

Fed: “Research and analysis about consumers, their financial experiences, and the communities in which they live inform Federal Reserve policymaking.” – Fed Board

Fed Unfiltered: Each week we’ll read through and outline the most relevant information for your decision-making.

Inflation (CPI vs PCE): Richmond Fed covers this years changes in the CPI. Philip Jefferson, Jim Bullard and a St. Louis Fed research report explain the differences between CPI and PCE, including why PCE Is the preferred index.

Richmond Fed – The 2023 Changes in CPI

- “How can a plethora of individual price changes in the economy be combined into a single number that represents the overall change in the cost of living? When building the Consumer Price Index (CPI), the Bureau of Labor Statistics (BLS) accomplishes this by figuring out (via consumer spending surveys) what a representative basket of consumer goods and services looks like. Notably, as consumer spending patterns change, the composition of this basket changes over time.”
- In January, the BLS announced two changes to its CPI basket. These included: (1) a change in the weights to reflect year 2021 consumption patterns — updating from the prior weights based on 2019-2020 patterns; and (2) increasing the frequency of these updates to annual versus every two years.
- “The BLS also provides a comparison of January month-over-month price growth under the new and old weights. A selection of these is shown in Table 1 below. At the headline level, month-over-month growth rates of CPI are similar using both weighting schemes at about 0.8 percent month-over-month growth (prior to seasonal adjustment).”

Table 1: Comparison of Selected CPI-U, U.S. City Average 1-Month Percent Changes Using Old (2019-2020) Weights and New (2021) Weights

Series Title	CPI-U 1-month NSA percent change, new (2021) weights	CPI-U 1-month NSA percent change, old (2019-2020) weights	Difference in percent changes
All items	0.8	0.763	0.037
Food and Beverages	0.714	0.702	0.012
Food at home	0.784	0.776	0.008
Food away from home	0.616	0.598	0.018
Energy	3.053	3.355	-0.302
Gasoline (all types)	3.15	3.351	-0.201
Electricity	2.295	2.292	0.003
Utility (piped) gas service	6.621	7.708	-1.087
All items less food and energy	0.616	0.529	0.087
Housing	0.973	1.024	-0.051
Shelter	0.741	0.748	-0.007
Apparel	2.639	2.471	0.168
Recreation	0.68	0.707	-0.027
Education	0.116	0.117	-0.001
Communication	0.395	0.4	-0.005
Medical Care	0.076	0.054	0.022
Hospital Services	0.5	0.538	-0.038
Physicians' Services	-0.1	-0.363	0.263
Prescription Drugs	2.095	2.11	-0.015
Transportation	0.735	0.479	0.256
New Vehicles	0.461	-0.311	0.772
Used Cars and Trucks	-1.592	-1.592	0

- “Furthermore, the idea that updated weights will result in a lower estimate of inflation by accounting

for substitution does not appear to hold in this revision ... Perhaps buyers haven't been shopping around for bargains as frequently during this period of high inflation because they're expecting prices are going to be similarly high everywhere. Price setters might exploit this inelasticity to keep prices higher for longer. Maybe buyers aren't shopping around because they're afraid prices will rise further if they delay their purchase. If so, inflation expectations could take longer to fall to levels more consistent with the Fed's target. But January is just one month of data: Time will tell if savvy shopping can make a comeback, yielding more savings to households.”

[Richmond Fed, Report: A CPI Basket Case 2/28/23](#)

Philip Jefferson – Different Ways to Measure Inflation

- “The two primary measures of the price level in the United States are the consumer price index, commonly referred to as the CPI, and the personal consumption expenditures price index, commonly referred to as the PCE price index. Positive changes in these indexes are recorded as inflation. Each inflation measure has both total (or headline) and core subindexes, which I will talk about later. The CPI and PCE price indexes are constructed in broadly similar ways, but there are important differences between them.¹ Both indexes measure inflation using a specific basket of goods and services consumed by households. These baskets are similar but not identical across the two measures. Both measures also weight each item in their basket roughly in accordance with its expenditure share. That is, the more households spend on an item, like rent, the higher the weight it receives in the overall index. The weights are broadly similar across the two indexes, but, again, there are some important differences.”
- “Now, let’s talk in more detail about the differences between the CPI and the PCE price indexes. First, the PCE price index has a *broader scope* than the CPI. The CPI is limited to expenditures that households pay out of pocket, while the PCE price index covers a broader set of goods and services as it seeks to cover prices for all consumer expenditures in the national income and product accounts (NIPA). For example, the PCE price index includes prices of the health services provided to households through Medicaid, while the CPI excludes these items.”
- “Second, the PCE price index and the CPI use *different weighting* systems. The PCE price index, which is more comprehensive than the CPI, estimates expenditure shares using the national income and product accounts, while the CPI measures expenditure shares using a separate survey of households, the Consumer Expenditure Survey. This leads to some differences in expenditure weights that can at times be important. For example, the share of medical services is notably higher in the PCE price index (partly

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because the PCE price index includes more kinds of medical expenditures), and the share of housing services is noticeably smaller (because overall expenditures are larger in the PCE price index). As a result, when health-care services or housing services inflation behave differently than other prices, this can lead to differences in PCE versus CPI inflation."

- "Another difference in the weights is that the PCE price index uses time-varying weights, while the official CPI keeps weights fixed for a year. The PCE price index weights change to reflect changes in the goods consumers buy. For instance, at the start of the pandemic, the CPI was still giving the same weights to cruise ship and airline fares, even though no one was traveling. The time-varying weights in PCE also account for *substitution* behavior. Suppose the price of apples goes up and the price of oranges stays the same. Consumers are then likely to substitute apples with oranges. In contrast, the CPI does not capture substitution behavior because the basket of goods consumers purchase is updated only once a year (instead of every month) and reflects expenditure patterns prevailing two years ago. The substitution effects captured by the PCE price index is one reason why PCE inflation (black line) is, almost always, lower than CPI inflation (red line), as you can see in figure 1."

Philip Jefferson, Speech: Recent Inflation and the Dual Mandate 2/27/23

James Bullard – History and Differences btwn CPI & PCE

- "The CPI, which rose 8.5% in July 2022 from a year earlier, measures the price changes for a basket of goods and services purchased by the typical urban consumer. The items in this basket are weighted by their relative importance in consumer expenditures. For example, housing—rent and other spending on shelter—accounts for 33% of the index, while medical care accounts for nearly 9%."
- "Of course, any price index like the CPI has to take into account changing consumption patterns. New items come in and old items leave. Currently, the CPI weights are adjusted every two years using two years of consumer spending data; beginning next year, however, the BLS will update weights annually using one year of data."
- "Before 2000, the Federal Open Market Committee (FOMC) typically watched the CPI to gauge inflation. But in the 1990s, the Federal Reserve took a careful look at alternative inflation measures and decided that it preferred a different measure: the headline personal consumption expenditures (PCE) price index. Though the two indexes are closely related, there are reasons why the PCE is considered a better tool for policymakers."
- "The PCE price index, which rose 6.3% in July 2022 from a year earlier, is derived from a broader index of prices than the CPI's more narrow set of goods and services. The argument that carried the day was that a more comprehensive index of prices provides

a better way to gauge underlying inflationary pressures. Because the PCE includes more goods and services, the index's weights for particular items will differ from those in the CPI. For example, housing has a weight of about 16% in the PCE price index versus 33% in the CPI."

- "Another advantage in tracking the PCE is that the index's weights are updated monthly, versus biennially for the current CPI. Thus, the PCE can quickly reflect the impact of new technology or an abrupt change in consumer spending patterns."

James Bullard, Essay: Making Sense of Inflation Measures, 9/8/22
<https://fedunfiltered.com/james-bullard-essay-making-sense-of-inflation-measures/>

St. Louis Fed – Differences and Weighting of CPI/PCE

- "The CPI and PCE differ in large part because their baskets are constructed differently, with different "scopes" in mind. For one thing, the CPI focuses on urban consumers—people living in cities—whereas the PCE focuses on all consumers in the country."
- "More fundamentally, the CPI is designed to reflect out-of-pocket purchases made directly by consumers; the PCE instead reflects purchases made both *by* and *on behalf of* consumers, regardless of who or what entity directly pays. Consequently, expenditures made for consumers by employers, nonprofits, governments, and other institutions (such as health care services paid for by employers for employees) are included in the PCE but not the CPI."
- "The indexes also differ in how much of each item they include (or, equivalently, how much they "weight" each item) in their baskets. Both indexes reflect the amounts of each item purchased by (or on behalf of) the typical consumer—but they rely on different data sources to estimate these purchases. Moreover, CPI weights come from household surveys, whereas PCE weights come from business surveys."

Category	CPI	PCE
Food and beverages	14.3	13.5
Housing	42.0	23.5
Apparel	2.5	3.7
Transportation	19.0	10.7
Medical care	8.4	22.1
Recreation	5.1	7.6
Education and communication	6.2	5.5
Other goods and services	2.7	13.4

NOTE: Unlike the CPI, the PCE is calculated in a way that prevents extracting exact "weights." We approximate them by taking the average of PCE expenditure shares for each category over the current and previous month to reflect the expenditure data that enters the index's calculation.
SOURCE: BEA, BLS, authors' calculations.

St. Louis Fed, Report: Inflation, Part 2: How Do We Construct and Choose an Index? 6/22/22

<https://fedunfiltered.com/st-louis-fed-report-inflation-part-2-how-do-we-construct-and-choose-an-index-6-22-22/>

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