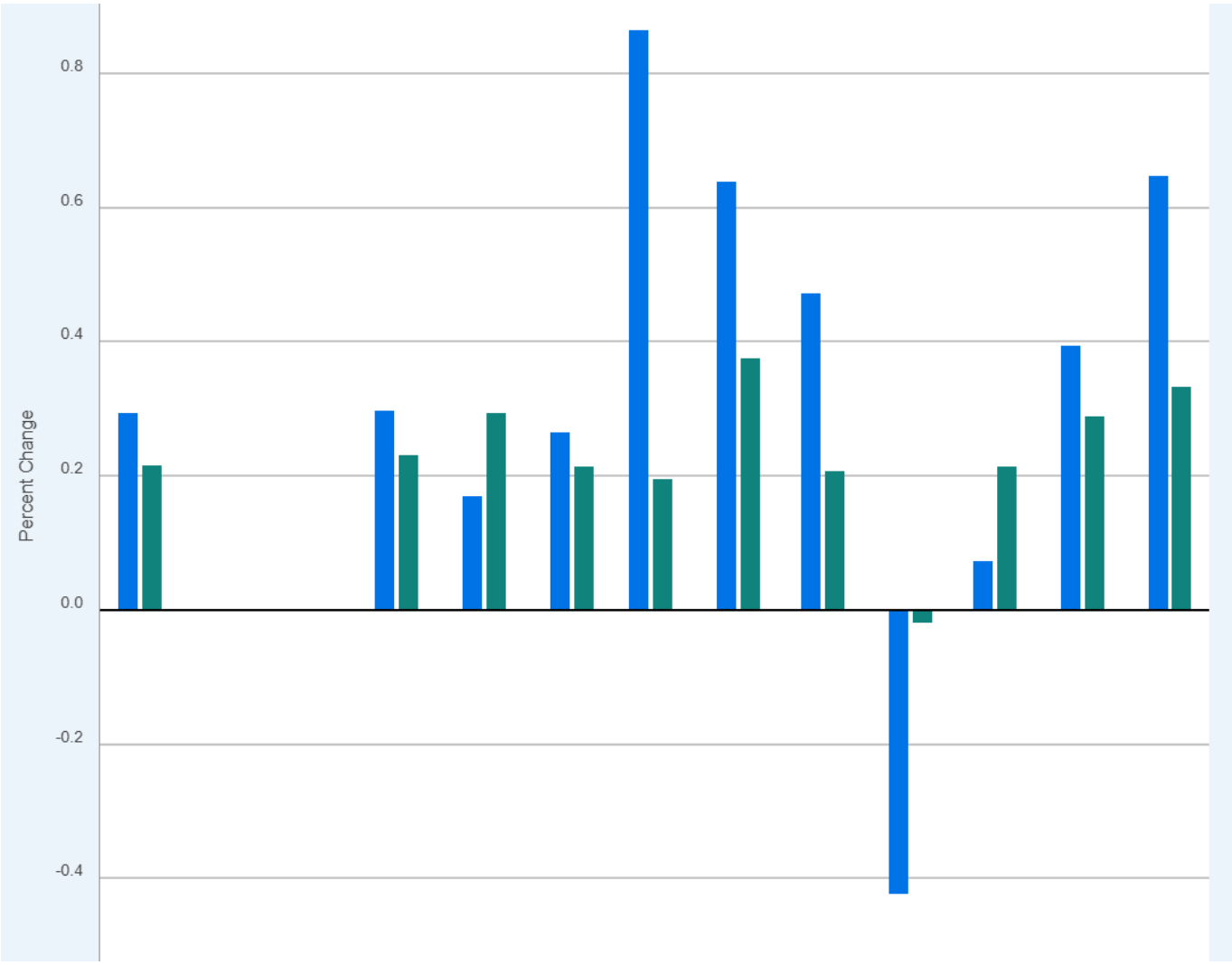
Macro Soup

📚 How the consumer price index is built, and why gasoline can run a whole month

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> *Gasoline's 9.1% jump supplied more than half of September's 0.6% monthly CPI rise, while shelter sets the 3.7% annual rate. A primer on how spending weights work, and how core, CPI-W and the Fed's preferred PCE gauge differ.*



The St. Louis Fed's FRED update leaves annual CPI at 3.7%, with a 3.9% gasoline weight still able to overwhelm a 0.3% core print and keep the Fed's 2% target out of reach. Source

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What is the consumer price index

The Consumer Price Index (CPI) prices a fixed shopping cart of goods and services bought by urban households. The Bureau of Labor Statistics (BLS) builds it from about 22,000 retail establishments and 6,000 housing units across 75 urban areas. The headline series, CPI for All Urban Consumers (CPI-U), covers more than 90% of Americans. The index is set so that 1982-84 equals 100, which means September's reading of **336.940** puts the reference basket at about 3.4 times its base-period price.

CPI is a spending-weighted average. Each category's price change is multiplied by its share of household budgets, and the products are summed. Think of a restaurant bill. A price rise on the main course moves the total more than the same rise on the coffee, unless the coffee price triples.

Why it matters

September shows the mechanics cleanly. The BLS release had CPI-U up **0.6%** on the month (previous: 0.4%) and 3.7% on the year vs. a consensus of roughly 3.6% to 3.7% (previous: 3.4%). Core CPI, which excludes food and energy, rose 0.3% on the month and 2.6% on the year (previous: 2.4%).

You can rebuild the headline yourself with approximate weights:

- Gasoline: +9.1% × 3.9% weight ≈ **0.35 percentage point**, more than half the monthly gain
- Energy overall: +5.2% × 7.4% weight ≈ 0.38 percentage point
- Shelter: +0.4% × 35% weight ≈ 0.14 percentage point

A small category with a big move outran the biggest category with an ordinary one. Over twelve months the order flips. Shelter, up 3.2% on the year, moves slowly and carries a heavy weight, so it sets the annual rate far more than any one month of pump prices.

CPI also moves real money. Social Security cost-of-living adjustments track the CPI for Urban Wage Earners and Clerical Workers (CPI-W), which ran at **3.9%** on the year. Treasury Inflation-Protected Securities and many leases run off unadjusted CPI-U.

How to interpret it

Take the month and the year separately, and always put core next to the headline. A 0.6% headline with a 0.3% core looks like an energy shock that hasn't reached the rest of the basket. Several months of core at 0.3% or more would end that reading.

Check which index is on the screen. CPI-U was 3.7%, CPI-W 3.9% (heavier on gasoline, lighter on shelter) and chained CPI, which allows for shoppers switching goods, 3.5% (preliminary). The Fed's 2% target uses none of them. It runs on the personal consumption expenditures (PCE) price index from the Bureau of Economic Analysis, which carries less shelter. August core PCE was 3.0% against core CPI of 2.4%, an unusual inversion.

Two caveats. Shelter is mostly rent and owners' equivalent rent, not house prices. And BLS puts the standard error on a one-month all-items change near 0.04 percentage point, so small gaps between prints are noise.

Key takeaways

- CPI is weight times price change, summed. Do the arithmetic before trusting a narrative.
- Gasoline can dominate a month. Shelter dominates the year.
- Core separates a temporary energy spike from broad inflation.
- CPI-U, CPI-W, chained CPI and PCE answer different questions.

Main sources

- Consumer Price Index Summary, September 2026 (BLS)
- CPI-U by expenditure category, September 2026 (BLS)
- Consumer Price Indexes overview (BLS)
- Cost-of-living adjustments (Social Security Administration)
- Personal Consumption Expenditures Price Index (BEA)
- Why does the Federal Reserve aim for inflation of 2 percent over the longer run? (Board of Governors)

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