

# UP FRONT



**David Wessel**  
Director  
Hutchins Center on Fiscal and Monetary Policy  
Senior Fellow, Economic Studies  
Brookings Institution

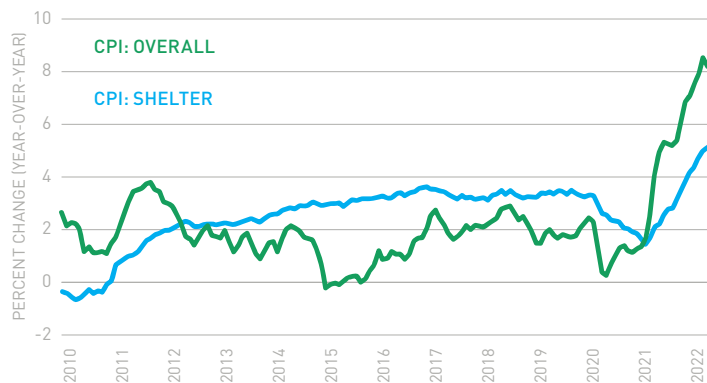
**Sophia Campbell**  
Former Senior Research Assistant  
Hutchins Center on Fiscal and Monetary Policy  
Brookings Institution

# How does the Consumer Price Index account for the cost of housing?

Housing represents about a third of the value of the market basket of goods and services that the Bureau of Labor Statistics uses to track inflation in the Consumer Price Index. A rise in the price of shelter, the US Bureau of Labor Statistics label for housing, contributed to the increase in inflation in early 2022. Measuring changes in shelter costs is more difficult than measuring changes in the prices of, say, apples or tires. This post explains how the US Bureau of Labor Statistics currently measures changes in the cost of housing for both renters and homeowners.

## EXHIBIT 1: BOTH OVERALL AND SHELTER INFLATION ARE RISING RAPIDLY

Source: St. Louis Federal Reserve, FRED



## HOW DOES US BUREAU OF LABOR STATISTICS CALCULATE THE PRICE OF SHELTER?

For tenant rent, the US Bureau of Labor Statistics counts cash rent paid to the landlord for shelter and any utilities included in the lease, plus any government subsidies paid to the landlord on the tenant's behalf.

If a housing unit is occupied by the owners, the US Bureau of Labor Statistics computes what it would cost the owner to rent a similar place, known as Owners' Equivalent Rent (OER). The cost of utilities paid by homeowners is measured separately in the CPI.

## WHY DOES THE US BUREAU OF LABOR STATISTICS USE OWNERS' EQUIVALENT RENT (OER) INSTEAD OF HOME PRICES?

The CPI is intended to capture the price changes over time of the goods and services consumed by households. For housing, the US Bureau of Labor Statistics is trying to measure the cost of the consumption value of a home—the shelter services provided—not the change in the value of the house. Thus, the US Bureau of Labor Statistics uses the OER to measure the cost of shelter for homeowners. To give a concrete example, if a family buys a house for \$300,000 in 2022 and lives there for the next ten years, their housing-related cost of living is not \$300,000 in 2022 and zero in the subsequent ten years. Rather, their housing-related cost of living is the amount they would have had to spend to consume the same amount of housing services provided by their owner-occupied home.

## WHERE DOES THE US BUREAU OF LABOR STATISTICS GET THE DATA FOR SHELTER PRICES?

The US Bureau of Labor Statistics collects the data on rent for about 50,000 residences through personal visits or telephone calls. One sixth of the sample is replaced each year to keep it representative. Since rents do not change frequently, the rent of each unit is sampled every six months.

The CPI measures price growth for the same basket of goods and services over time, so the US Bureau of Labor Statistics adjusts for changes in quality of the properties it observes. The adjustments account for the age of the property, neighborhood improvements, and physical renovations to the home like the number of bathrooms or new air conditioning systems.

Because the US Bureau of Labor Statistics only observes rent for renter-occupied units, they impute owner's equivalent rent for owner-occupied homes using the average rents paid for comparable rental housing within the same area.

**WHAT ARE THE POTENTIAL PROBLEMS WITH THE MEASUREMENT OF THE OER?**

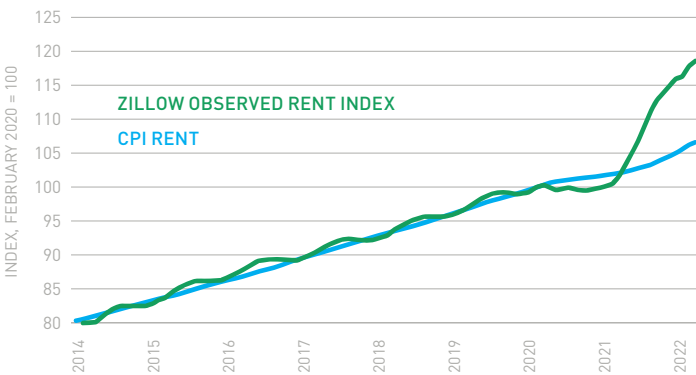
Finding rental housing that is comparable to an owner-occupied unit can be difficult. Predominantly renter-occupied neighborhoods are often geographically separate from owner-occupied ones—for example, a city center versus a suburb. Even within the same geographic area, housing characteristics can vary widely across rental and owner-occupied units—for example, the owner-occupied units in a neighborhood may be single-family homes, while the rental units may be multi-family buildings. Finding comparable rental housing is particularly difficult for large, expensive single-family houses.

**WHY DO I SEE HEADLINES ABOUT RENTS RISING MUCH FASTER THAN THE CPI MEASURE?**

Well-known indexes of market rents—like the one published by Zillow—capture rents of units currently advertised on the open market, and don’t capture rents for units occupied by continuing renters like the CPI does. Rents change when leases expire, which typically happens annually. This can lead to a lag between changes in indexes like Zillow’s and those in the US Bureau of Labor Statistics’s rent measure. From the perspective of the CPI, this lag isn’t a problem as the CPI is accurately capturing what households actually pay in rent. It does suggest that the CPI’s shelter inflation will likely increase in coming months as the tight housing market shows through to rents on all rental units.

**EXHIBIT 2: RENTS OF ADVERTISED UNITS HAVE INCREASED MUCH FASTER THAN AVERAGE RENTS DURING THE PANDEMIC**

Sources: St. Louis Federal Reserve, FRED; Zillow



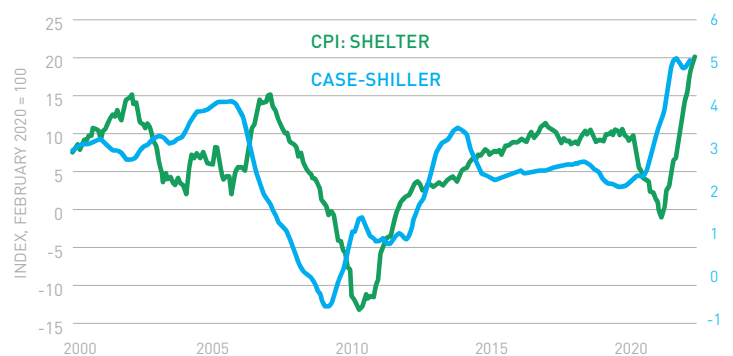
**HOW DO HOUSE PRICES AFFECT THE CPI MEASURE OF HOMEOWNERSHIP COSTS?**

House prices and rental prices are determined by supply and demand factors that don’t always move in tandem. For example, if demand for homeownership rises because mortgage rates fall, house prices will rise but rents will not. If home construction costs increase, on the other hand, the price of both rental and owner-occupied housing would likely rise.

Over time, changes in house prices do predict changes in rents—although the relationship is far from 1-to-1 and occurs with long lags. Xiaoqing Zhou and Jim Dolmas of the Dallas Fed find house price growth’s correlation with OER inflation peaks at about 0.75 after sixteen months; the correlation with rent inflation peaks at after eighteen months.

**EXHIBIT 3: CPI’S SHELTER INFLATION LAGS HOUSE PRICE GROWTH (YEAR-OVER-YEAR CHANGE IN CPI SHELTER VS. CASE-SHILLER NATIONAL HOME PRICE INDEX)**

Sources: US Bureau of Labor Statistics; S&P Case-Shiller National Home Price Index





If the historical relationship between housing prices and rent inflation hold true, rent inflation will increase by about 7% in 2022 and 2023, almost twice the pre-pandemic five-year average.

---

### WHAT IS LIKELY TO HAPPEN TO THE CPI MEASURE OF SHELTER COSTS IN THE COMING YEAR?

---

The tightening of the housing market during the pandemic led to a divergence between housing market prices and CPI measures of shelter inflation. “Despite record growth in private market-based measures of home prices and rents,” economists Marijn A. Bolhuis, Judd N. L. Cramer, and Lawrence H. Summers note, “government measured residential services inflation was only four percent for the twelve months ending in January 2022.”

Given recent trends in rents and house prices, however, analysts anticipate the shelter component will boost the CPI inflation measure in coming months. If the historical relationship between housing prices and rent inflation hold true, both Bolhuis, Cramer, and Summers and researchers at the San Francisco Fed project (as of February 2022) that rent inflation will increase by about 7% in 2022 and 2023, almost twice the pre-pandemic five-year average. With shelter making up about a third of the CPI, these findings imply that housing will boost headline CPI inflation about 1.1 percentage points above its historical average by the end of 2022.

---

### ABOUT THE AUTHORS

---

David Wessel is Director of the Hutchins Center on Fiscal and Monetary Policy and a Senior Fellow for Economic Studies at the Brookings Institution. Sophia Campell is a former Senior Research Assistant for the Hutchins Center on Fiscal and Monetary Policy at the Brookings Institution.

---

### NOTES

---

\* This article is reprinted with permission from the authors and the Brookings Institution. See more: David Wessel and Sophia Campbell, “How Does the Consumer Price Index Account for the Cost of Housing,” Brookings Institution, May 18, 2022, [brookings.edu/blog/up-front/2022/05/18/how-does-the-consumer-price-index-account-for-the-cost-of-housing/](https://brookings.edu/blog/up-front/2022/05/18/how-does-the-consumer-price-index-account-for-the-cost-of-housing/)