices on industrial prices is urgently required

Objectives

The objective of this study is to make clear the influence of soaring oil prices on the Japanese producer price by sector in past two oil crises and the current situation by using the decomposition techniques of input-output analysis, and to consider the possibility that inflation will occur under the current high oil prices, based on the comparative analysis.

Principal Results

1. Decomposition analysis for three periods of soaring oil prices (Table 1, Fig.1)

(1) In the first oil crisis, the domestic producer price rose 37.3% on average (for three years; the same hereinafter). The major factor of this inflation was the inflation in wages, and the contribution of the wages hike was 25.2%, overwhelmingly large. The influence of increase in wages far exceeded the influence of the rise in oil, coal, and natural gas import prices. Almost 70% of the increase in the average price was explained by the rise of wages.

(2) In the second oil crisis, the domestic producer price rose 19.1% on average. The contribution of the increase in wages was down to 8.0%, which explained 40% of the rise in the average price. The influence of the increase in wages was moderate.

(3) In the current period of soaring oil prices since 2002, the inflation of the average price remains 1.9%. The influence of import prices of oil, coal, and natural gas is small, and moreover, wages suppress the price increases. Thus, the movements of wages have big influence on price increase in periods of soaring oil prices.

2. Comparative analysis between two periods (Table 2)

(1) Producer price rate of increase in the second oil crisis is lower than in the first oil crisis by 18.2%. By the factor, the influence of the lower wage growth rate is 21.3%, overwhelmingly great, and the influence of lower import prices of oil, coal, and natural gas is also as great as 11.4%.

(2) Producer price rate of increase in the current soaring period is lower than in the second oil crisis by 17.2%. All factors suppress the producer price rise. In particular, the price suppression effects of wage and industrial structure changes are large. After the second oil crisis, energy saving has progressed, and the share of import raw-material cost has fallen by the drastic price decrease of overseas products centering on crude oil around 1986. These have shifted the industrial structure as the price suppression factor.

(3) In the current soaring period, wages are in the stillness keynote, and the effect of progress of energy saving is expected, and therefore the possibility that inflation will occur under the present crude oil hike of 50-70 dollars/barrel is low. Progress of energy- and oil-saving is the important policy issue which should be promoted in the future in order to stop the import prices inflation by change of industrial structure.

Future Developments

We will analyze the influence of oil prices on the macro-economy and industrial structure by the revision of macro-economy and input-output models.

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Reference

T. Hattori, et al., 2006, “Influence of Soaring Oil Prices on the Japanese Industrial Prices -Comparative Analysis of Soaring Oil Prices Period since 2002 and Oil Crisis Period -” CRIEPI Report Y05013 (in Japanese)

Table 1 Factor analysis of changes in producer price

	Changes in domestic producer price (theoretical value)	by Factor			
		Changes by wages	Changes by import prices		
				Changes by import prices of oil,coal and natural gas	Changes by import prices of other gooods
First oil crisis period (1973 First half~ 1976 First half)	37.3%	25.2%	12.1%	9.0%	3.1%
Second oil crisis period (1978 First half~ 1981First half)	19.1%	8.0%	11.1%	9.2%	1.9%
Current soaring oil prices period) (2002 First half~ 2005 First half)	1.9%	-0.2%	2.1%	1.5%	0.5%

In a period of soaring oil prices, the movements of not only energy import prices but wages have big influence on the domestic prices increase.

Table 2 Comparative analysis between two periods

	Difference of producer price rate of increase between two periods (theoretical value)	by Factor					
		Influence of difference of wages rate of change	Influence of difference of rate of change of oil, coal, and natural gas import-prices	Influence of difference of rate of change of other import prices	Influence of changes in industrial structure		
						Influence of changes in energy input coefficients	Influence of changes in other input coefficients etc.
Difference between the first and the second oil crises	-18.2%	-21.3%	-11.4%	-0.3%	14.8%	2.6%	12.2%
Difference between the current soaring oil period and the second oil crisis	-17.2%	-8.6%	-2.7%	-0.3%	-5.6%	-2.2%	-3.4%

Producer price rate of increase in current soaring oil period is lower than in the second oil crisis by 17.2%. All factors suppress the producer price rise. Industrial structure change also causes price suppression by progress of energy-saving.

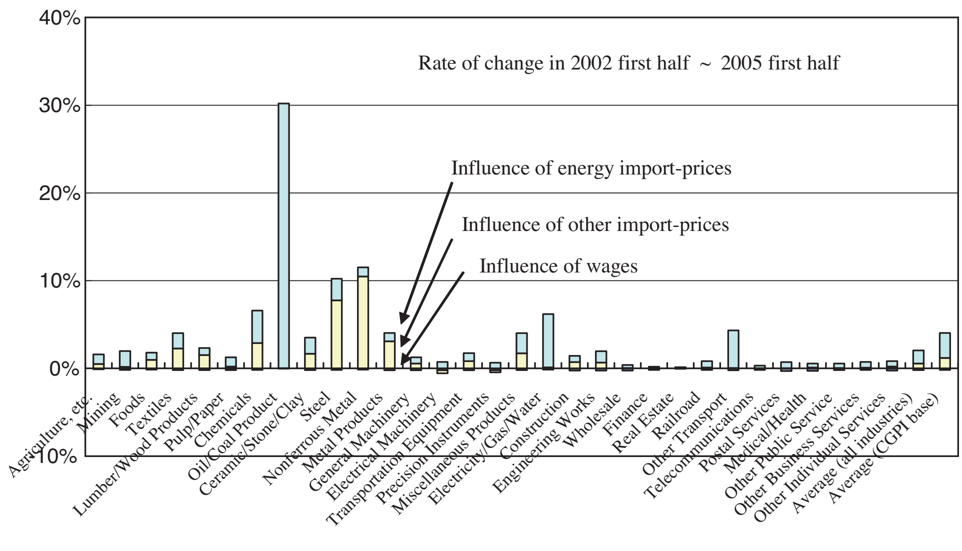

Fig.1 Producer price rate of change (Current soaring oil prices period, Theoretical value)

Wages are basically static in the current soaring period, and the energy-saving effect is expected, therefore the possibility that inflation will occur is low.