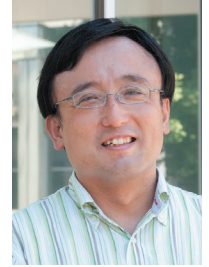


Inflation Rate Turns Negative on Reference Year Revision



Author Nobuo Iizuka

By Nobuo Iizuka

Downward Revision by Maximum 0.6 Points

On Aug. 6, revised values for the Consumer Price Index (CPI) with the revision of the reference year were released, and the year-on-year rate of rise (the so-called inflation rate) since the beginning of 2021 was revised downward. What drew attention was that the most recent inflation rate which was thought to have turned positive became negative.

As indicated in the first article of this series (September/October 2016 issue, https://www.jef.or.jp/journal/pdf/209th_Economic_Indicators.pdf), the consumer price is the comprehensive price of goods and services that households purchase. What percentage of entire consumption is spent on each good and service (consumption weight), such as food or rent, is surveyed using statistics such as the “Family Income and Expenditure Survey”, and assuming that the

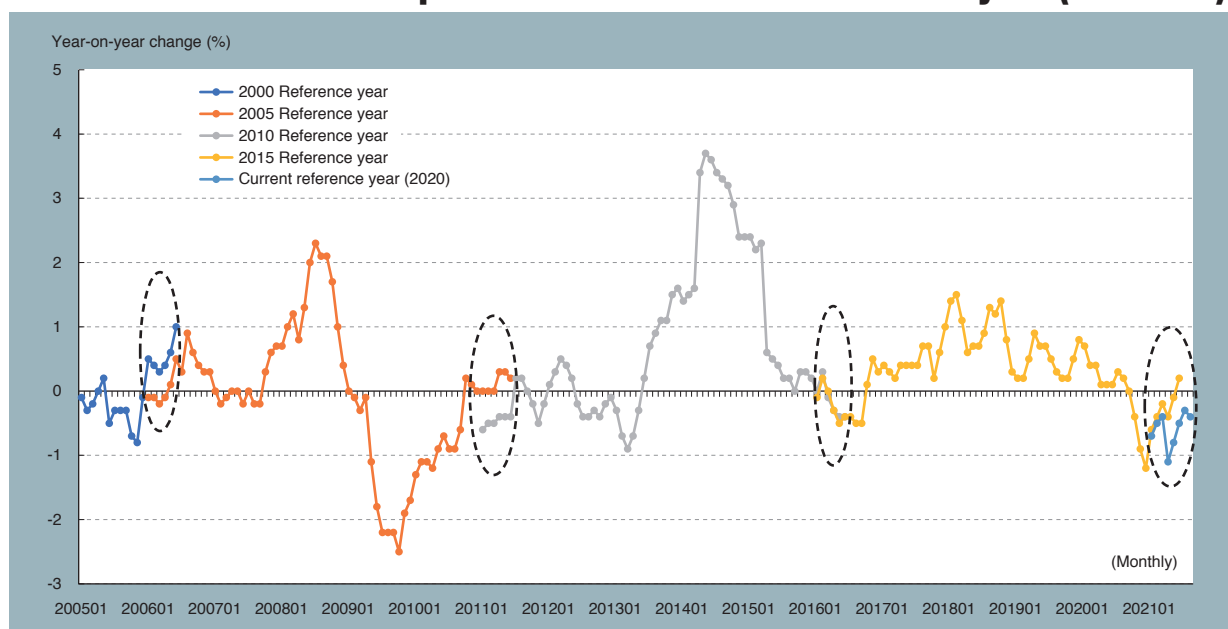
consumption weight is fixed, how expenditure relates to consumption fluctuations can be observed. In calculating the CPI, goods and services which are important to households are selected. This degree of importance changes over time, as does the consumption weight. Hence, goods and services and the consumption weight used to calculate the CPI are revised once every five years. This is the reference year revision, and this time the reference year changed from 2015 to 2020.

With the reference year revision, like for this year, the CPI after January 2020 is recalculated, and thus it will imply that for several months after January 2021 inflation rates under the new reference year and under the old reference year will coexist. Comparing the two, January 2021 and February 2021 were revised downward by 0.1 points, March by 0.3 points, and April to June by 0.6 points.

Chart 1 looks at the long-term trend of the year-on-year rate of rise

CHART 1

Rate of rise in consumer prices with revisions to reference year (All items)



Source: Consumer Price Index, Statistics Bureau, Ministry of Internal Affairs and Communications

for the “All Item” index which synthesizes all goods and services that households purchase, and aside from the last revision to the 2015 reference year, it shows a fairly large downward revision.

Thus, this article for this issue will look at what lies behind the downward revision of the inflation rate with the reference year revision to the CPI.

Communication Is Main Actor of Downward Revision

For consumer prices, price indices by item and consumption weight are released. *Chart 2* shows the factor analysis for this year’s downward revision of the inflation rate with the reference year revision, using information on the top 10 expenditure items such as food and housing. The downward revision from the 2015 reference year to the 2020 reference year shows a sharp expansion from April 2021, but one can see that most of this is due to the downward revision in transportation & communication. For example, the inflation rate for April 2021 was revised downward by 0.6 points, but of that, 0.5 points came from transportation & communication. Looking further at the details, one can see that most of the contribution is from communication within transportation & communication. This is because cell-phone companies introduced a new charging plan in April 2021 which was cheaper than previous plans.

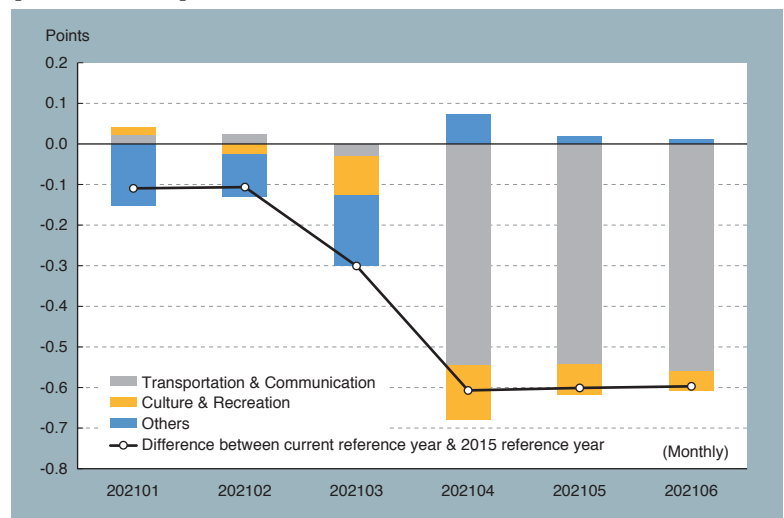
Of course, the 2015 reference year also reflected the impact of new charging plans. But the consumption weight rose from 416 out of 10,000 to 441 out of 10,000 in the 2020 reference year. Looking further at the details, the weight of communication fees (cell-phones) rose from 230 out of 10,000 in the 2015 reference year to 271 out of 10,000 in the 2020 reference year. One factor behind the downward revision is that the impact of the revision in cell-phone charging plans on the inflation rate has become larger compared to the previous reference year.

Change in Price Survey Method Also a Factor

In *Chart 2*, culture and recreation is the second largest contributor to the downward revision after transportation & communication, and of culture & recreation, the contribution of recreational services is especially large. For example, in the downward revision of the inflation rate for April 2021, recreational services contributed 0.11

CHART 2

Contribution to revision of CPI inflation (All items)



Source: Consumer Price Index, Statistics Bureau, Ministry of Internal Affairs and Communications

points. This is because a technology called web scraping was introduced for surveying prices for hotel charges and foreign package-tour fees categorized under recreational services.

Web scraping is a technology that collects information from websites, and it allows collection of prices for goods and services that are sold via the Internet in more volume, more efficiently. Previously, prices on a particular day of each month were surveyed manually and through other methods, but with web scraping everyday prices can be collected. Consumers can easily conduct price comparisons for sales via the web, thus making competition fierce, and it is expected that real market prices in Japan can now be obtained. It should be noted that surveys for airfare prices categorized under transportation also introduced web scraping.

Whether it be communication or recreational services, it can be said that the most recent reference year revision allows for the reality of severe price competition to be more vividly reflected in the CPI.

NOTE: This article was based on available information as of Sept. 24, 2021.

JS

Nobuo Iizuka is a professor of the Department of Economics at Kanagawa University and research director at the Tokyo Foundation for Policy Research. He worked for the *Nihon Keizai Shimbun (Nikkei)* and the Japan Center for Economic Research for more than 20 years, and is one of the most highly-regarded commentators on Japanese business and the economy.

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 (%)		
2013	528.2	2.0	508.7	1.6	-0.2	0.4
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	554.3	0.6	556.2	0.6	1.1	0.9
2019	554.4	0.0	559.9	0.7	-3.0	0.6
2020	529.0	-4.6	538.7	-3.8	-10.4	-0.2
2020/3rd Qtr.	527.5	5.4	538.6	5.4	9.0	-0.3
4th Qtr.	542.5	2.8	551.2	2.3	5.7	-0.9
2021/1st Qtr.	536.8	-1.1	545.2	-1.1	2.9	-0.5
2nd Qtr.	539.3	0.5	544.4	-0.1	1.1	-0.6
2021/Jan.	—	—	—	—	3.1	-0.7
Feb.	—	—	—	—	-1.3	-0.5
March	—	—	—	—	1.7	-0.3
April	—	—	—	—	2.9	-0.9
May	—	—	—	—	-6.5	-0.6
June	—	—	—	—	6.5	-0.5
July	—	—	—	—	-1.5	-0.2
Aug.	—	—	—	—	-3.6	0.0
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 (%)
2013	69.8	9.5	81.2	14.9	12.9	15.6	6.8	12.0	5.9	8.8
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	67.8	-13.7	12.6	-17.3	7.4	-13.9	6.3	-15.1
2020/3rd Qtr.	16.7	-13.0	15.8	-19.9	3.2	-13.7	1.7	-19.5	1.5	-20.2
4th Qtr.	19.4	-0.7	17.4	-11.8	3.7	-0.2	1.8	-17.1	1.8	-2.3
2021/1st Qtr.	19.2	6.0	18.7	1.9	3.3	-4.9	2.0	-3.4	1.8	2.9
2nd Qtr.	20.7	45.0	20.2	23.8	3.7	70.0	2.3	19.9	1.9	52.0
2021/Jan.	5.8	6.4	6.1	-9.5	1.0	-4.8	0.6	-14.1	0.5	-1.6
Feb.	6.0	-4.5	5.8	11.9	1.1	-14.0	0.6	-3.6	0.6	-3.3
March	7.4	16.1	6.7	5.8	1.2	4.8	0.8	6.6	0.7	12.8
April	7.2	38.0	6.9	12.9	1.3	45.1	0.7	5.8	0.7	39.5
May	6.3	49.6	6.5	28.0	1.1	87.9	0.7	28.8	0.6	69.6
June	7.2	48.6	6.8	32.8	1.3	85.7	0.8	27.7	0.7	51.1
July	7.4	37.0	6.9	28.6	1.4	26.8	0.7	24.5	0.6	46.1
Aug.	6.6	26.2	7.2	44.7	1.2	22.8	0.8	33.6	0.6	29.9
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)	
2013	-0.2	0.93	4.0	3.6	-8.8	4.5	97.6
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	3.0	17.5	106.8
2020/3rd Qtr.	-1.2	1.06	3.0	8.5	1.5	5.3	106.1
4th Qtr.	-2.1	1.04	3.1	9.1	2.5	5.3	104.5
2021/1st Qtr.	-0.3	1.10	2.8	9.5	1.4	6.3	105.9
2nd Qtr.	1.0	1.10	2.9	7.7	1.0	4.2	109.4
2021/Jan.	-1.3	1.10	2.9	9.4	-0.1	0.7	103.7
Feb.	-0.4	1.09	2.9	9.6	0.5	2.9	105.4
March	0.6	1.10	2.6	9.5	1.0	2.6	108.7
April	1.4	1.09	2.8	9.3	0.3	1.3	109.1
May	1.9	1.09	3.0	8.0	0.0	2.0	109.1
June	0.1	1.13	2.9	5.9	0.6	0.9	110.1
July	0.6	1.15	2.8	5.3	0.6	1.9	110.3
Aug.	0.7	1.14	2.8	4.7	-0.4	1.7	109.8
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 (%)
2013	7.0	15.6	25.2	8.1	18.3	12.6	12.6	9.7	17.7	17.4
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	7.7	-12.6	24.1	-9.4	17.2	-9.5	15.1	2.7	17.5	-5.2
2020/3rd Qtr.	1.9	-16.6	5.7	-14.2	4.0	-15.0	3.9	9.1	4.2	-9.5
4th Qtr.	2.0	-11.0	6.7	-1.5	4.4	-7.5	4.4	8.1	4.8	1.8
2021/1st Qtr.	2.1	5.7	6.9	7.4	4.8	0.9	4.0	25.4	4.7	23.4
2nd Qtr.	2.4	27.8	7.4	37.9	4.9	24.1	4.6	28.4	5.0	7.1
2021/Jan.	0.7	-2.3	2.1	10.9	1.5	-8.2	1.2	37.5	1.7	-1.0
Feb.	0.6	0.4	2.2	-2.9	1.5	1.5	1.2	3.4	1.4	114.6
March	0.8	19.0	2.6	14.5	1.8	9.8	1.6	37.2	1.6	10.1
April	0.8	16.6	2.6	32.0	1.7	21.8	1.6	33.8	1.8	0.8
May	0.8	39.4	2.2	38.7	1.5	23.6	1.4	23.6	1.6	4.8
June	0.8	29.2	2.5	43.7	1.7	27.0	1.6	27.7	1.6	17.6
July	0.7	14.0	2.6	42.2	1.8	26.5	1.6	18.9	1.6	12.4
Aug.	0.9	54.5	2.5	35.4	1.7	37.9	1.4	12.6	1.6	23.3
Sources	"Trade Statistics of Japan", Ministry of Finance									