



**KENNESAW STATE
UNIVERSITY**

COLES COLLEGE OF BUSINESS
*Bagwell Center for the Study of Markets
and Economic Opportunity*

Commentary

Title:

*"Is the Current Inflation Rate
0% or is it 8.5%? Yes and
Yes!"*

Author(s):

Timothy Mathews

At 8:30am on August 10, 2022 the U.S. Bureau of Labor Statistics (BLS) released its Consumer Price Index (CPI) Report for the month of July 2022.¹ President Biden wasted no time highlighting the reporting, stating later that morning, “our economy had 0% inflation in the month of July,” an observation that was repeated by several media outlets.² Looking at the same BLS report, others noted a current inflation rate of 8.5% and described President Biden’s assessment as a lie.³ Senator Ted Cruz Tweeted: “Ridiculous BS from the White House. There’s 8.5% inflation...This is just cruel gaslighting from...Biden...”⁴

The CPI is a measure of aggregate prices for a basket of goods and services that a typical household purchases. The value of the CPI can be used to compute an inflation rate, which is a measure of the percentage change in the overall price level over time. From here we see that the inflation rate is a flow variable as opposed to a stock variable.

A stock variable measures the level or amount of something at a particular point in time. A flow variable is measured over a period of time. For example, if you have a goal of living a healthier lifestyle and want to monitor your progress, you might look at your weight and your caloric intake. Your weight is a stock variable (e.g., you currently weigh 181 pounds); your caloric intake is a flow variable (e.g., you consumed 3,600 calories of food yesterday). In many applications, the choices of unit of measure and timeframe are both arbitrary. You could measure your weight in pounds or kilograms; you could measure your caloric intake over the last day or the last week.

Returning to inflation, simply observing that the price of pork chops increased by 2.3% during the past month does not mean that we are experiencing 2.3% inflation. This is because, while the price of pork chops went up by 2.3%, the prices of some other goods increased by even more, the prices of some other goods increased by less, and the prices of some other goods decreased over the same time period. Over the past month the price of: eggs increased by 4.3%; a new car increased by 0.8%; and gasoline decreased by 7.7%.⁵ The CPI is computed by weighting the prices of different goods and services based upon their relative importance for a typical household. Since a typical household spends a greater fraction of its budget on gasoline than on eggs, a change in the price of gasoline will have a greater impact on the value of the CPI.

The value of the CPI is computed in each month and measured on a scale such that the price level in the years 1982-84 is equal to 100. Once we have values of the CPI at two different points in time, we can compute how the overall price level has changed over the intervening period

¹ Full report available at: https://www.bls.gov/news.release/archives/cpi_08102022.pdf.

² See “Joe Biden hails July's 'zero' inflation” (<https://www.youtube.com/watch?v=CVYK1UVp0QU>); see “Inflation drops to zero in July due to falling gas prices” (<https://www.axios.com/2022/08/10/inflation-cpi-report-july>) and “One Chart That Shows Inflation Really Was 0% in July” (<https://www.bloomberg.com/news/articles/2022-08-11/one-chart-that-shows-inflation-really-was-0-in-july#xj4y7vzkg>).

³ See “Consumer prices rose 8.5% in July, less than expected as inflation pressures ease a bit” (<https://www.cnbc.com/2022/08/10/consumer-prices-rose-8point5percent-in-july-less-than-expected-as-inflation-pressures-ease-a-bit.html>) and “White House blasted for claiming ‘zero’ inflation after latest CPI report: ‘Lying to everyone’” (<https://www.foxnews.com/media/white-house-blasted-for-claiming-zero-inflation-latest-cpi-report-lying-everyone>).

⁴ See: <https://twitter.com/tedcruz/status/1557390243359326210>.

⁵ These are the actual percentage changes in prices of these goods over the past month as reported in the BLS’s July 2022 CPI Report (https://www.bls.gov/news.release/archives/cpi_08102022.pdf). See portions of Table 2 on pages 9, 11, and 12. Recall, when measuring a flow variable, the choice of timeframe is arbitrary. Over the past year the price of: pork chops increased by 4.8%; eggs increased by 38.0%; a new car increased by 11.7%; and gasoline increased by 44.0%.

of time. For example, if the value of the CPI increased from 210.036 to 258.115, then we can compute that there was a $(258.115 - 210.036) \div 210.036 = 22.9\%$ increase in prices over the relevant time period.⁶ Table 1 reports the value of the CPI in every month between January 2016 and July 2022.

Table 1: CPI, January 2016 through July 2022

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	236.916	237.111	238.132	239.261	240.229	241.018	240.628	240.849	241.428	241.729	241.353	241.432
2017	242.839	243.603	243.801	244.524	244.733	244.955	244.786	245.519	246.819	246.663	246.669	246.524
2018	247.867	248.991	249.554	250.546	251.588	251.989	252.006	252.146	252.439	252.885	252.038	251.233
2019	251.712	252.776	254.202	255.548	256.092	256.143	256.571	256.558	256.759	257.346	257.208	256.974
2020	257.971	258.678	258.115	256.389	256.394	257.797	259.101	259.918	260.28	260.388	260.229	260.474
2021	261.582	263.014	264.877	267.054	269.195	271.696	273.003	273.567	274.31	276.589	277.948	278.802
2022	281.148	283.716	287.504	289.109	292.296	296.311	296.276					

When computing an inflation rate, the most common approach is to look at the change in price level over the most recent year. This gives us an annual inflation rate and is the standard measure of price changes.⁷ For example, we could compute that in January 2021, the overall price level had increased by $(261.582 - 257.971) \div 257.971 = 1.4\%$ over the last twelve months. From the numbers in Table 1, we could do this calculation in every month from January 2017 through July 2022, getting the values for annual inflation rates reported in Table 2.

Table 2: Percentage Increase in Price Level over Past Year, January 2017 through July 2022

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017	2.5	2.7	2.4	2.2	1.9	1.6	1.7	1.9	2.2	2.0	2.2	2.1
2018	2.1	2.2	2.4	2.5	2.8	2.9	2.9	2.7	2.3	2.5	2.2	1.9
2019	1.6	1.5	1.9	2.0	1.8	1.6	1.8	1.7	1.7	1.8	2.1	2.3
2020	2.5	2.3	1.5	0.3	0.1	0.6	1.0	1.3	1.4	1.2	1.2	1.4
2021	1.4	1.7	2.6	4.2	5.0	5.4	5.4	5.3	5.4	6.2	6.8	7.0
2022	7.5	7.9	8.5	8.3	8.6	9.1	8.5					

But recall, for a flow variable (such as the inflation rate), the choice of time over which to measure is somewhat arbitrary. Instead of computing the percentage increase in price level over the last twelve months, one could focus on the change over the last month. For example, between March 2020 and April 2020 we see that the percentage change in the overall price level was $(256.389 - 258.115) \div 258.115 = -0.7\%$. That is, in April 2020 overall prices were 0.7% lower than in March 2020!⁸ From the numbers in Table 1, we could do this calculation in every month

⁶ This was the actual increase in the value of the CPI – and resulting percentage increase in overall prices – between December 2007 and March 2020. See: <https://data.bls.gov/timeseries/CUUR0000SA0>.

⁷ For example, in their widely used undergraduate textbook “Essentials of Economics,” Paul Krugman, Robin Wells, Kathryn Graddy define the inflation rate as “the annual percent change in an official price index” (2nd edition, page 322).

⁸ A realization of a negative inflation rate reveals that prices are declining and is called deflation.

from February 2016 through July 2022, getting the values for measures of price changes over the past month reported in Table 3.

Table 3: Percentage Increase in Price Level over Past Month, February 2016 through July 2022

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016		0.1	0.4	0.5	0.4	0.3	-0.2	0.1	0.2	0.1	-0.2	0.0
2017	0.6	0.3	0.1	0.3	0.1	0.1	-0.1	0.3	0.5	-0.1	0.0	-0.1
2018	0.5	0.5	0.2	0.4	0.4	0.2	0.0	0.1	0.1	0.2	-0.3	-0.3
2019	0.2	0.4	0.6	0.5	0.2	0.0	0.2	0.0	0.1	0.2	-0.1	-0.1
2020	0.4	0.3	-0.2	-0.7	0.0	0.5	0.5	0.3	0.1	0.0	-0.1	0.1
2021	0.4	0.5	0.7	0.8	0.8	0.9	0.5	0.2	0.3	0.8	0.5	0.3
2022	0.8	0.9	1.3	0.6	1.1	1.4	0.0					

So, is the current inflation rate 0% or is it 8.5%? In July 2022, the value of the CPI was 296.276. As reported in Table 2, this is 8.5% higher than the value of 273.003 in July 2021. That is, as of July 2022 the annual inflation rate is 8.5%. But the July 2022 CPI value of 296.276 is essentially unchanged from the June 2022 CPI value of 296.311 (it's actually slightly less, revealing a slight decrease in prices – but in percentage terms it rounds to 0.0%). That is, over the past month the overall price level is unchanged, consistent with an inflation rate of 0%. So yes, President Biden is correct: our economy had 0% inflation in July. And yes, Senator Cruz is correct: the current inflation rate as of July 2022 is 8.5%.