

Can Higher Mortgage Rates Cause Rent Inflation? (Section III, Forecasts)

Over the 12 months ending Mar-24, the Consumer Price Index (CPI) increased 3.2%, energy prices increased 2.1% and commodity prices fell by 0.7%. Core CPI rose 3.80% from a year ago (see Table 1) and is still above the Federal Reserve’s 2% target.

Table 1. Core CPI and Its Six General Components							
Year-over-Year Percent Changes: Mar-23 to Mar-24							
	CPI CORE yoy % chg	Commodity yoy % chg	Shelter yoy % chg	Transportation yoy % chg	Medical yoy % chg	Recreation yoy % chg	Education yoy % chg
2023-03-01	5.56	1.53	8.18	13.88	1.03	4.86	2.97
2023-04-01	5.52	2.01	8.11	11.03	0.41	5.00	2.95
2023-05-01	5.33	2.03	8.04	10.18	-0.08	4.55	2.93
2023-06-01	4.86	1.31	7.83	8.23	-0.76	4.31	2.69
2023-07-01	4.71	0.76	7.69	9.03	-1.53	4.06	3.20
2023-08-01	4.41	0.23	7.27	10.35	-2.14	3.55	3.29
2023-09-01	4.14	0.02	7.15	9.05	-2.64	3.88	3.35
2023-10-01	4.02	0.09	6.72	9.23	-1.96	3.18	2.93
2023-11-01	4.02	0.05	6.51	10.06	-0.88	2.49	2.21
2023-12-01	3.91	0.17	6.15	9.68	-0.49	2.71	2.24
2024-01-01	3.87	-0.29	6.04	9.53	0.62	2.77	2.17
2024-02-01	3.76	-0.30	5.74	9.94	1.07	2.09	2.32
2024-03-01	3.80	-0.65	5.65	10.73	2.15	1.86	2.21

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

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 (also called tenants’ rent, or rent of primary residence). 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 5.65% in Mar-24.

The OER is a value calculated by the BLS from a survey and is reported with a significant time lag. Table 2 shows the correlation of OER with lagged mortgage rates during a 16 month window of Nov-22 through Feb-24. During that period of a very tight housing markets, and three years after mortgage rate changes, higher mortgage rates, counter-intuitively, drove rent inflation higher. The positive correlation between mortgage rates and the YOY change in OER in the third year after mortgage rates have increased in Chart 3 is above 90%.

Table 2. National: Correlation Of Lagged Mortgage Rates With OER & Tenants Rent

Mortgage Rates Lead OER & Tenants Rents by many months

Lag	Mort_OER	Mort_TEN_RENT
12-mos	-0.60	-0.69
15-mos	-0.83	-0.90
18-mos	-0.91	-0.94
21-mos	-0.88	-0.91
24-mos	-0.66	-0.73
27-mos	-0.54	-0.57
30-mos	-0.23	-0.08
33-mos	0.19	0.30
36-mos	0.68	0.77
39-mos	0.90	0.95

Sources: OER (BLS),Freddie Mac, CHTR, Data Nov-22 to Feb-24, 16 observations

Since renters do not take out a mortgage, why is there such a strong relationship between mortgage rates and both OER and Tenants Rent? I will first, immediately below, attempt to explain the delayed but very strong relationship between mortgage rates and the two BLS data series using market data from two data venders. At the bottom of this report, I discuss how/why mortgages rates impact rental markets.

Table 3 shows the correlation of rent appreciation on three bedroom single family residential (SFR) properties with mortgage rates at nine different lags. The data on YOY change in rents of SFR 3 bedroom properties in Table 3 comes from Altisource.com. I am using an average rent appreciation on 20 different CBSAs vis-à-vis lagged mortgage rates.

Table 3. National: Correlation Of Lagged Mortgage Rates With SFR 3bd Rent Appreciation

Mortgage rates lead rents on three bedroom SFR properties by many months

InRRA3b	correlation
12-mos	0.52
15-mos	0.50
18-mos	0.70
21-mos	0.46
24-mos	0.29
27-mos	0.22
30-mos	0.48
33-mos	-0.27
36-mos	-0.47
39-mos	-0.66

Sources: OER (BLS),Freddie Mac, CHTR, Data Nov-22 to Feb-24, 16 observations

In the window of time from Nov-22 to Feb-24, the positive correlation between mortgage rates and rent appreciation for three bedroom properties for the 20-CBSAs lagged 18 months in our sample was 70%. Thus, higher mortgage rates in the 18 months before Nov-22 resulted in higher rent appreciation.

Taking the connection between market data and the national OER data reported by the BLS one step further, in Table 4 I shows the correlation of national changes in OER with rents appreciation on three bedroom SFR properties at different lags.

Table 4. Correlations Of SFR Lagged 3 Bedroom Rent Appreciation With OER

Three bedroom rent appreciation (RRA3bd) leads OER by many months

	correlation
9-mos	0.10
12-mos	0.46
15-mos	0.74
18-mos	0.90
21-mos	0.90
24-mos	0.87

Sources: CPI OER (BLS), RRA3bd (Altisource.com) based on a 20 CBSAs avg, CHTR, Nov-22 to Feb-24

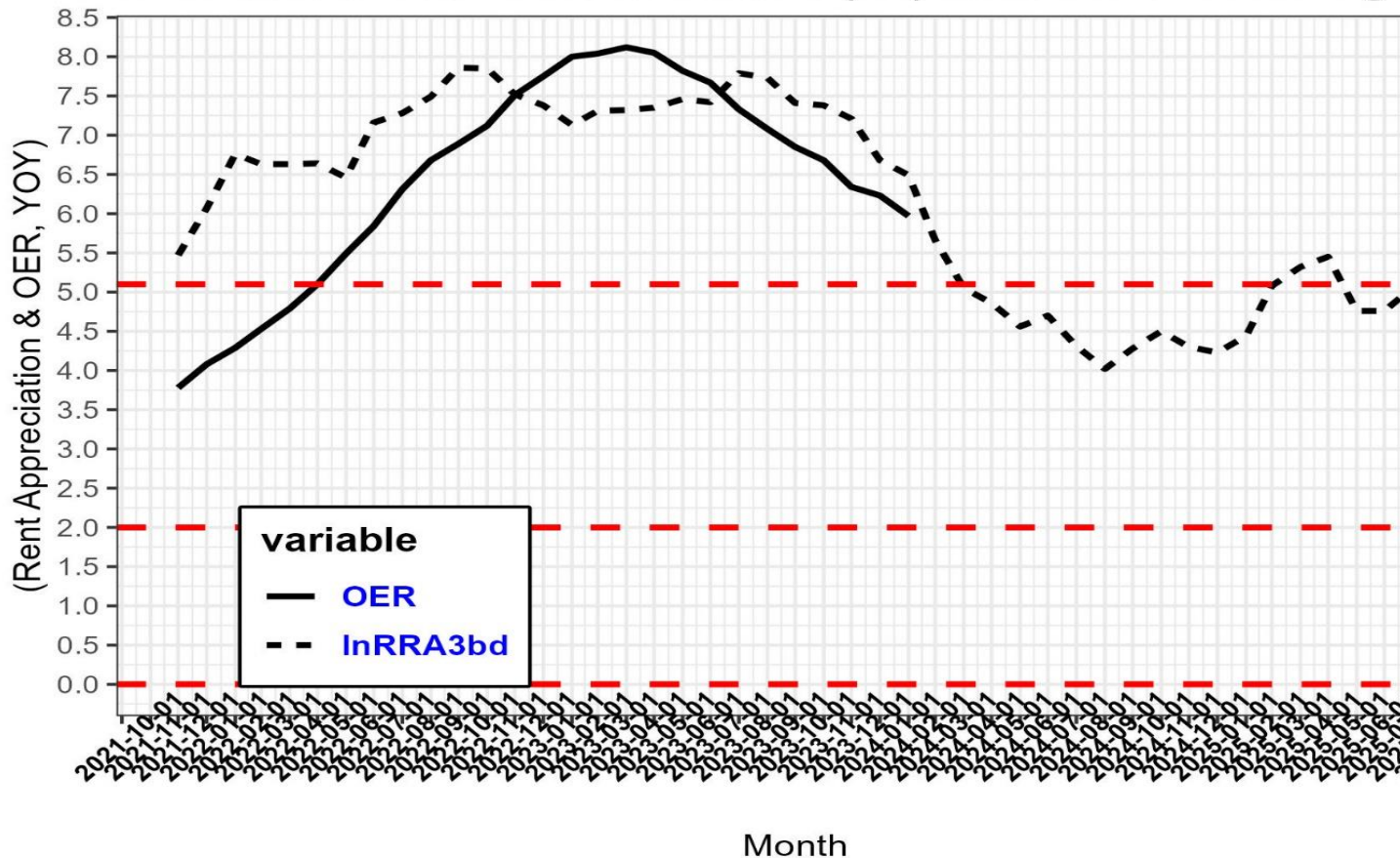
The highest correlation between OER and the 20-CBSA average of rent appreciation for 3 bedroom properties is 0.90 (at lag 18 months). The survey process used by the BLS results in OER being reported with a lag vis-à-vis Altisource.com which collects the median rents in each city each month. This is true 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 take the 18 months for mortgage rate changes to be fully realized by rental markets data for three bedroom properties from Altisource.com (RRA3bd) from Table 3 and then add to it the 18 months from Table 4 for the OER reported by the BLS to realizes this market information we can understand the 36 month lag between mortgage rates and OER in Table 2.

The delay caused by the BLS methodology suggests using an 18 month lag on actual reported rent appreciation by Altisource.com to project OER. We do this in Chart 1P. The dotted line in Chart 1P (a projection) shows data for

OER and a projection of possible future values of OER if it continues to track Altisource’s 3 bedroom rent values. The YOY OER rent reported by BLS for Feb-24 was 5.97% (shelter came in a 5.74% in Table 1). The actual YOY 20-CBSA average rent appreciation reported by Altisource.com for Feb-24 was 5.06%.

Chart 1.P: OER & Rent Appreciation On 3bd SFR Proper
 OER follows rents of three bedroom properties with a 18 mo lag



Sources: Zillow.com, Altisource.com, C

If we project this 5.06% and the other historical RRAs forward 18 months, we get Chart 1P. The dotted 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 far-right observation of the dotted line is the 5.06%. Using historical rent appreciation rates of three bedroom properties from Feb-24 (5.06%) as a measure of OER and also shelter (from Table 1) for Aug-25, we can see the problem facing the Federal Reserve – rent appreciation does not slow down to the 2.0 percent target of the Federal Reserve.

We perform a similar exercise for Tenants Rents using YOY Zillow rent appreciation for apartments of all bedroom sizes in multi-unit structures and Altisource.com data for 1 bedroom apartments. Table 5 shows the correlation between YOY change in Tenants Rent as reported by the BLS and YOY change in the 12-CBSA average rent appreciation for both data series.

Table 5. Correlations Of YOY Lagged Apartment Rent Appreciation With Tenants Rent

Rent Appreciation (RRA) leads Tenants Rent by many months

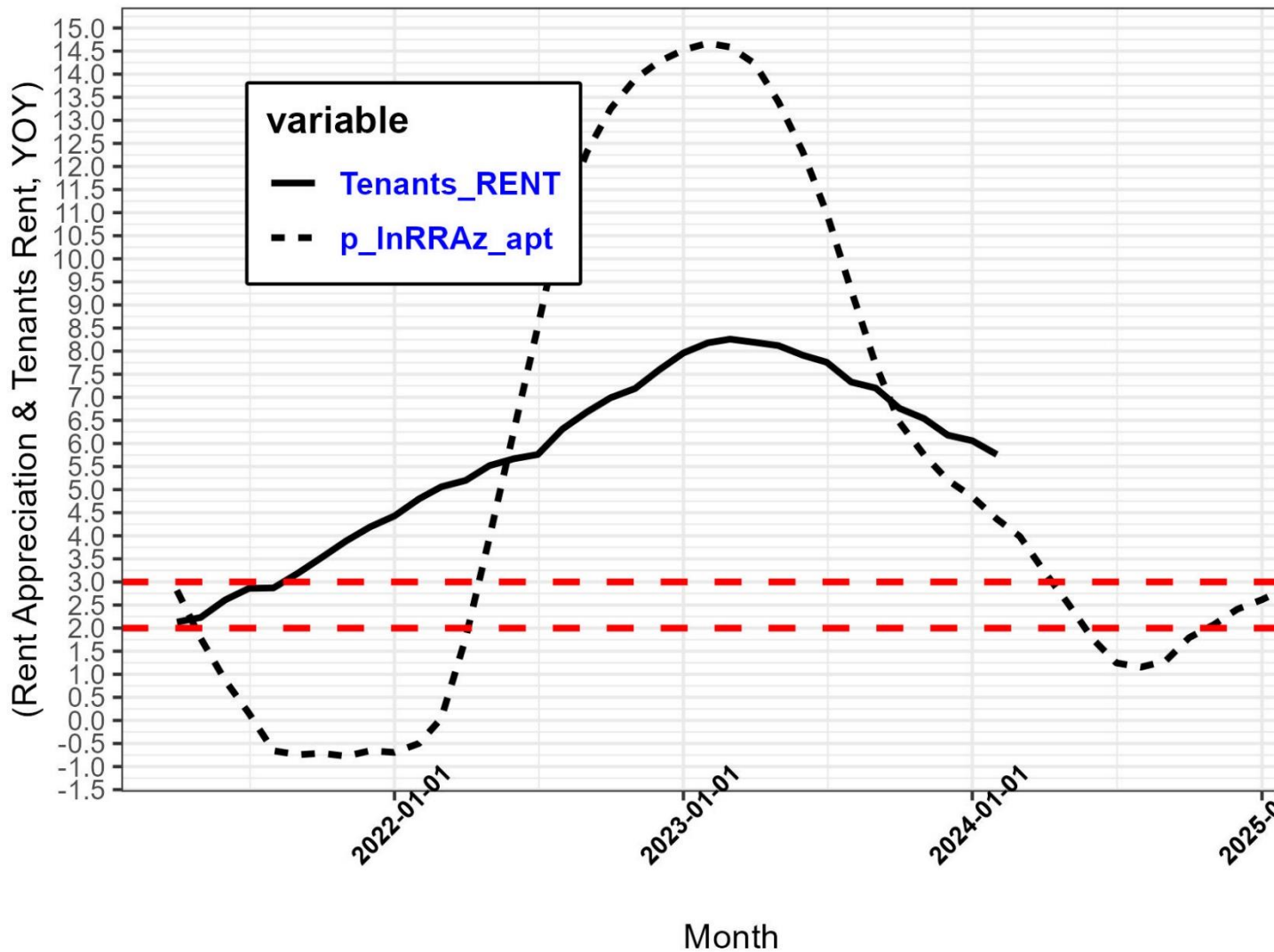
	TENR vs RRA_Apt_all	TENR vs RRA_appt_1bd
9-mos	0.78	0.87
12-mos	0.93	0.91
15-mos	0.22	0.43
18-mos	0.22	-0.43
21-mos	-0.50	-0.82
24-mos	-0.82	-0.96

Sources: CPI Tenants Rent (BLS), RRA1bd (Altisource.com, Apt_1bd) RRAz (Zillow.com, APT_all). Data is based on a 20 CBSAs avg, CHTR, Nov-22 to Feb-24

Both data series with a 12-month lag are good leading indicators of YOY changes in Tenant’s rent. Using this information, Chart 2P shows a forecasted 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 than for OER (here about 12 months using the correlations from Table 5, versus 18 from Table 3), and the variation is less than between OER and RRA3bd.

Rent appreciation has slowed considerably in the last year as new multifamily apartment buildings have come online in several southern cities. Yet the data shows YOY RRAapt has rebounded in the last few months. The point of Chart 1.P (and Chart 2.P) is that CPI Shelter is going to remain high in the second half of 2024.

Chart 2.Proj: Tenants Rent & Apt Rent Change in Multi-
 Tenants Rent follows rents of Apartments with a 12 month lag



Sources: Zillow.com and C

Why higher interest rates might cause rent appreciation to accelerate 36 months later?

In a recent paper, Dias and Duarte (2019) find that, in contrast to house prices, housing rents increase after a contractionary monetary policy shock. This finding was corroborated by Haidorfer (2024). Dias and Duarte conjecture that it is reasonable to expect that all nominal prices of goods and services (rents included) should decline (or at least not increase) after a

contractionary monetary policy shock. However, this is not what they find. They posit that monetary policy affects the housing tenure decisions — own versus rent. They argue “If both the supply of housing for rental and of housing for ownership are inelastic in the short run, and there is limited convertibility between homes for sale and homes for rent, when interest rates go up, mortgage rates rise, and the cost of homeownership increases. As homeownership costs rise, the demand for rental housing also increases, and, as a result, housing rents rise.” Table 2 (page 2) shows this pattern -- following higher mortgage rates 18 months earlier, rent appreciation quickens. At that subsequent point, there is higher demand for rental properties. Residential construction can increase the supply of apartments in the near short-run, but this is not true for single family residential properties. In most major cities in the U.S., the available supply of buildable land has nearly peaked. The supply of SFR properties is very inelastic.

This larger variation in apartment rents that occurred during the pandemic, (Chart 1.p versus 2.p) occurred for two reasons: (1) The renter population experienced high turnover. Landlords were able to raise the rents on new tenants moving into an apartments. (2) Many apartment renters do not have signed leases. Landlords were able to charge more for the same apartment and renters had few choices.

Bibliography

Dias, Daniel A. and João B. Duarte (2019) “Monetary Policy, Housing Rents and Inflation Dynamics”. International Finance Discussion Papers 1248.

Haidorfer, Anton (2024) “The Dynamic Impact of Monetary Policy Over Short Horizons on Local Rental Markets”, Submitted to the AREUEA 2014 June conference.