

Over the 12 months ending Mar-23, the Consumer Price Index (CPI) increased 5.0%; this was the smallest 12-month increase since the year ending May-21. Energy prices decreased 6.4% since Mar-22. Commodities rose by only 1.53%. The BLS also released its core PCI inflation number for Mar-23. Core CPI rose 5.6% from a year ago and is still above the Federal Reserve’s 2% target (see Table 1).

<b>Table 1. Core CPI and Its Six General Components</b>							
Year-over-Year Percent Changes: Jun-22 to Jan-23							
	<b>CPI CORE</b>	<b>Commodity</b>	<b>Shelter</b>	<b>Transportati</b>	<b>Medical</b>	<b>Recreation</b>	<b>Education</b>
	yoy % chg	yoy % chg	yoy % chg	yoy % chg	yoy % chg	yoy % chg	yoy % chg
2022-06-01	5.88	7.16	5.61	8.83	4.82	4.63	1.94
2022-07-01	5.89	6.98	5.69	9.15	5.09	4.37	1.87
2022-08-01	6.30	7.06	6.24	11.32	5.65	4.11	1.63
2022-09-01	6.64	6.63	6.59	14.60	6.51	4.06	1.12
2022-10-01	6.30	5.08	6.92	15.19	5.45	4.07	1.14
2022-11-01	5.97	3.68	7.12	14.19	4.38	4.75	1.82
2022-12-01	5.70	2.15	7.51	14.58	4.12	5.14	2.00
2023-01-01	5.55	1.44	7.88	14.63	2.99	4.77	2.39
2023-02-01	5.53	1.03	8.10	14.64	2.15	4.96	2.59
2023-03-01	5.60	1.53	8.18	13.88	1.03	4.85	2.97

Sources: BEA, BLS, Commodities exclude food and energy, All services are less energy.

Other sections of the economy, however, are not slowing as fast as commodities. The U.S. rental market is still running too hot. The BLS is trying to measure monthly aggregate personal expenditures on housing. The BLS measures housing costs using its “cost of shelter”.

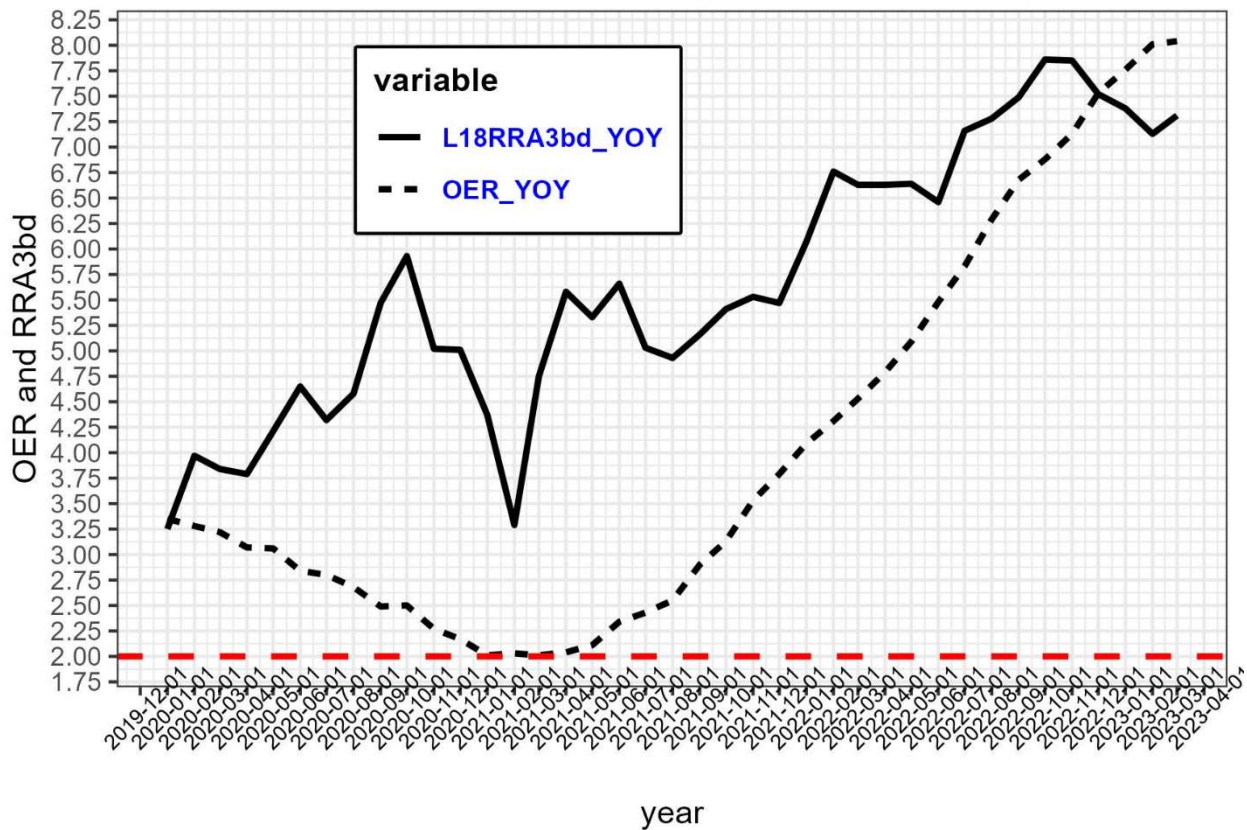
The CPI cost of shelter is essentially the sum of two components: The first, is a measure of the rents paid by apartment tenants in multi-unit structures for their primary residences. This measure is called CPI rent (or tenants’ rent). The second is an estimate of the rent that owner-occupied housing could command called Owners’ Equivalent Rent (OER). These measures tend to move together as the OER of a specific owner-occupied unit is estimated in part by observed actual rents on similar types of properties. Owner equivalent rent, tenant’s rent and combined shelter represent 29.9

percent, 9.6 percent and a total 42 percent of core CPI, respectively. In Table 1, shelter increases by 8.18% in Feb-23.

Going forward, this high growth rate (above the 2% desired by the Federal Reserve) is likely to continue. Charts 1 through 3 show the problem.

**Chart 1. OER & Three Bedroom Rent Appr Lagged 18 Mos.**

Year-Over-Year % Change in OER Follows Lagged Rent Appreciation by about 18 Mos.



Sources: BEA, Altisource.com, CHTR

The dotted line in Chart 1 shows data for OER. The far-right observation is close to the 8.18% for shelter for Feb-23 that we see in Table 1. The solid line is the year-over-year percentage change in rents on three-bedroom properties (RRA3bd) for the 20 CBSAs tracked by the CHTR lagged 18 months. The data -- the average of rents on 3-bedroom properties -- is a closer apples-to-apples match to OER than rent data on apartment units. Yet, we still notice a lag.

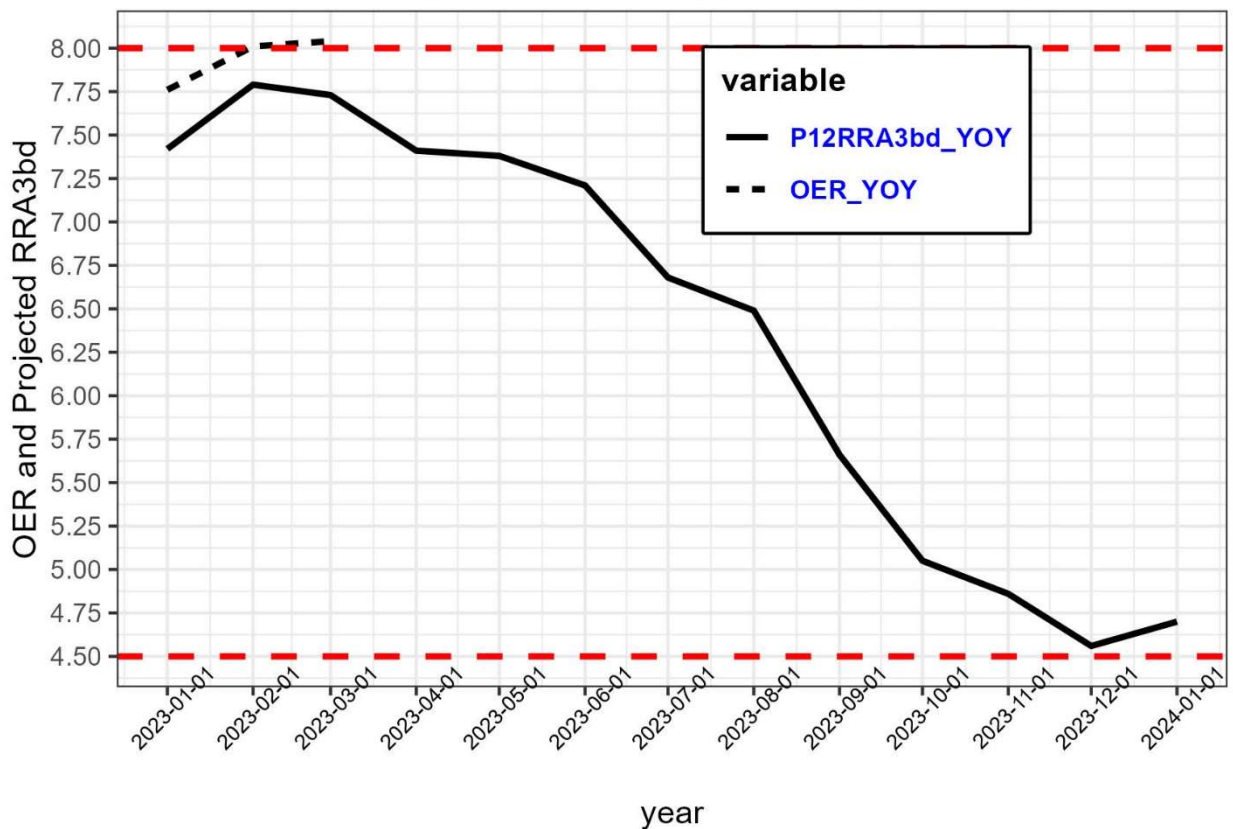
The survey process used by the BLS results in OER being reported with a lag vis-à-vis Altisource.com which collects the average of rents in each city each month. This is true because the BLS takes a massive, nationwide,

rolling sample of housing units, splits them into panels, and then surveys each panel once every six months. The data then must be cleaned, checked and matched to the same property twelve months earlier. They then take an average rent and a one month year-over-year change of that average. The surveying process essentially delays reporting changes in market conditions. If we assume a roughly twelve-month lead between RRA3bd\_YOY and OER we would see the problem facing the Federal Reserve. This is shown in Chart 2.

The solid line is actual data already reported by Altisource.com by taking an average of rents paid on three-bedroom properties. The chart pushes those observations of RRA3bd\_YOY forward 12 months (P12RRA3bd\_YOY). The mean rent of three-bedroom properties from 2023-01 will likely show up in the OER in 2024-01 as 4.75%. This is higher than the Federal Reserve's target.

**Chart 2. OER & Three Bedroom Rent Appr Projected 12 Mos.**

Year-Over-Year % Change in OER Follows Lagged Rent Appreciation by about 12 Mos.

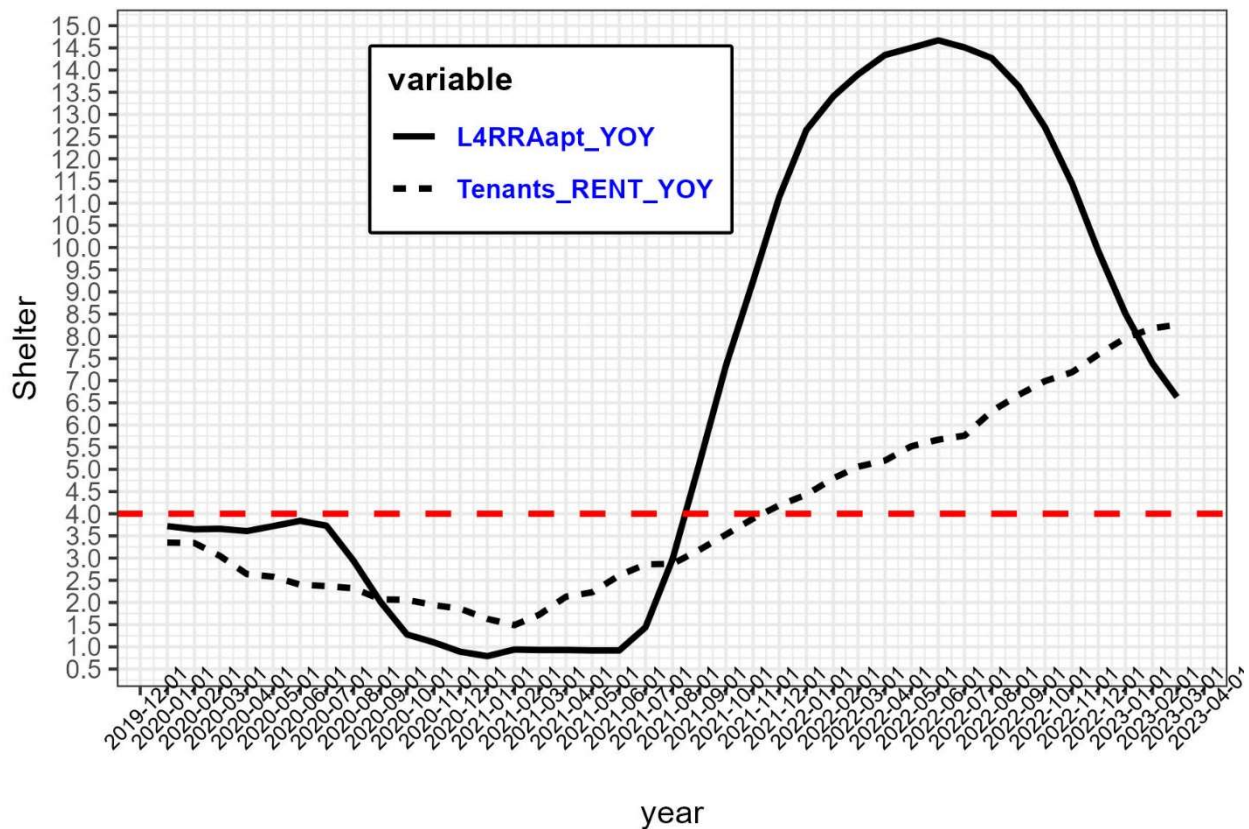


Sources: BEA, Altisource.com, CHTR

Chart 3 shows the relationship between rent appreciation for apartments in multi-unit structures tracked by Zillow.com and the BLS's tenants' rent in CPI.

The lag between the two is much shorter (about 4 months), but the variation is much larger than the lag between OER and RRA3bd. This occurs because of the way that Zillow.com constructs its rent index. Zillow constructs repeat-rent indexes by tracking the prices for rentals on their platforms, treating a unit as rented for the last-listed price as it leaves the platform, and then comparing against previous rental prices for the same unit. It is thus capturing what is called the spot rent (this is the amount renters would pay to sign a new lease today i.e., just rents on newly signed leases).

**Chart 3. Rent on Apts in Multi-unit Lagged 4 mos. & RENT in CPI**  
 Year-Over-Year % Change in Tenants' RENT Follows Lagged Apt Rent Apprec by 4 mo



Sources: BEA, Zillow.com, CHTR

Again, the government data also takes into account existing rentals, while Zillow.com only examine prices for new leases to capture current market conditions. Since rents typically change when leases expire, which tends to happen annually, this can lead to a lag in government data. The point of Chart 3 (and Chart 2) is that CPI Shelter is going to remain high in the second half of 2023.

