

New Indicators Emerge for Understanding Transmission of Price Changes



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As the article in this series in the May/June 2022 issue of *Japan SPOTLIGHT* indicated, consumer prices are currently continuing to rise in Japan. In April 2022, when the downward pressure from mobile phone charges disappeared, the year-on-year rise in consumer prices (overall) was 2.5%, rising to the 2% level, and continued to rise at the high end in May (2.5%) and June (2.4%). The main cause of the rise in consumer prices is the rise in energy prices and food prices, and on the back of this is the sharp rise in overseas resource prices and the rapid depreciation of the yen against the US dollar. New indicators for understanding the route and the extent of the impact from such rises or falls in prices began to be released by the Bank of Japan from June 28, 2022. These are the final demand-intermediate demand price indexes (FD-ID price indexes).

Originally, the Bank of Japan created and released the corporate goods price index (CGPI) which measures movements in goods, and the services producer price index (SPPI) which measures movements in services. But in order to understand transmission of price changes, it is important to (i) integrate both goods and services, and (ii) enable an understanding of them at various stages of demand such as upstream and downstream.

Thus, upon revision of the standard year for CGPI to 2020, the BOJ began to calculate the FD-ID price indexes. In this article, these FD-ID price indexes are explained, and the current price rise pressure on the Japanese economy is observed.

Indexes Created for Five Different Stages of Demand

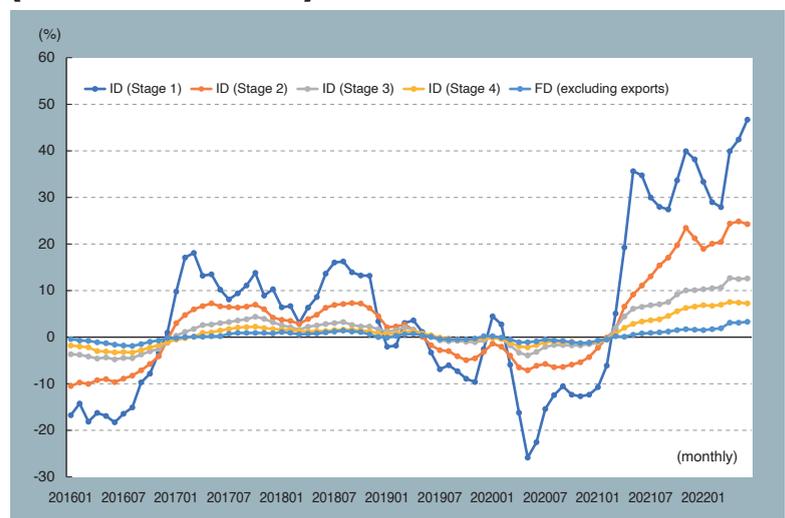
The creation of FD-ID price indexes in Japan draws on the methodology of the US Bureau of Labor Statistics which had already created and published such indexes. First, various stages of demand are divided into final demand (FD), used for private consumption and capital investment, and intermediate demand (ID), for raw materials and parts for input in production. On top of that, depending on how much the produced goods and

services are in demand at the final demand stage, production is categorized into four stages, and an index was created to capture price movements in goods and services which are inputted at various stages, from the most upstream Stage 1 to the most downstream Stage 4. This allows capturing how price rises and price falls are impacting the flow of production from upstream to downstream, and finally to final demand.

Looking at examples of goods and services for each stage, Stage 1 includes raw materials such as crude oil, naphtha, and iron ore, and Stage 2 includes polyethylene, light oil and workers dispatch services. Stage 3 includes plastic products and steel materials, advertising which is a service used in a relatively wide range of industry types, and road cargo transportation. Stage 4 includes automobile parts, integrated circuits, air transport and wholesale of food and beverages. Final demand includes final demand goods such as soft drinks, cars, machine tools and personal computers, and also includes hotel services, a high percentage of which target individuals.

CHART 1

Trend of rise in FD-ID price indexes (all commodities)



Source: "Final Demand-Intermediate Demand price indexes", BOJ

It should be added that FD-ID price indexes in the US were only created for goods and services produced domestically (domestic products), but the Japanese FD-ID price indexes also target imported products. The intermediate demand index includes domestic products and imported products, and the final demand index also includes exported products in addition to domestic products and imported products.

Price Pass-Through Slowly Progressing

Chart 1 shows the trend of year-on-year rises in FD-ID price indexes which collate goods and services. The year-on-year rise of ID (Stage 1), which shows prices of goods and services input to the most upstream production, turned positive in March 2021 and rose to 46.7% in June, confirming that the rise in international commodity markets such as crude oil is reflected. Along with that, the year-on-year rise of ID (Stage 2), ID (Stage 3), ID (Stage 4) and final demand (excluding exports) also went up, but the speed becomes slower as the production stage gets closer to downstream and final demand, and the rate of rise is low. Looking at the factor analysis for each rate of rise, it can be seen that the rate is affected by energy prices the closer the stage is to upstream, and as it gets closer to downstream and final demand, the more it is largely affected by services.

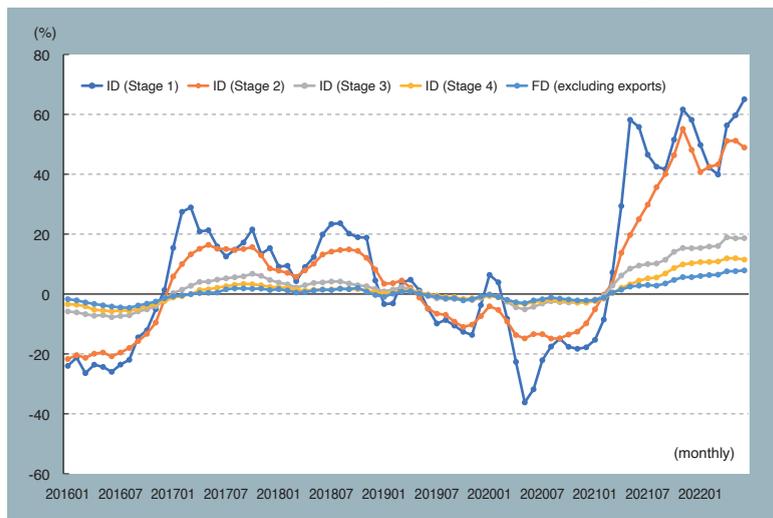
Chart 2 illustrates the trend of the year-on-year rise in FD-ID price indexes for goods. The rise in ID (Stage 1) peaked most recently in June 2022. On the other hand, the rise in ID (Stage 3), ID (Stage 4) and final demand (excluding exports) is continuing to gradually expand, and price pass-through is in progress.

Looking at the trend of the year-on-year rise in FD-ID price indexes for services (Chart 3), while the rise is growing for ID (Stage 1) to ID (Stage 4) on the back of rises in prices for transport services, the rise for final demand (excluding exports) is conversely negative. The main reason for it being negative is the presence of the impact of discounts in mobile phone communication charges after April 2021, and from April 2022, after one year, the rise has gone back to almost zero. However, it has not turned positive. It can be confirmed that price pass-through is not progressing here.

While consumer prices in the West have risen to the 8% level, they remain at the 2% level in Japan, and one reason is that the prices of services are struggling to rise. Whether service prices will also rise at the final demand stage when looking at the FD-ID price indexes will reconfirm that this is the key when looking at future price movements in Japan.

CHART 2

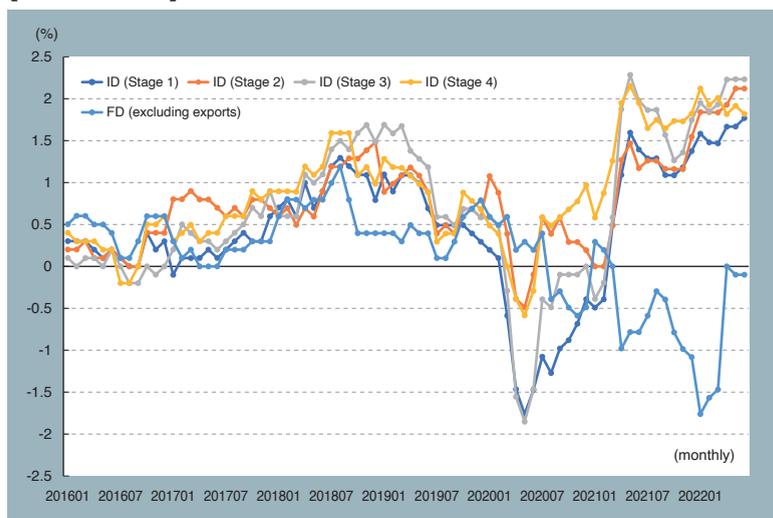
Trend of rise in FD-ID price indexes (goods)



Source: "Final Demand-Intermediate Demand price indexes", BOJ

CHART 3

Trend of rise in FD-ID price indexes (services)



Source: "Final Demand-Intermediate Demand price indexes", BOJ

NOTE: This article was based on available information as of July 28, 2022.

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Calendar year, Quarter and Month	Real GDP		Nominal GDP		IIP rate of increase over previous year/term (month) (%)	CPI (All terms, less fresh food) rate of increase over previous year/the same term (month) of the previous year (%)
	Amount (trillion yen)	Rate of increase over previous year/term (%)	Amount (trillion yen)	Rate of increase over previous year/term (%)		
2014	529.8	0.3	518.8	2.0	2.0	2.6
2015	538.1	1.6	538.0	3.7	-1.2	0.5
2016	542.1	0.8	544.4	1.2	0.0	-0.3
2017	551.2	1.7	553.1	1.6	3.1	0.5
2018	554.8	0.6	556.6	0.6	1.1	0.9
2019	552.8	-0.4	558.2	0.3	-3.0	0.6
2020	527.3	-4.6	537.2	-3.7	-10.4	-0.2
2021	536.0	1.7	541.4	0.8	5.6	-0.2
2021/3rd Qtr.	533.9	-0.5	539.3	-0.5	-1.9	-0.0
4th Qtr.	539.1	1.0	541.9	0.5	0.2	0.4
2022/1st Qtr.	539.2	0.0	543.9	0.4	0.8	0.6
2nd Qtr.	542.1	0.5	545.4	0.3	-2.7	2.1
2021/Nov.	—	—	—	—	5.0	0.5
Dec.	—	—	—	—	0.2	0.5
2022/Jan.	—	—	—	—	-2.4	0.2
Feb.	—	—	—	—	2.0	0.6
March	—	—	—	—	0.3	0.8
April	—	—	—	—	-1.5	2.1
May	—	—	—	—	-7.5	2.1
June	—	—	—	—	9.2	2.2
Sources	"SNA (National Accounts of Japan)", Cabinet Office				"Indices of Industrial Production", Ministry of Economy, Trade and Industry	"Consumer Price Index", Statistics Bureau, Ministry of Internal Affairs and Communications

Calendar year, Quarter and Month	Foreign Trade Statistics									
	Exports amount (trillion yen)	Exports rate of increase over previous year/ the same term (month) of the previous year (%)	Imports amount (trillion yen)	Imports rate of increase over previous year/ the same term (month) of the previous year (%)	Exports amount to US (trillion yen)	Exports to US rate of increase over previous year/ the same term (month) of the previous year (%)	Imports amount from US (trillion yen)	Imports from US rate of increase over previous year/ the same term (month) of the previous year (%)	Exports amount to EU (trillion yen)	Exports to EU rate of increase over previous year/ the same term (month) of the previous year (%)
2014	73.1	4.8	85.9	5.7	13.6	5.6	7.5	10.7	6.4	8.2
2015	75.6	3.4	78.4	-8.7	15.2	11.5	8.1	6.9	6.7	4.4
2016	70.0	-7.4	66.0	-15.8	14.1	-7.1	7.3	-9.2	6.5	-2.8
2017	78.3	11.8	75.4	14.1	15.1	6.9	8.1	10.5	7.1	9.5
2018	81.5	4.1	82.7	9.7	15.5	2.4	9.0	11.4	7.7	7.8
2019	76.9	-5.6	78.6	-5.0	15.3	-1.4	8.6	-4.2	7.4	-3.0
2020	68.4	-11.1	68.0	-13.5	12.6	-17.3	7.5	-13.7	6.3	-15.1
2021	83.1	21.5	84.8	24.6	14.8	17.6	8.9	19.4	7.7	21.4
2021/3rd Qtr.	20.8	24.9	21.7	36.9	3.7	14.5	2.2	31.1	1.9	28.0
4th Qtr.	22.4	15.7	24.1	37.4	4.1	10.6	2.4	33.7	2.0	12.6
2022/1st Qtr.	22.0	14.5	25.3	34.7	3.9	17.6	2.6	29.1	2.1	14.0
2nd Qtr.	23.9	15.9	28.6	40.9	4.3	15.7	2.7	21.7	2.3	17.4
2021/Nov.	7.4	20.5	8.3	43.8	1.3	10.0	0.9	43.1	0.7	16.4
Dec.	7.9	17.5	8.5	41.2	1.5	22.1	0.8	39.7	0.7	9.7
2022/Jan.	6.3	9.6	8.5	38.8	1.1	11.5	0.8	33.1	0.6	16.1
Feb.	7.2	19.1	7.9	34.2	1.3	16.0	0.9	39.0	0.6	8.8
March	8.5	14.7	8.9	31.4	1.5	23.8	0.9	18.5	0.8	16.8
April	8.1	12.5	8.9	28.4	1.5	17.5	0.9	15.4	0.8	19.2
May	7.3	15.8	9.6	49.0	1.3	13.6	0.9	24.3	0.7	10.5
June	8.6	19.3	10.0	46.1	1.6	15.7	1.0	25.2	0.8	22.2
Sources	"Trade Statistics of Japan", Ministry of Finance									

Calendar year, Quarter and Month	Cash salary amount rate of increase over previous year/the same term (month) of the previous year (%)	Active job openings-to-applicants ratio (time(s))	Unemployment rate (%)	M2 rate of increase over previous year/ the same term (month) of the previous year (%)	Balance of payments		Yen/\$ rate (averaged during the term)
					Trade balance (trillion yen)	Current balance (trillion yen)	
2014	0.5	1.09	3.6	3.4	-10.5	3.9	105.8
2015	0.1	1.20	3.4	3.6	-0.9	16.5	121.0
2016	0.6	1.36	3.1	3.4	5.5	21.4	108.8
2017	0.4	1.50	2.8	4.0	4.9	22.8	112.2
2018	1.4	1.61	2.4	2.9	1.1	19.5	110.4
2019	-0.4	1.60	2.4	2.4	0.2	19.3	109.0
2020	-1.2	1.18	2.8	6.5	2.8	15.7	106.8
2021	0.3	1.13	2.8	6.4	1.7	15.5	109.8
2021/3rd Qtr.	0.5	1.15	2.8	4.7	-0.0	4.2	110.1
4th Qtr.	0.0	1.17	2.7	4.0	-0.6	1.7	113.7
2022/1st Qtr.	1.5	1.21	2.7	3.5	-1.9	3.0	116.2
2nd Qtr.	1.6	1.25	2.6	3.3	-3.8	0.5	129.6
2021/Nov.	0.8	1.17	2.8	4.0	-0.4	0.9	114.0
Dec.	-0.4	1.17	2.7	3.7	-0.3	-0.3	113.9
2022/Jan.	1.1	1.20	2.8	3.6	-1.6	-1.2	114.8
Feb.	1.2	1.21	2.7	3.6	-0.2	1.6	115.2
March	2.0	1.22	2.6	3.5	-0.1	2.6	118.5
April	1.3	1.23	2.5	3.4	-0.7	0.5	126.1
May	1.0	1.24	2.6	3.1	-2.0	0.1	128.7
June	2.2	1.27	2.6	3.3	-1.1	-0.1	133.9
Sources	"Monthly Labour Survey", Ministry of Health, Labour and Welfare	"Employment Referrals for General Workers", Ministry of Health, Labour and Welfare	"Labour Force Survey", Statistics Bureau, Ministry of Internal Affairs and Communications	"Money Stock", Bank of Japan	"Balance of Payments", Ministry of Finance		Bank of Japan

Calendar year, Quarter and Month	Foreign Trade Statistics									
	Imports amount from EU (trillion yen)	Imports from EU rate of increase over previous year/ the same term (month) of the previous year (%)	Exports amount to Asia (excluding China) (trillion yen)	Exports to Asia (excluding China) rate of increase over previous year/ the same term (month) of the previous year (%)	Imports amount from Asia (excluding China) (trillion yen)	Imports from Asia (excluding China) rate of increase over previous year/ the same term (month) of the previous year (%)	Exports amount to China (trillion yen)	Exports to China rate of increase over previous year/ the same term (month) of the previous year (%)	Imports amount from China (trillion yen)	Imports from China rate of increase over previous year/ the same term (month) of the previous year (%)
2014	7.5	6.9	26.1	3.5	19.4	6.2	13.4	6.0	19.2	8.6
2015	7.8	4.6	27.1	3.7	18.9	-2.6	13.2	-1.2	19.4	1.3
2016	7.4	-5.0	24.7	-8.7	16.2	-14.5	12.4	-6.5	17.0	-12.4
2017	8.0	7.0	28.0	13.3	18.6	14.8	14.9	20.5	18.5	8.5
2018	8.8	10.6	28.8	2.9	20.0	7.8	15.9	6.8	19.2	4.0
2019	8.8	0.3	26.6	-7.6	19.0	-5.3	14.7	-7.6	18.5	-3.9
2020	7.8	-12.1	24.1	-9.4	17.2	-9.4	15.1	2.7	17.5	-5.1
2021	9.4	21.4	30.2	25.0	20.7	20.6	18.0	19.2	20.4	16.4
2021/3rd Qtr.	2.4	29.1	7.7	35.1	5.2	30.6	4.5	13.9	5.0	19.8
4th Qtr.	2.5	24.5	8.2	22.9	5.7	28.8	4.9	12.0	5.6	16.5
2022/1st Qtr.	2.6	24.5	8.2	18.8	6.2	29.1	4.3	7.0	5.5	16.6
2nd Qtr.	2.9	21.1	9.2	24.7	6.9	39.2	4.6	0.5	5.8	17.3
2021/Nov.	0.9	39.4	2.7	30.4	1.9	32.8	1.6	16.0	2.0	17.3
Dec.	0.8	16.3	2.8	20.5	2.0	35.3	1.7	10.8	1.9	20.5
2022/Jan.	0.9	26.2	2.4	13.0	2.1	35.0	1.2	-5.4	2.1	23.4
Feb.	0.8	32.4	2.7	24.8	1.9	27.3	1.5	25.8	1.5	5.9
March	0.9	16.8	3.1	18.4	2.2	25.6	1.7	2.9	1.9	19.1
April	1.0	26.0	3.1	20.3	2.2	27.8	1.5	-5.9	1.7	-5.5
May	1.0	19.0	2.9	28.6	2.3	52.7	1.4	-0.2	2.0	25.8
June	0.9	18.4	3.2	25.9	2.3	38.7	1.7	7.4	2.2	33.3
Sources	"Trade Statistics of Japan", Ministry of Finance									