

2023 Multifamily Outlook

December 2022







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Multifamily occupancies and rent growth are coming down from record highs while rapidly rising interest rates and volatility in the capital markets have led to a slowdown in multifamily lending. In the higher interest rate environment, cap rate spreads are compressed well below historical average levels. As the Federal Reserve (Fed) continues to combat inflation by raising interest rates, the result is a slowing economy that will impact all sectors, including the housing market. However, as the economy and market stabilize, the relative strength of the multifamily sector will again become evident, certainly in the middle to longer term. And in the shorter term, indicators suggest that the multifamily market is expected to see healthy growth by the end of 2023.

- Rent growth has moderated, with some data providers now indicating rents are declining on a monthly basis, but growth for 2022 is expected to end the year between 6-8% year over year (YOY).
- Some data sources indicate vacancy rates have been increasing much of the year, while others show very little change. We expect to see vacancy rates trend up slightly by the end of 2022.
- For 2023 we expect multifamily fundamentals to start the year slowly but rebound in the second half of the year. We project gross income to increase 3.5% and the vacancy rate to rise modestly to 5.1%.
- Multifamily construction levels remain extremely high, which could put additional pressure on some markets.
- In 2023, we expect the best performing markets to be predominately smaller southwestern and Florida markets, while our bottom performing markets are a geographically diverse mix of small and large markets, many of which expect to see high levels of new supply.
- Throughout 2022, the 10-year Treasury rate has been increasing and volatile, while cap rates have held relatively stable, which is causing cap rate spreads to compress. This is putting upward pressure on cap rates, which would put downward pressure on valuations.
- Given broad economic uncertainty and the volatile Treasury rate environment, we expect origination volume in 2022 to fall about 5.5% to a total of \$460 billion, with 2023 seeing a further decline of 4-5% to \$440 billion.

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Multifamily at an Inflection Point

Economic conditions at the end of 2022 slowed significantly compared with earlier in the year. As expected, the multifamily market started to moderate in the second half of the year, reaching an inflection point as the market slowed from the record-setting performance earlier in 2022. While the apartment market typically slows during the winter months — seen by flat to slightly negative monthly rent growth and decreasing occupancy rates — we expect the seasonality could be more pronounced in 2022-2023 than in prior years. We currently forecast growth returning to the multifamily market later in 2023, which could support rent growth, and vacancy rates near historical averages by the end of 2023. The labor market is one of the key drivers of our forecast, which is expected to slow in 2023 but remain healthy enough to create housing demand later in the year. The strong rent growth and low vacancy rates seen over the past 12 to 18 months should provide a robust financial buffer if multifamily performance slows in the short term.

The rapid rise in interest rates and the associated volatility have thrown the multifamily investment market into a period of price discovery, where sellers and buyers must agree on the value of multifamily assets in this new higher interest rate environment. Prolonged higher interest rates will increase cap rates, putting downward pressure on property valuation. We project total origination volume to decline in 2022 and 2023 due to lower asset valuation, decreased demand in response to market volatility and broad economic uncertainty. However, multifamily is still well positioned as a preferred asset class by investors due to favorable demographics and a robust labor market leading to household formations.

Continued Economic Uncertainty

Gross domestic product (GDP) contracted during both the first and second quarters of 2022 at -1.6% and -0.6%, respectively. However, despite the traditional simplistic definition of a recession as two quarters of negative GDP growth, the National Bureau of Economic Research (NBER) has not determined that the United States fell into a recession during the first half of the year. This is likely attributable to the strong labor market, which is one of the key factors in determining if a recession has occurred according to NBER. During the third quarter of 2022, U.S. GDP rebounded and grew at an annual rate of 2.6%, equal to the 2019 average.

As the economy slowed in 2022 and inflation rose, consumer confidence dropped. The Consumer Sentiment Index (CSI), which the University of Michigan has been publishing since the early 1950s, is currently at 54.7 as of November 2022, up from the all-time low of 50.0 reported in June 2022. Meanwhile, the Consumer Confidence Index (CCI) is also showing a similar pattern, although not near historically low levels. The CCI fell from 107.8 in September to 102.5 in October after hitting a cyclical low of 95.7 in June. Both measures note that after several months of increasing sentiment, the indexes declined again indicating any gain in sentiment was weak and additional uncertainty in economic conditions persists. These low index levels indicate weaker economic growth in the near future.

As of November 2022, Moody's Analytics reports that there is about a 55% chance of a recession before the end of 2023, which is similar to their prediction from midyear. Moody's believes if a recession does occur, it will likely be mild and relatively short lived and expected to begin toward the middle of 2023. The driving forces behind the current economic uncertainty comes from inflation remaining stubbornly high throughout 2022 despite the Federal

¹ The Consumer Confidence Index (CCI) and the Consumer Sentiment Index (CSI) both survey consumers on their attitudes and expectations of economic and personal consumption. The survey sizes and timing can differ. More information can be found https://www.conference-board.org/topics/consumer-confidence and http://www.sca.isr.umich.edu/



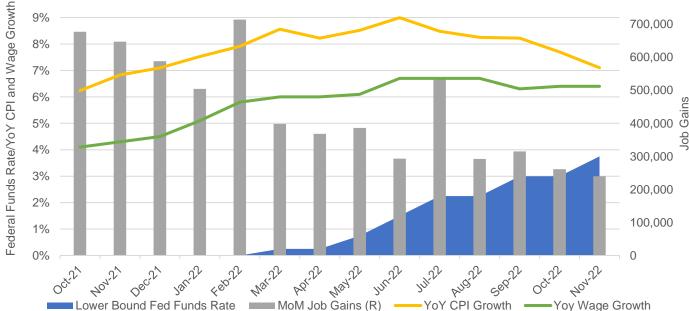
Open Market Committees' (FOMC) ongoing attempt to stifle it by raising the federal funds rate. Inflation, measured by CPI, appears to have peaked in June of 2022 at 9% YOY growth, the highest rate in more than 40 years. Since then, inflation has moderated slightly and as of November 2022, stands at 7.1% over the past year. In response to the elevated inflation level, the FOMC has raised the federal funds rate with four 75 basis point (bps) rate increases since May of this year and a 50-bps increase in December 2022, with an indicated range of 4.25% to 4.50%.

As the federal funds rate has increased so has the 10-year Treasury rate, although the growth has been much more volatile. Since the beginning of 2022, the 10-year Treasury rate has increased more than 230 bps and, as of November, averaged 3.89%. In addition, the increase in rates has been extremely volatile contributing to the overall market disruption.

Given the recent rate hikes, the job market has been slowing down but is still continuing to grow at a healthy pace. Since the 75-bps rate hikes started in May, monthly job growth has slowed from 386,000 newly added jobs down to 240,000 in November, seen in Exhibit 1. This is well above the pre-pandemic average in 2019 of 164,000 monthly jobs. As a result, the unemployment rate has been consistently below 4% since early in 2022, and as of November sits at 3.7% — just 20 bps higher than the pre-pandemic low of 3.5%. The labor force participation rate continues to dawdle at 62.1% as of November 2022, which is 130 bps below the pre-pandemic high in February 2020. However, the aging population means that the labor force participation rate is in an overall state of decline. The tight labor market throughout most of 2022 has led to a sharp increase in wages, which are up 6.4% over the past year as of November 2022 compared with 3.6% in 2019.

10% 800,000 9% 8%

Exhibit 1: Federal Funds Rate, Monthly Job Gains, CPI Growth and Annual Wage Growth



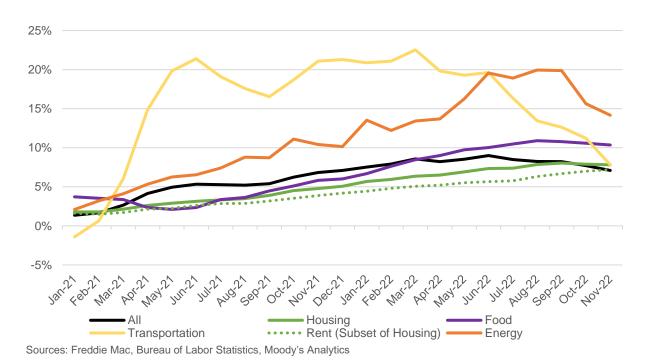
Sources: Moody's Analytics, St. Louis Fed, Freddie Mac



While announced layoffs continue to track below the pre-pandemic average,² weekly unemployment claims remain in line with pre-recession averages, even if they are rising from extremely low levels observed in the second half of 2021. The labor market has so far remained strong, but some cracks are beginning to show as certain businesses, mainly in the information/technology industry, alter their staff. Although the severity is not anticipated to be profound, there may be some spillover effects into related, supporting businesses. Overall, the unemployment rate has increased slightly and job creation slowed, suggesting that the labor market has changed tone, consistent with the Fed's desire to slow the economy.

Although YOY inflation rates are coming down from their peak earlier in the year, it is still at its highest level since the 1980s and demand for many goods outpaces supply. As shown in Exhibit 2, the overall rate of inflation is slowing, driven by steep declines in the growth rates of energy and transportation, which includes new and used automobiles, and flattening of the growth rate for food. The growth rate of housing has flattened in the prior few months, just below 8% YOY as of October 2022, while the growth rate of rent³ (a subset of housing costs), is still increasing and is at 7.2% YOY compared with 4.4% in January of 2022. We expect this trend to continue well into 2023 as rent growth, as reported by the CPI, typically takes six to 12 months to be fully realized in the index. Looking forward, Moody's Analytics projects that inflation will continue to moderate for the rest of 2022 and end the year at 7.3% YOY growth. During 2023, inflation growth is expected to continue to moderate and by the second half of the year, inflation is projected to slow to about 3-4%, according to Moody's.

Exhibit 2: YOY Growth Rates of Select Components of Inflation



² As reported in the Challenger, Gray & Christmas Inc.: Job Cut Report

³ This growth rate generally lags the headline rent growth rates discussed elsewhere in the report due to the collection methodology.



Higher Mortgage Rates Impacting the Residential Housing Market

As expected, the rapid rise in mortgage rates has led to a slowing of home prices. The median price of a home declined -1.8% during the third quarter of 2022 — the first quarterly decline since the outbreak of the pandemic — as seen in Exhibit 3. Despite that slight decline, the median price of a home has increased by nearly \$100,000, or 34%, during that time. As interest rates have risen rapidly this year, mortgage rates have exploded and are now more than double the rate at the end of 2021. As of the third quarter 2022, mortgage rates are up 320 bps from early 2020 and up nearly 400 bps from the low seen in late 2020. The rapid rise in home costs combined with much higher mortgage rates have led to a near doubling of the monthly principal and interest (P&I) payment for a median-priced home since early 2020, an increase of more than \$1,150 per month.

Exhibit 3: Monthly P&I Costs for the Median-Sales Price of a Home

	Mortgage Rate	Median Sales Price	Amount Financed	Monthly P&I	YOY Change	YOY Wage Growth
1Q 2020	3.50%	\$287,048	\$278,437	\$1,250	0.9%	3.5%
2Q 2020	3.13%	\$275,980	\$267,700	\$1,147	-4.0%	3.8%
3Q 2020	2.90%	\$312,783	\$303,399	\$1,263	4.5%	3.5%
4Q 2020	2.67%	\$316,104	\$306,621	\$1,239	-1.5%	3.4%
1Q 2021	3.17%	\$333,620	\$323,612	\$1,394	11.1%	3.4%
2Q 2021	3.02%	\$340,190	\$329,985	\$1,395	24.1%	3.2%
3Q 2021	3.01%	\$354,264	\$343,636	\$1,451	15.2%	4.2%
4Q 2021	3.11%	\$367,280	\$356,262	\$1,523	22.8%	4.5%
1Q 2022	4.67%	\$386,405	\$374,813	\$1,937	39.4%	6.0%
2Q 2022	5.70%	\$391,922	\$380,165	\$2,206	54.9%	6.7%
3Q 2022	6.70%	\$384,928	\$373,380	\$2,409	65.6%	6.3%
Change Since 1Q 20	3.20%	\$97,880	\$94,943	\$1,159	92.7%	11.8%

Sources: Freddie Mac, National Association of Realtors

Note: For each period, assume a median-priced home, a 30-year mortgage and a 3% down payment.

As mortgage rates have climbed, many would-be buyers are either being priced out of the market or waiting for a more affordable time to buy. According to the National Association of Realtors (NAR), the number of months of supply for existing sales has increased from 1.5 months in January of 2022 to 3.2 months in October, signaling a slowing in the for-sale housing market. Despite the slowdown, the months of inventory continues to run well below the long-run average of 6.7 months from 1982-2019. Along with the rapid rise in monthly P&I costs, a higher median home price requires a higher down payment, which has left many would-be buyers out of the ownership market.



Despite the very strong rent growth in the past 18 months, over that time the cost-to-own growth rate has increased 3.5 times more than the growth rate for the cost to rent, shown in Exhibit 4. In 2021, the cost to own grew 19.2% over the prior year, while rent grew 12%. Through the first three quarters of 2022, the cost to own grew an additional 40.3%, compared with 7.2% in rent growth. In a normal economic environment, such as from 2014-2017, we'd expect the cost to own and rent growth to increase at a similar pace. The high cost to own won't create additional demand for rental housing, but could prolong it, and if it keeps would-be-buyers in the rental market, that could limit the amount of supply of rental units, slowing the formation of new renter households.

45% 350 40% 300 35% **Cumulative Growth Indexed (2012** 30% 250 Annual Growth 25% 20% 200 15% 10% 150 5% 0% 100 -5% -10% 50 2012 2017 Annual Cost to Own (LHS) Annual Cost to Rent (LHS) Cumulative Own (RHS) — Cumulative Rent (RHS)

Exhibit 4: Monthly P&I Costs for a Median-Priced Home

Sources: Freddie Mac, Census Bureau, Moody's Analytics, Reis

Note: 2022 YTD is as of third quarter. RHS stands for the right-hand side and LHS stands for left-hand side.

Multifamily Performance — The Tide is Turning

The strength of the apartment market in mid- to late 2021 through mid-2022 was remarkable, with a majority of markets seeing more rent growth during that time than the five years leading up to 2020. However, near the end of 2022, we believe the market has reached an inflection point. RealPage indicates rent growth was flat in September and slightly negative in October, while vacancy rates have been increasing since the beginning of the year. Meanwhile, Reis reported rents continued to grow through September and vacancy rates have been declining throughout the year.

Using RealPage data, there are several factors that contribute to the recent slowdown being reported. Annual demand, as shown in Exhibit 5, has been declining from the record-breaking peak seen during the first quarter of

⁴ Assuming a 20% down payment and a 1% property tax. The analysis does not consider all potential costs, such as the opportunity cost of purchasing a home, maintenance costs or tax implications of homeownership. Because we're simply looking at the rate of growth and not absolute cost, the omission of these factors does not materially impact the results.



2022. Since then, quarterly demand has been negative, totaling -142,000 over the second and third quarters combined, causing annual demand to fall sharply, totaling just 78,000 units over the past 12 months. This slowdown in demand is not specific to rental housing. According to Census data, all household formations (including ownership and rental) have slowed over the past year. For the 12 months ending in September of 2022, about 1.28 million households were formed, which is about 27% less than the 1.75 million formed during the year ended in September 2021, and about 24% less than the September 2020 total. This can be contributed to the growing economic uncertainty and continued low consumer confidence. Less confidence in the economic wellbeing translates into fewer households being formed. Those decisions to move apartments will be muted if consumers' outlook on the economy is lackluster.

800,000 60% 700.000 58% 56% 600,000 Renewal Conversion 54% 500,000 Annual Demand 52% 400,000 300,000 50% 200,000 48% 100,000 46% 44% Annual Demand ----Renewal Conversion

Exhibit 5: Annual Multifamily Absorptions and Renewal Rate

Sources: RealPage, Freddie Mac

While demand has slowed, renewal rates remain elevated, although they have been declining from the record level seen during the first quarter of 2022. As of the third quarter of 2022, 55.7% of tenants renewed their leases, above the long-term average of 50.1% going back to 2003, according to RealPage. This can partially be attributed to the higher new-lease rental rates compared with renewal rates since the middle of 2021. Although, as of September, that trend is slowing, and the two growth rates were essentially equal. The higher-than-average renewal rate indicates that we're not at a stage of people doubling up due to economic pressures, although that is the typical pattern experienced during recessions.

Through October of 2022, occupancy is down 220 bps nationally year to date (YTD), while on an individual market basis, occupancy has declined between 50 to 370 bps, per RealPage. However, as 2021 came to an end, occupancy levels were exceptionally high, and despite the recent declines, a vast majority of markets remain above their long-term occupancy rate as of October. Due to the relatively tight occupancy rates, rent growth did not respond immediately to occupancy drops until September and October.



The recent slowdown in monthly rent growth is in line with past year's seasonality, as rents typically contract in the last few months of the year. Exhibit 6 shows monthly rent growth, indexed to January for each year going back to 2017. In the three years leading up to the pandemic, 2017-2019, rent growth ceased as of August and started to flatten or decline in September through December. Leasing typically slows down at that time of year as less households are formed, causing occupancy to decline and rent growth to contract slightly. As of October of 2022, rent growth fell -0.5% over the month, while the average monthly decline in October from 2017-2019 was -0.3%. The slowdown starting at the end of 2022 could be a bit more pronounced than seen in the years leading up to the pandemic, but the rent growth through August outpaced historical growth, giving the rental market some cushion to weather a potential decline in rents for the rest of 2022. We do not expect demand during the fourth quarter of 2022 and first quarter of 2023 to be strong, so the second and third quarters of 2023 will be vitally important for the overall performance of the multifamily market in 2023.

120 115 110 Rent Indexed 105 100 95 90 Jan Feb Mar Apr May Jun Aug Sep Oct Nov Dec **-**2020 **-**2018 **-**-**—**2019 **—** -2021

Exhibit 6: Monthly Effective Rent Change

Sources: RealPage, Freddie Mac

Looking at metro-level rent growth in the past three months, as of October 2022, RealPage reports just under half of the top 50 markets saw rent decline. Some of the hottest markets during the pandemic are now seeing the steepest rent declines. Markets like Phoenix, Las Vegas and Austin have all seen rents fall between -2.0% to -2.2% in the past three months. The better performing markets were generally smaller Midwestern markets passed over by the pandemic boom, along with gateway markets that saw sharp, deep declines during the pandemic and were late to recover.

When you combine the change in rent with the change in occupancy, gross income growth nationally is down — 0.6% for the three months ending October 2022 — but is up 5.8% YTD in 2022. By market, nearly two-thirds of the top 50 markets saw negative income growth for the three months ending October 2022, as shown in Exhibit 7. But YTD, all but two markets are seeing positive income growth for the year. Phoenix and Las Vegas are the two areas experiencing negative income growth YTD, which saw some of the highest rental growth rates during 2021.



16% 14% 12% 10% 8% 6% 4% 2% 0% -2% -4% Colorado Springs Raleigh Seattle Oakland Orlando Los Angeles t Palm Beach Boston Dallas Tacoma San Francisco Charlotte Ft. Worth San Diego Albuquerque Chicago Orange County Greensboro Atlanta United States Cleveland Knoxville Norfolk ndianapolis Baltimore New Orleans Houston Pittsburgh **Minneapolis** Philadelphia Washington DC Portland Lauderdale Lake City Memphis Tampa San Antonio Oklahoma City Denver Sacramento Riverside Nashville Jacksonville West ■ Jan-Jul 2022 Aug-Oct 2022

Exhibit 7: Gross Income Change January to July 2022 Compared with August to October 2022

Sources: RealPage, Freddie Mac

Note: Red bar indicates metros with negative YTD gross income growth as of October 2022.

Typically, commercial real estate, and multifamily in particular, are seen as a hedge against rising inflation, because rents are reset annually and can adjust to higher inflation. However, in 2022, rent growth has been slowing as inflation has been increasing. Expense costs have been rising at more than 5% annually since 2019, and more than 6% annually in 2021 and through the first three quarters of 2022, according to RealPage. With rents up about 9% through October of 2022, they are currenting outpacing expense growth. While some segments of expenses may remain elevated due to high inflation and wage growth, traditionally, expenses move in tandem with rents.

As demand spiked for multifamily housing in 2021, comparatively few new units were being delivered to the market to meet the onslaught of demand. In response, multifamily developers issued the highest level of new multifamily permits since 1985, with an annual pace of about 635,000 units, according to Census Bureau data shown in Exhibit 8. The rate of permitting in 2022 is nearly double the annual average of 357,000 units going back to 1980. Starts have been elevated in 2022 as well, with more than 531,000 annualized units started as of September — also the highest level since the 1980s. However, completions through the first three quarters of the year total an annualized 343,000 units, down about 6% from completions levels in 2021 and near the average number of deliveries over the past five years. The sagging rate of completions, even as demand surged earlier in the year, indicates that supply chain delays and construction labor shortages continue to plague the completion of new apartment units.



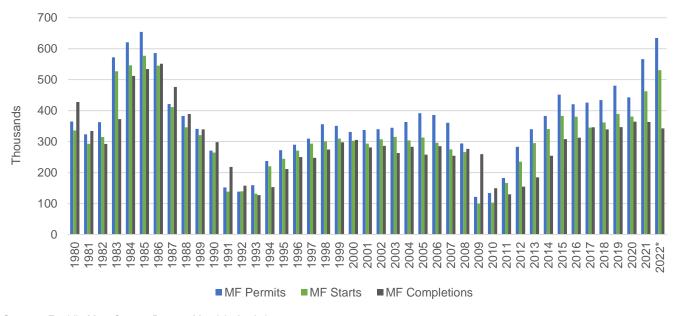


Exhibit 8: Multifamily Permits, Starts and Completions (5+ Units)

Sources: Freddie Mac, Census Bureau, Moody's Analytics

*Through 3Q 2022

Multifamily Fundamentals in 2023

We expect growth in multifamily fundamentals to decelerate through the first few months of 2023 but demand for housing, including multifamily, is expected to return later in the year, as long as the labor market doesn't fall into recessionary territory. Our baseline forecasts show an increase in vacancy rates, up to 5.1% by year-end 2023, a 30-bps increase from where 2022 is expected to end. Meanwhile, we forecast rents to grow by a modest 3.9%. To put this into perspective, the average vacancy rate going back to 1980 is 5.5%, per Reis. Vacancy rates increased to 5.3% in 2020 due to the pandemic impacts but otherwise had not been above 5% since 2011. Meanwhile, Reis reports rents have grown on average 3.9% during that same time period. Between the Great Financial Crisis and the pandemic, rent growth ranged from 3.6% to 6.1% (2012-2019). Our forecast of 3.9% puts it near the lower end of that range but is considered healthy returns. Gross income is expected to grow by 3.5% — near the rate of inflation expected for next year⁵.

These forecasts rely on positive employment and household income growth, along with lower inflation. However, home prices are expected to decline in 2023, and data providers indicate higher levels of new multifamily supply will enter the market at a time when demand may slow. We think that one of the biggest risks to the multifamily market's performance in 2023 is the state of the labor market throughout next year. If the Fed achieves the soft landing without a large impact to the job market, consumer confidence will return and household formations will rebound, but most likely not until mid-2023. However, the chance of a recession remains elevated and will be throughout 2023.

⁵ According to Moody's Analytics



Looking at past, mild economic recessions, such as in 1991 and 2002, employment declined by -1.0% and -1.1%, respectively. During that time, gross income growth, according to Reis, slowed but remained positive in 1991 at 2.2% and slightly negative in 2002 at -0.6%. Another compounding factor is the level of new supply expected to enter the market in 2023, but the current vacancy rate is lower than in 1991 and 2002, providing some cushion to absorb the new supply. If a recession happens, Moody's expects it to be milder, which would point to potential similar patterns in gross income growth as we've seen during past milder recessions.

Exhibit 9: Employment Growth, Vacancy Rate and Gross Income Growth, Historic and Forecast

Sources: Reis for historic data, Freddie Mac projections for 2022 and 2023 are represented by the dashed lines

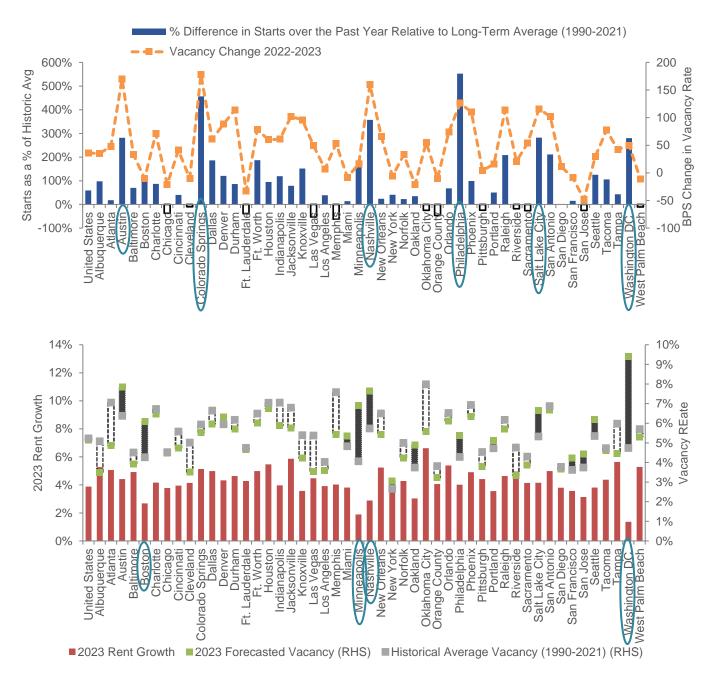
At the metro level in 2023, the areas with the highest levels of new supply are most likely to have the largest increases in vacancy rates in 2023. Exhibit 10 shows construction starts over the past year, as of third quarter 2022, compared with the historical average in each metro, from 1990-2021, represented in the blue bar. Layered on top is our expected change in vacancy rates in 2023. Areas such as Austin, Colorado Springs, Nashville, Philadelphia, Salt Lake City and Washington, D.C. are expected to see the highest levels of new supply, which will put upward pressure on vacancy rates next year.

Exhibit 11 enhances the metro-level analysis by layering on our expected rent growth in 2023 along with vacancy rates in 2023 relative to their historical average (per Reis from 1990-2021). Areas with vacancy rates above their long-term average are expected to see lower rent growth in 2023, such as the district, Minneapolis, Boston and Nashville. Many of the metros highlighted in Exhibit 10 are expecting 2023 vacancy rates above their long-term average, but with a mix of rent growth expectations. For example, Austin, Colorado Springs, Philadelphia and Salt Lake City are still expected to see decent rent growth for 2023 despite the higher supply and vacancy rates. Alternatively, the district and Nashville are expecting to see relatively lower rent growth in 2023 given the high level of new supply and higher vacancy rates.

However, most major metros are expected to see vacancy rates in 2023 remain below their long-term average despite increases throughout the year. Likewise, new supply is relatively low in several of those markets, allowing for greater rent increases in 2023, such as Oklahoma City, Tampa, Albuquerque, West Palm Beach and Fort Lauderdale.



Exhibit 10: Starts Compared with Long-Term Average and Vacancy Rate Change Exhibit 11: Forecasted Rent Growth and Vacancy Rate Compared with Long-Term Average



Sources (for both Exhibits 10 and 11): Reis, Census Bureau, Moody's Analytics, Freddie Mac

Combining our projected rent and vacancy rate expectations by metro, we get our top and bottom performers for 2023. Florida markets make up half of the top 10 markets, along with some smaller Southwest markets in Oklahoma, Houston and Riverside. The larger Southwest markets such as Phoenix and Las Vegas, two areas that saw very robust growth in 2021, are no longer in the top 10. However, it is important to note they did not drop



to the bottom 10 and instead are expected to be in the middle of the pack. Many Florida markets remain in the top 10, but with lower growth in 2023 than expected in 2022.

Our analysis indicates the income growth in the top 10 markets will mostly be driven by historically low vacancy rates, strong household income growth and minimal new supply compared with the historical average⁶. Despite vacancy rates expected to increase modestly in 2023, all of the top 10 markets are starting the year well below their historical average, except for Fort Lauderdale. At the same time, the employment growth rate in every top 10 market except Albuquerque is expected to be above the national average, with new supply below the historical average in all areas except Houston and Orlando, according to Moody's Analytics.

Conversely, our expected bottom 10 markets are mostly located in the Midwest or Mid-Atlantic. Many of these markets are expecting to see a large amount of new supply come online in areas where the vacancy rate is already above the historical average. We expect several of the metros, such as Austin, Knoxville, Richmond and Philadelphia, to see modest rent growth (3.6% to 4.4%) but large increases in vacancy rates (up 100-170 bps), which will lower their gross income growth projections for 2023. In general, employment and household income growth are expected to lag or match the national average in these metros, per Moody's Analytics.

Exhibit 12: Top and Bottom 10 Metros by Gross Income Growth for 2023

Metropolitan Area Top 10	2023 Annualized Growth in Gross Income	2023 Vacancy Rate	Metropolitan Area Bottom 10	2023 Annualized Growth in Gross Income	2023 Vacancy Rate
Oklahoma City	6.0%	5.6%	Washington, D.C Core	0.8%	9.4%
West Palm Beach	5.4%	5.3%	Nashville	1.1%	7.6%
Tulsa	5.4%	5.5%	Minneapolis	1.7%	6.9%
Tampa	5.2%	4.5%	New York – Outer	2.3%	6.1%
Albuquerque	4.9%	3.5%	Austin	2.5%	7.8%
Houston	4.8%	6.8%	Knoxville	2.5%	4.2%
Jacksonville	4.7%	5.8%	Fairfield County, CT	2.6%	6.8%
Riverside	4.7%	3.3%	Richmond	2.6%	6.0%
Fort Lauderdale	4.6%	4.7%	Kansas City	2.6%	6.1%
Orlando	4.6%	6.1%	Philadelphia	2.7%	5.4%
United States	3.5%	5.1%			

Source: Freddie Mac

Note: New York - Outer encompasses mostly Northern New Jersey.

⁶ Historical average vacancy rate is calculated per Reis as of 1990-2021, where data is available.



Increased Pressure on Multifamily Cap Rates and Valuations

The rising interest rate environment directly impacts multifamily investors through the cost of debt and valuations. However, the timing of their impacts differ. The rising interest rates impact the cost of debt almost immediately but the impact on valuations take longer to materialize. As of November, the 10-year Treasury rate is averaging 3.89%, up from around 1.50% at the start of the year. Daily and weekly swings have been anywhere from plus or minus 0.25% to upward of +0.5% and down -0.4%, respectively. These swings create volatility in the pricing of assets as rates can change very quickly on investors causing the price discovery period to be prolonged.

Throughout the first three quarters of 2022, despite Treasury rates up nearly 230 bps (January to September), cap rates remained flat, as reported by Real Capital Analytics (RCA), at 4.6%. This also continued during a time of robust rent growth through the first half of 2022. Cap rate spreads, the difference in the cap rate and 10-year Treasury, compressed to their lowest level seen since 2007, at 150 bps in the third quarter. Real-time spreads are even lower given recent Treasury movements so far in the fourth quarter. Cap rates have been slow to respond to the higher Treasury rates. This is due to the natural lag in cost of debt to valuation: Price discovery can take several months, and when rates move up and down throughout that period, it will take longer for the market to come to an understanding of pricing. Due to the continued gross income growth seen throughout 2022 leading to a lower chance of distressed properties, there is little motivation for owners to negotiate a discount to valuation.

While transaction-based cap rates showed little movement throughout 2022 despite higher Treasury rates, survey-based cap rates started to show higher rates. CBRE reported cap rates up 72 bps in Class A properties over the past six months.⁷ The survey results may point to valuation expectations to come, indicating cap rates will rise and values will decline.

⁷ https://www.cbre.com/insights/briefs/investors-tighten-underwriting-for-prime-multifamily-assets-more-slowly-in-q3



10% 275 250 9% 225 8% Treasury, Spread and Cap Rate 200 Apartment Property Price Index 7% 175 6% 150 5% 125 4% 100 3% 75 2% 50 1% 0% CPPI (RHS) ■10-year Treasury Rate Cap Rate Spread

Exhibit 13: Multifamily Price Index, Cap Rate Spread and Treasury Rate

Sources: Freddie Mac, Real Capital Analytics CPPI, Federal Reserve Board, Moody's Analytics

A growing concern from the high Treasury rate and stubbornly low cap rates is negative leverage, where note rates are greater than the cap rate. This implies the cost to borrower is greater than the expected return on the asset. This in turn is slowing down transaction volume given that some deals may not be financially viable. Typically, an investor may take a lower return if they expect rental revenue to grow faster in the future to achieve their return goals, however, doing so increases the risk of the cash flows not being able to cover debt payments. The negative leverage signals a transition phase as the market adjusts to the higher rates. Some of the transition has started to show in cap rate changes across different geographies. While nationally cap rates are flat, some metros saw rates increase, per RCA, such as Phoenix, Charlotte and Northern New Jersey, among others.

We expect higher cap rates will put downward pressure on property valuation. In the third quarter of 2022, the growth in property prices started to moderate, up 1.2% over the quarter, and 15.9% over the past year, according to RCA. The prior three quarters had seen annual growth between 21-23%. This mostly came from just over 6% quarterly growth in both the third and fourth quarter of 2021. We expect property prices to continue their moderation and could see slight declines in the year ahead given the expected rise in cap rates.

Lower Origination Volume Forecast

The downward pressures on the multifamily investment market will lead to slower transaction volume throughout the end of 2022 and into 2023. We expect 2022 volume to be in the range of \$460 billion, down 5.5% over the year, and 2023 volume down roughly another 4-5% to \$440 billion. We expect less transactions given the negative leverage situation, which supports the idea that investors are waiting for the market to come back to an



equilibrium. We think many financed properties are well positioned to cover their debt payments given their likely low note rates and the strong recent market performance. As such, borrowers are not as pressured to sell properties at a lower price point and may wait for more favorable investment opportunities, also slowing overall business volume.

These forecasts are based on inflation and Treasury rate hikes slowing. The timing of this impacts expected volume growth in 2023. If this happens earlier, and investment demand returns sooner, we could see higher volume in 2023. However, if it takes longer, and especially if the economy slips into a recession, we could expect volume to be lower as the price discovery and negative-leverage situation is prolonged.

\$550 \$500 ■ Freddie Mac ■ Fannie Mae Life Insurers \$450 \$400 CMBS Other % Forecast \$350 \$300 \$250 \$200 \$150 \$100 \$50

Exhibit 14: Multifamily New Purchase and Guarantee Volume (\$ Billions)

Sources: Mortgage Bankers Association, ACLI, Wells Fargo, Intex Solutions Inc., Freddie Mac projections Note: 2022 and 2023 projections of \$460 and \$440 billion are by Freddie Mac as of November 2022.

Conclusion

We believe the next few months will be pivotal in how the economy performs, which will have a profound impact on the multifamily market. The current trajectory indicates the multifamily industry is on track for a healthy 2023, although it may be a stronger second half compared with the first half. Nationally, rents are expected to remain positive but continue to moderate. Vacancy rates will increase from a combination of slower demand due to economic uncertainty and the high volume of new supply entering the market. Similarly, volume will be muted until interest rate volatility can be curbed allowing for price discovery. The timing of this will determine how strong the multifamily market will grow in 2023. Even so, the tailwinds remain that will help prop up the multifamily market in the long run.



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