

Do Rents Drive Inflation, or Does Inflation Drive Rents?



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Inflation and residential rents have a complicated relationship.

On the one hand, as shown in Exhibit 1, shelter cost is by far the largest component of the Consumer Price Index (CPI), accounting for one-third of the index. Because the vast majority of shelter cost is rent, changes in rents have a large impact on the most common measures of inflation (although at a significant lag, as explained below). Hence, rents drive inflation and were a significant source of the high inflation level that occurred through 2022 as well as an important variable in what inflation will look like going forward.

On the other hand, multifamily investments, it is commonly believed, provide an inflation hedge because, especially with shorter lease terms than in other real estate sectors, inflation is passed along in the form of higher rents. If true, this means that inflation drives rents.

So which is it? Does inflation drive rents, or do rents drive inflation? In this article, I attempt to unravel this complicated two-way relationship somewhat and come

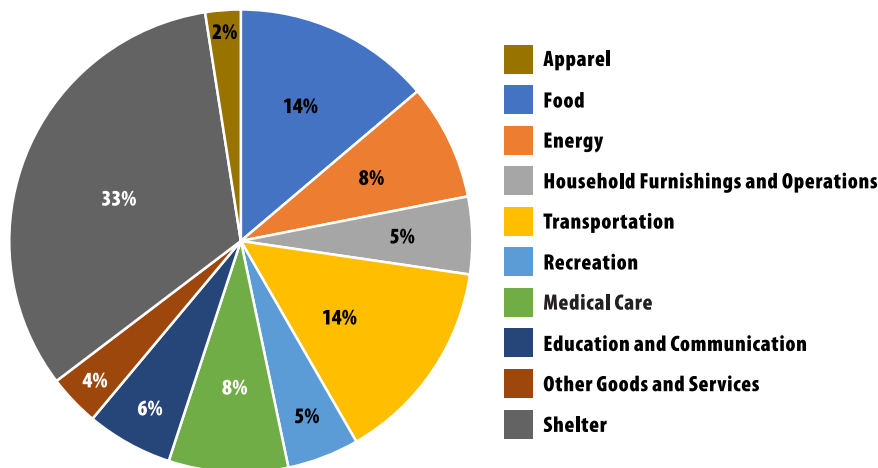
to the conclusion that both are true, although the details vary depending on which direction of the relationship you look at.

Rent in the CPI and Why It Lags What Is Happening In the Market

The Bureau of Labor Statistics (BLS) uses surveys to measure the changes in rent costs that go into the CPI, asking renters how their rents (and the properties) have changed over time. The CPI includes two forms of rent—rent of primary residence and owners' equivalent rent, meant to gauge changes in the cost of living for those who rent and those who own their homes. Rent of primary residence measures exactly what it sounds like—rent costs to those who rent their residences; this makes up 7.4% of the overall CPI (part of the one-third of the CPI that is shelter). Owners' equivalent rent is the more important category, comprising 24.0% of the CPI, and is meant to measure changes in the implied cost of shelter for those who own their residences. For homeowners, the CPI does not include mortgage costs or housing prices because they are largely tied to the investment nature of property rather than to its service nature as a

place to live—owners' equivalent rent is meant to measure the implied rents that owners would pay if they rented their homes to themselves. However, to measure changes in prices, the CPI does not survey homeowners separately; it uses the same survey for renters as it uses for rents of primary residences. That is, a survey of renters is used to gauge changes in the cost of renting, and the same survey (with some technical adjustments) is used to estimate changes in the implicit rents being paid by homeowners. Given the sizable influence of rents on the

Exhibit 1: Relative Importance in CPI



Source: PREA Research calculations based on Bureau of Labor Statistics data; as of Oct. 2022

CPI overall, this survey has an important impact on the inflation numbers ultimately reported.

Because of the way the cost of shelter is measured in the CPI, it necessarily lags any changes occurring in the multifamily market. One reason is simply the way the survey is conducted. The BLS repeatedly surveys the same sample of renter households to see how rents change over time. However, it resurveys only one-sixth of the sample each month (e.g., households surveyed in January are surveyed again in July; households surveyed in February are surveyed again in August). This means that even if all rents suddenly changed, the full effect and the increase in rents would take six months to be reflected in the CPI. The most important reason the CPI measure of rents lags the market, however, is that the cost of shelter in the CPI is based on in-place rents, which can be much different from the new-lease asking rents real estate investors are often accustomed to thinking about. A tight rental market with rising asking rents is immediately noticed by real estate investors but takes significant time to be reflected in the CPI. The CPI cost of shelter incorporates any change in asking rents gradually as leases expire and renters report higher rents on new leases to the BLS. Using in-place rents in the CPI makes perfect sense for its purpose; the CPI is designed to measure current cost of living and therefore should be based on actual rents consumers pay. However, this means that real estate investors with knowledge of what is happening in the market should have some predictive power on what headline inflation measures will be reported in the future. In other words, because rent is a major part of the CPI, but with a lag, those looking at current market indicators can glean insights on what is likely to happen to inflation going forward.

Researchers at the Federal Reserve Bank of Dallas used the lag between real estate market changes and the CPI's reflection of those changes and found that house prices, which are predictive of rents, can be used to forecast future changes in reported inflation.¹ They reported that changes in house prices feed into the CPI with a lag of 12 to 18 months. Keeping an eye on housing prices now can provide insights on

what inflation numbers might hit in 12 to 18 months. Researchers at Pennsylvania State University have created an alternative inflation index, the Penn State/ACY CPI Index, that replaces the rent inflation in the traditional CPI with a measure based on net operating income at multifamily properties.² This new measure of rent inflation tends to lead official CPI rent inflation by about seven months, and the resulting inflation index may provide a more current view on what is happening to inflation than the official statistics.

Yes, Rents Drive Inflation

To see whether changes in market rents drive officially reported inflation, I analyze the relationship between the shelter CPI as reported by the BLS (i.e., the inflation rate for shelter alone) and national asking rents as tracked by Yardi Matrix. I examine the percentage shelter CPI and the percentage change in asking rents each month over the 20-year period from Nov. 2002 to Nov. 2022. Yardi Matrix currently tracks rents in 171 different markets across the US (although fewer for earlier years), and the average across those markets is taken to represent the national rent level. Exhibit 2 shows the correlation between national asking rents and shelter CPI at various leads and lags from 24 months in the past to 24 months in the future.

The exhibit shows that a particular month's change in national asking rents is correlated with reported shelter CPI in the future. The positive relationship goes out for 24 months, but the strongest correlations are over the next 12 months. On the other hand, looking at current asking rents and past inflation, there is little relationship at anything more than a two-month lag.³

The correlations appear to provide conclusive evidence that asking rents drive future shelter CPI.

1. Xiaoquig Zhou and Jim Dolmas, "Rent Inflation Expected to Accelerate and Then Moderate in Mid-2023," Federal Reserve Bank of Dallas, Aug. 16, 2022.

2. Penn State/ACY Alternative Inflation Index, "Penn State Alternative Inflation Rate Update—January 2023."

3. The correlations between shelter CPI and asking rents one and two months later indicate there may be a short-term relationship between CPI and future rents. I do not explore this further for this article, but it is possible this just reflects momentum in rents (i.e., higher rents tend to move up month after month in a strong market or vice versa in a weak market). The correlations at lags -1 and -2 may reflect this—higher rents drive shelter CPI higher, and the next month's rents continue to rise, so it appears that shelter CPI is driving rents higher while it is actually just the momentum in rents.

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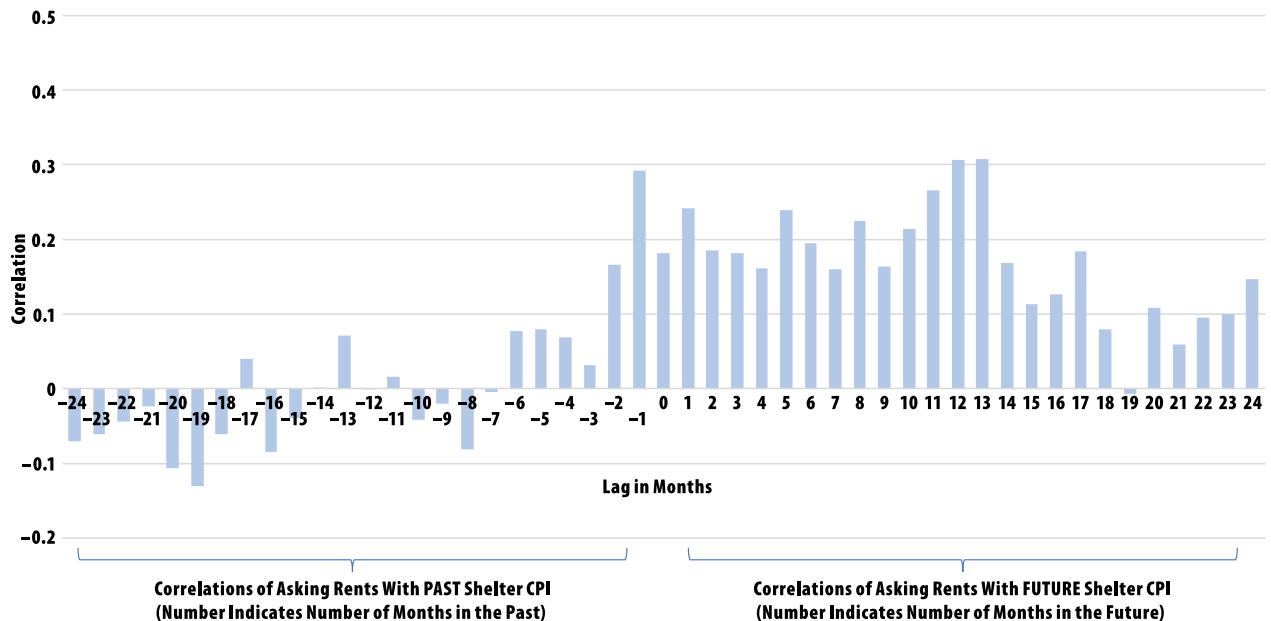


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Exhibit 2: Correlation Between Changes in Asking Rents and Shelter CPI, at Leads and Lags

Sources: PREA Research, Yardi Matrix, and Bureau of Labor Statistics

Because shelter is such a large component of the overall reported inflation rate, it follows that rents are an important factor in future inflation, especially over the next 12 months. To quantify this into a single number, I use regression analysis to look at the relationship between a single month's percentage change in asking rents and the shelter inflation rate over the next year.⁴ The results indicate that a 1% rise in national asking rents in a single month is associated with a 0.84% rise in reported shelter inflation over the next year.

Also Yes, Inflation Drives Rents

Exhibit 2 shows that, unsurprisingly, changing conditions in the rental market drive future inflation rates reported by the BLS, and investors may gain insights into future reported inflation numbers by examining what is happening in residential rental markets today. But what about the relationship going the other way? Do asking rents react to inflation? This is an important question for real estate investors because it gets to the heart of whether multifamily can function as an inflation hedge.

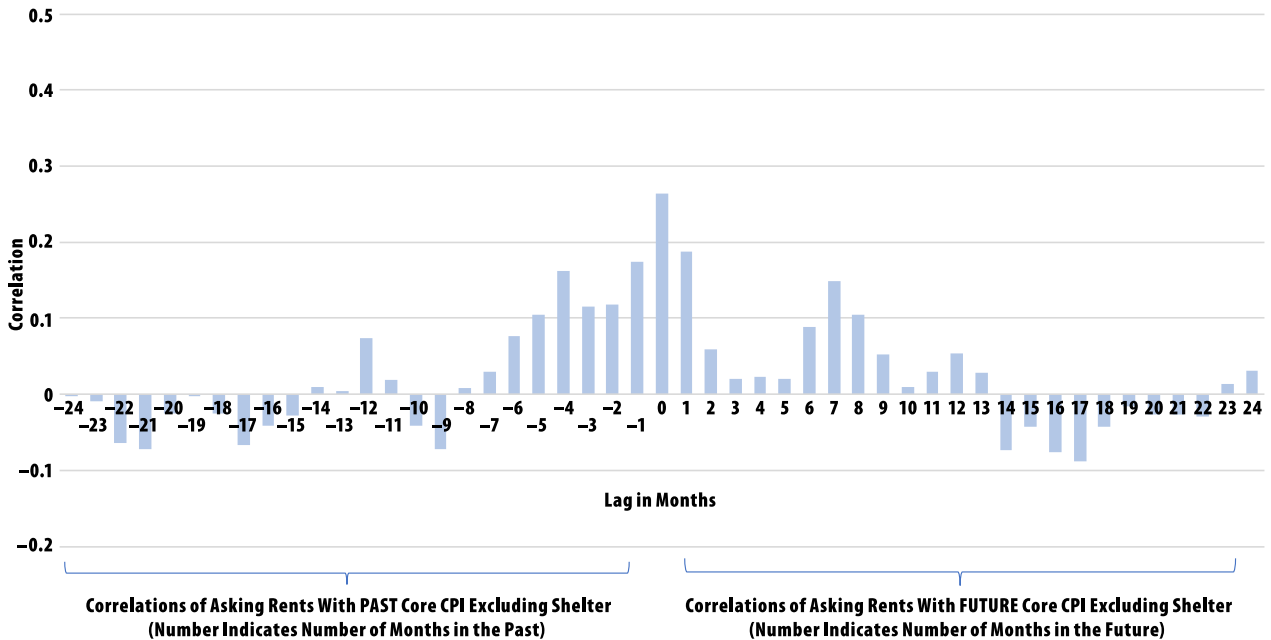
To examine this question, I again use the data on monthly US national asking rents from Yardi Matrix.

In this case, however, I do not want to compare asking rents to shelter CPI—we already know rents lead reported inflation in consumers' cost of shelter. The asking-rents-to-shelter-CPI comparison is an apples-to-apples comparison—they are both different forms of the same thing—so there will be some type of relationship. To see whether real estate can act as an inflation hedge, I actually want an apples-to-oranges comparison: the relevant question is whether inflation outside of real estate, in the general economy, drives rent increases.

To answer this question, I start with reported core CPI (CPI without food and energy) to remove the most volatile components of inflation and also exclude the shelter component of CPI. Next, I compare asking rents to core CPI excluding shelter to see how inflationary pressures outside of real estate might impact rents. Exhibit 3 shows the same type of lead-and-lag correlations as shown previously but between current asking rents and past and future core CPI excluding shelter.

The strongest positive correlations in the exhibit, outside of the contemporaneous (i.e., lag 0) correlation

4. I also look at regressions of asking rents on shelter inflation over the next six months and over the next 18 months. The strongest relationship was with shelter inflation over the next year.

Exhibit 3: Correlation Between Changes in Asking Rents and Core CPI Excluding Shelter, at Leads and Lags

Sources: PREA Research, Yardi Matrix, Bureau of Labor Statistics

of rents and core CPI excluding inflation, are between a month's percentage change in asking rents and core CPI excluding shelter over about the previous six months. This suggests that inflation in the economy in the recent past is a factor that affects residential rents.

To boil the relationship between past inflation and current changes in asking rents down to a single number, I use regression to analyze the relationship between inflation excluding food, energy, and shelter in a month to the change in asking rents over the following six months. The results indicate that 1% higher core inflation excluding shelter in a month is associated with 1.44% higher asking rents over the next six months. So there is a strong pass-through of inflation to tenants in the form of higher rents, with rent increases tending to run above the price increases seen in other parts of the economy within half a year.

Conclusion

Overall, rents drive inflation and inflation drives rents, although the two relationships are somewhat different. Current asking rents have a fairly strong relationship to future reported inflation in shelter costs, spread over a

period of about a year. But rents are also related to past changes in the CPI, specifically to the components other than shelter. The CPI-to-rents relationship is stronger, with rents tending to increase even more than the core CPI, and faster acting, with past inflation excluding shelter related to changes in asking rents over the next six months. It is a complicated dance, with rents and inflation influencing each other in different ways and over different time periods. But the essence is that the relationship is a two-way street—watching rents gives an indication of what inflation will be reported in the future, and watching inflation gives an indication of what may happen with rents. ■

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