MOODY'S ANALYTICS

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A Volatile First Half – But What's Next?

The Economy, CRE, and Housing through the Second Quarter of 2022

Executive Summary

» Recession risks rose from 33% at the end Q1 to 40% in Q2 with a 50/50 chance of one in the next 18 months.

» Office and apartment rent trends in urban areas historically moved in lockstep. Now, they're on divergent paths.

» Retail vacancies to remain relatively elevated over the next five years.

» Industrial hasn't gotten the memo that strong headwinds for the economy are likely on the horizon.

» Nearly 84% of single-family home markets are overvalued, rising well above the housing bubble's peak.

» We forecast the 10-year Treasury rate to end 2022 at around 3.33% and stabilize at around 4.0% in the next five years.

» Cap rates will likely rise, but there is nuance across property types.

An Economy in Transition

Fears of an economic slowdown continued to run high through the second quarter of 2022, and though measures of sentiment are consistent with such anxieties –metrics tracking the real economy like job creation, unemployment, and overall consumer spending remained positive. All of this characterizes an *economy in transition* – from pandemic-driven lockdowns to pre-2020 demand and capacity. From an interest rate environment that has trended lower for the better part of four decades, to one with higher costs of funds.

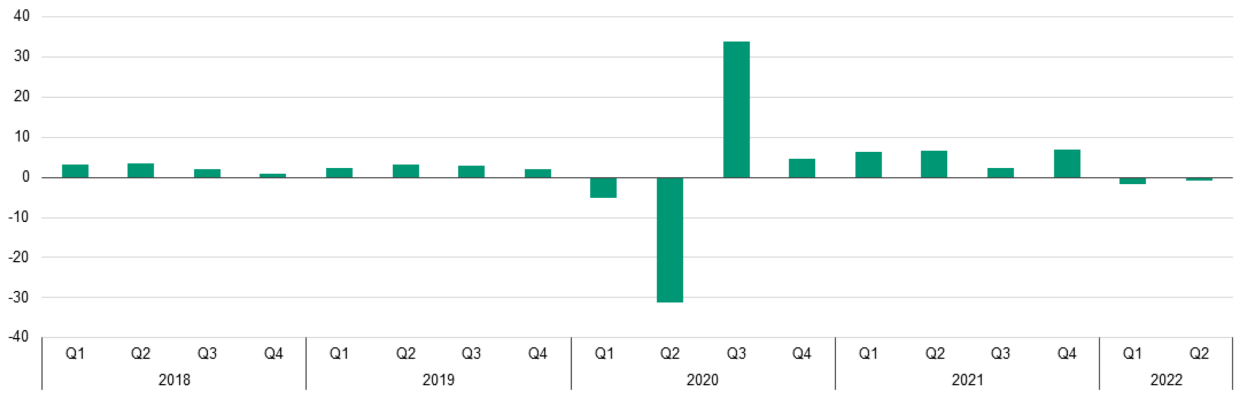
Now, economies are always in a state of change, but how did all of these trends affect trends in commercial real estate (CRE) and housing? And what is the US economy changing *towards*? Will some of this change be cyclical, or will some be semi-permanent? In this paper, we discuss our second quarter results for various CRE markets and present our latest outlook for the near- and intermediate-term.

Spoiler alert: income performance metrics still appear resilient, but volatility seems to be manifesting in pricing measures. Rents and vacancies are not deviating much from our initial expectations, but cap rates and transaction dynamics reflect pricing trends that may have peaked in March.

So, Are We In A Recession?

When advance estimates of second quarter GDP growth came in at -0.9% last July 28, the drumbeat of negative sentiment became deafening. After all, GDP growth was also negative (-1.6%) in the first quarter.

Figure 1 Real GDP (Percent Change from Prior Quarter)



Source: US Bureau of Economic Analysis; seasonally adjusted at annual rates.

"Two negative quarters of GDP growth" is one common rule of thumb for what characterizes an economy in recession, but it is not the official definition. The National Bureau of Economic Research's Business Cycle Dating Committee provides (and maintains) the official definition:

> *A recession involves a significant decline in economic activity that is spread across the economy and lasts more than a few months.*

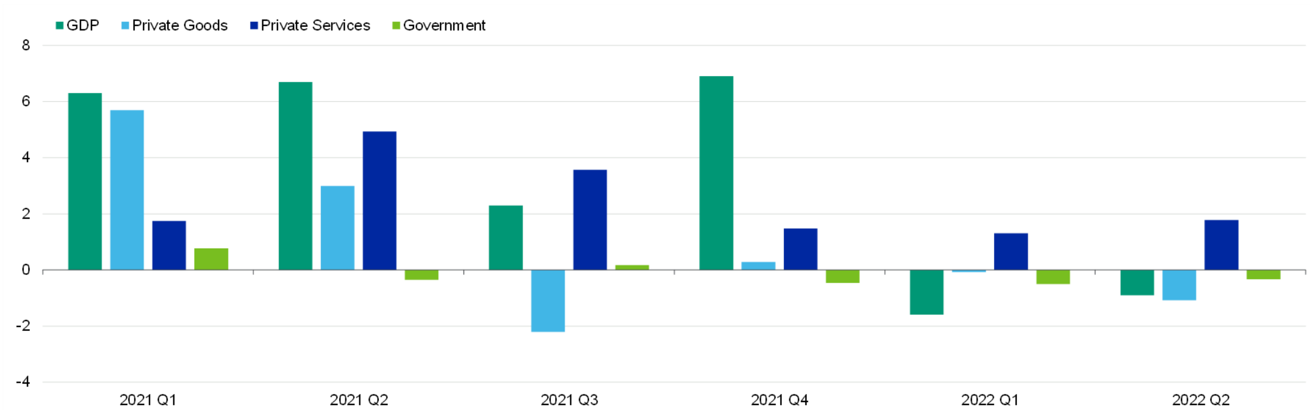
They actually make trade-offs across depth ('significant decline'), diffusion ('spread across the economy'), and duration ('lasts more than a few months'). For example, the massive economic dislocation prompted by COVID-19 and pandemic-related lockdowns technically lasted only for two months (official recession dates were between February 2020 to April 2020). However, the drop in economic activity was both deep (record-breaking GDP decline) and diffuse (it affected the entire world).

With that said, the *risk* of a recession has certainly risen over the course of the year – even as our GDP growth projections kept being revised downwards throughout 2022. **We started the year expecting real GDP to rise by 3.4% in 2022 - our latest forecast vintage suggests that GDP will increase by only 0.08% this year.** The probability of a recession occurring in the next 12 months has also risen from 33% at the end of the first quarter to 40% this period. We are at a statistically uncomfortable 50% chance of a recession over the next 18 months.

Still, the real economy is chugging along. Top-line GDP growth might have been negative in the second quarter, but personal consumption expenditures actually added 0.70% to that overall figure – though it was dragged down by reductions in gross private domestic investment. It is very difficult to characterize the US economy as being in a recession when we've created, on average, 375,000 jobs per month throughout the second quarter – with the unemployment rate hovering at a near historic low of 3.6%. July's figure for job creation, released last August 5, came in well above expectations at 528,000, further casting doubt on the worst of recession fears.

Furthermore, the US is still in the midst of a transition: as the economy regains confidence despite new COVID-19 variants, we are spending relatively less on goods and more on services.

Figure 2 From Goods to Services

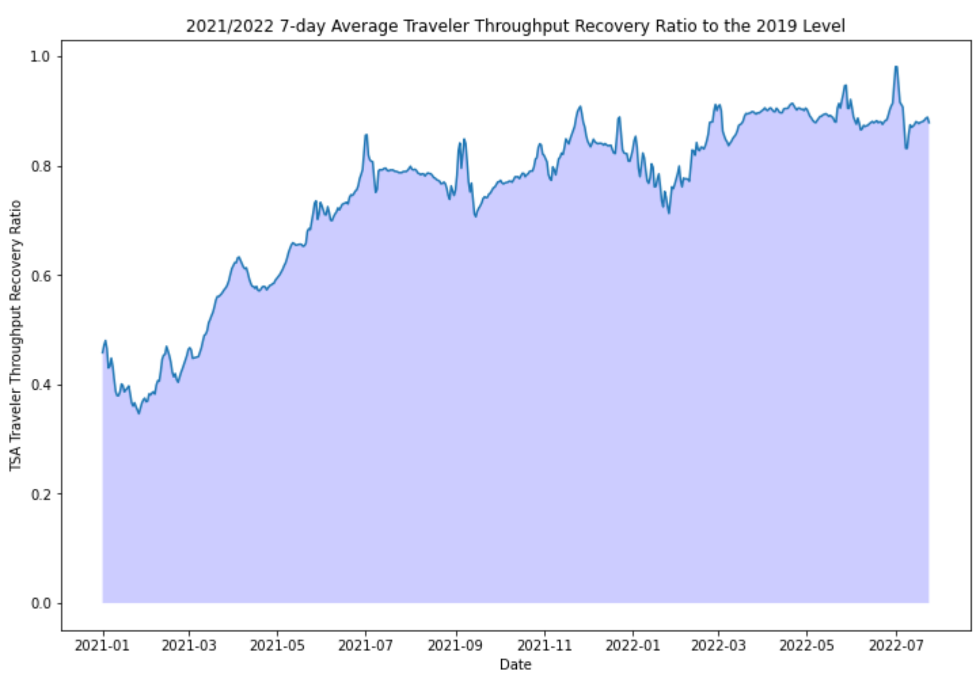


Source: US Bureau of Economic Analysis

Note how in Figure 2, the dark blue column representing the contribution of spending on private services to overall GDP change is consistently positive. It is also consistently greater than the contribution of spending on private goods (light blue column) to GDP growth starting in the second quarter of 2021. This also explains why **service company metrics like hotel ADRs and measures like airline profitability are performing well, while companies selling goods like Procter & Gamble, Walmart, and Amazon are issuing warnings about earnings slowdowns.**

We are also approaching pre-COVID-19 travel volumes. Volumes relative to 2019 averages oscillated throughout the last 12 months because of Delta and Omicron fears, but hit a recent high of 98.11% right at the end of the second quarter (July 1). Though it has declined slightly since then, the percentage tended to remain in the 90s throughout the months of April to June.

Figure 3 TSA Traveler Volume versus 2019



Source : Transportation Security Administration

The US real economy therefore remains relatively resilient, based on several performance metrics. Resilient enough to have given the Federal Reserve confidence to raise overnight borrowing rates by another 75 basis points last July 27. The central bank is very much aware that further tightening for monetary policy might tip the economy into a recession, and the rising interest rate environment is certainly affecting specific markets (particularly housing – see Section III). But in its effort to combat inflation, the Fed still (at this point) feels confident that it can raise rates while engineering a so-called "soft landing" – a stricter credit environment even as the economy continues to grow, albeit at a slower rate.

It is quite unlikely that the US economy entered a recession in the first half of 2022. But the ongoing Russia-Ukraine military conflict, persistently high prices for several factors of production, elevated inflation in general, and coordinated monetary policy tightening by central banks like the Fed and the ECB – all suggest that relatively high uncertainty characterize the remainder of 2022.

II. The Multifamily and CRE Landscape in the Second Quarter

Income performance metrics for multifamily remained strong in the second quarter. Vacancies at the national level fell by 20 basis points to 4.5% - now lower than pre-COVID vacancies which sat at 4.8% in the end of 2019. Asking and effective rents rose by 2.7% and 2.8%, respectively, representing a slight acceleration relative to the first quarter. This is not surprising, given how multifamily tends to exhibit seasonal strength during the second and third quarters of the calendar year, when many households make moving decisions.

Figure 4 National Apartment Market Quarterly Performance

Year	Qtr	Asking Rent	Percent Change	Effective Rent	Percent Change	Vacancy Rate
2015	2	$1,226	1.8%	$1,179	1.8%	4.3%
2015	3	$1,248	1.8%	$1,200	1.8%	4.3%
2015	4	$1,262	1.1%	$1,213	1.1%	4.3%
2016	1	$1,274	0.9%	$1,223	0.9%	4.3%
2016	2	$1,291	1.4%	$1,240	1.4%	4.2%
2016	3	$1,308	1.3%	$1,255	1.2%	4.2%
2016	4	$1,313	0.4%	$1,260	0.4%	4.2%
2017	1	$1,325	0.9%	$1,268	0.6%	4.4%
2017	2	$1,345	1.5%	$1,285	1.3%	4.4%
2017	3	$1,364	1.4%	$1,301	1.3%	4.5%
2017	4	$1,373	0.7%	$1,309	0.6%	4.6%
2018	1	$1,390	1.2%	$1,324	1.1%	4.7%
2018	2	$1,411	1.5%	$1,344	1.5%	4.7%
2018	3	$1,431	1.4%	$1,362	1.4%	4.7%
2018	4	$1,446	1.0%	$1,375	1.0%	4.8%
2019	1	$1,455	0.6%	$1,383	0.6%	4.7%
2019	2	$1,475	1.4%	$1,403	1.4%	4.6%
2019	3	$1,489	1.0%	$1,418	1.0%	4.6%
2019	4	$1,497	0.5%	$1,425	0.5%	4.8%
2020	1	$1,503	0.4%	$1,432	0.5%	4.8%
2020	2	$1,499	-0.3%	$1,427	-0.3%	4.9%
2020	3	$1,476	-1.5%	$1,405	-1.5%	5.1%
2020	4	$1,461	-1.0%	$1,391	-1.1%	5.3%
2021	1	$1,460	-0.1%	$1,389	-0.1%	5.4%
2021	2	$1,477	1.2%	$1,406	1.2%	5.4%
2021	3	$1,591	7.7%	$1,521	8.2%	4.8%
2021	4	$1,638	3.0%	$1,567	3.0%	4.8%
2022	1	$1,679	2.5%	$1,607	2.5%	4.7%
2022	**2**	**$1,724**	**2.7%**	**$1,653**	**2.8%**	**4.5%**

Source: Moody's Analytics CRE

By contrast, office performance metrics remained relatively flat, with a hint of distress. Office vacancies rose by 30 basis points in the second quarter, ending the period at 18.4%. That is close to the pandemic peak observed in the middle of 2021 (18.5%), and although asking and effective rents rose by a marginal 0.4%, the future of the office sector remains subject to a lot of debate given the uneven progress of so-called 'return to office' initiatives.

Figure 5 National Office Market Quarterly Performance

Year	Qtr	Net Absorption	Asking Rent	Percent Change	Effective Rent	Percent Change	Vacancy Rate
2015	2	8.3	$30.78	0.8%	$24.90	0.8%	16.7%
2015	3	12.2	$31.02	0.8%	$25.10	0.8%	16.6%
2015	4	12.7	$31.28	0.8%	$25.32	0.9%	16.5%
2016	1	8.2	$31.57	0.9%	$25.58	1.0%	16.4%
2016	2	5.1	$31.76	0.6%	$25.74	0.6%	16.4%
2016	3	2.9	$31.89	0.4%	$25.85	0.4%	16.4%
2016	4	12.9	$32.00	0.3%	$25.95	0.4%	16.3%
2017	1	5.7	$32.16	0.5%	$26.08	0.5%	16.3%
2017	2	4.9	$32.26	0.3%	$26.16	0.3%	16.4%
2017	3	5.6	$32.38	0.4%	$26.26	0.4%	16.4%
2017	4	7.3	$32.57	0.6%	$26.42	0.6%	16.4%
2018	1	6.2	$32.85	0.9%	$26.65	0.9%	16.5%
2018	2	3.0	$33.09	0.7%	$26.84	0.7%	16.6%
2018	3	5.2	$33.22	0.4%	$26.96	0.4%	16.7%
2018	4	9.7	$33.46	0.7%	$27.14	0.7%	16.7%
2019	1	8.5	$33.59	0.4%	$27.27	0.5%	16.7%
2019	2	5.3	$33.88	0.9%	$27.50	0.8%	16.8%
2019	3	10.3	$34.15	0.8%	$27.73	0.8%	16.8%
2019	4	15.4	$34.35	0.6%	$27.90	0.6%	16.8%
2020	1	0.8	$34.50	0.4%	$28.02	0.4%	17.0%
2020	2	3.4	$34.49	0.0%	$27.93	-0.3%	17.1%
2020	3	-4.3	$34.56	0.2%	$27.89	-0.1%	17.4%
2020	4	-6.4	$34.53	-0.1%	$27.75	-0.5%	17.8%
2021	1	-14.4	$34.44	-0.3%	$27.54	-0.8%	18.2%
2021	2	-3.7	$34.46	0.1%	$27.47	-0.3%	18.6%
2021	3	22.4	$34.49	0.1%	$27.53	0.2%	18.2%
2021	4	11.9	$34.52	0.1%	$27.57	0.1%	18.1%
2022	1	6.0	$34.60	0.2%	$27.65	0.3%	18.1%
2022	**2**	**-8.4**	**$34.75**	**0.4%**	**$27.75**	**0.4%**	**18.4%**

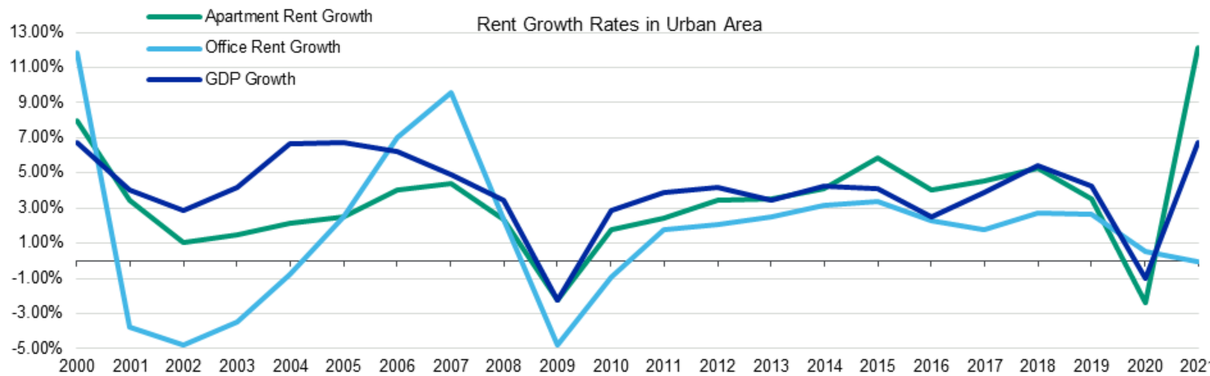
Source: Moody's Analytics CRE

Physical occupancy remained in the low- to mid-40s by the end of the second quarter, according to data from Kastle.[1] Markets in states like Texas tended to boast higher numbers (between 55 to 60%), while urban markets that were also some of the hardest hit during the early spikes of COVID like San Francisco and New York continued to have office physical occupancy rates at or below 40%.

In fact, in a potentially interesting and important deviation from historical patterns, overall office and apartment rent trends in urban areas began to diverge in 2021.

[1] https://www.kastle.com/safety-wellness/getting-america-back-to-work/ - as of the week ending August 3, physical occupancy across Kastle's ten major markets stood at 43.6%.

Figure 6 Apartment and Office Rent Growth in Urban Areas



Source: US Bureau of Economic Analysis and Moody's Analytics CRE

Figure 6 above shows that for most of the last two decades (and indeed, most of the 40+ years of data Moody's Analytics REIS has tracked) – office and apartment rent trends in urban areas moved in general lockstep. But in the tumultuous year of the COVID-19 pandemic – take a look at what happened to the green line above representing apartment rent growth and the light blue line representing office rent growth: they diverged, with apartment rents recovering quickly, and office rents continuing to slide.

The reason, of course, has been explored in many papers.[2] Pandemic-induced policies reduced the supply of housing, low interest rates spurred demand for housing in various forms, and office physical occupancy rates plummeted as hybrid work arrangements were implemented en masse and persisted. Whether or not this divergence will now characterize a 'broken correlation' between the fates of office and apartment remains to be seen.

Retail performance continues to be relatively flat. Neighborhood and community shopping center vacancies did not move at all in the second quarter, stuck at 10.3% nationally. Effective rents rose by all of 0.1% and asking rents did not even register any change (which, for those convinced of the demise of retail, can be construed as surprisingly positive).

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[2] We explore the reasons behind this phenomenon and extend the analysis to markets that either conformed or deviated from the national trend in this short form analysis. "The Great Divergence" by Xiaodi Li, Thomas LaSalvia, and Victor Calanog. Link here: https://cre.moodysanalytics.com/insights/cre-trends/the-great-divergence-multifamily-and-office-rent-growth-are-no-longer-in-lockstep/

Figure 7 National Retail Market Quarterly Performance

Year	Qtr	Net Absorption	Asking Rent	Percent Change	Effective Rent	Percent Change	Vacancy Rate
2015	2	2.5	$19.90	0.5%	$17.36	0.5%	10.1%
2015	3	3.7	$20.01	0.6%	$17.46	0.6%	10.0%
2015	4	2.6	$20.11	0.5%	$17.55	0.5%	10.0%
2016	1	3.1	$20.22	0.5%	$17.66	0.6%	9.9%
2016	2	4.0	$20.30	0.4%	$17.73	0.4%	9.8%
2016	3	1.1	$20.39	0.4%	$17.81	0.5%	9.9%
2016	4	4.5	$20.48	0.4%	$17.90	0.5%	9.9%
2017	1	3.0	$20.56	0.4%	$17.98	0.4%	9.9%
2017	2	1.2	$20.66	0.5%	$18.06	0.4%	10.0%
2017	3	2.2	$20.76	0.5%	$18.16	0.6%	10.0%
2017	4	3.3	$20.88	0.6%	$18.27	0.6%	10.0%
2018	1	1.0	$20.97	0.4%	$18.36	0.5%	10.0%
2018	2	-4.0	$21.03	0.3%	$18.41	0.3%	10.2%
2018	3	2.7	$21.13	0.5%	$18.49	0.4%	10.2%
2018	4	1.5	$21.22	0.4%	$18.57	0.4%	10.2%
2019	1	17.2	$21.34	0.6%	$18.68	0.6%	10.2%
2019	2	2.7	$21.42	0.4%	$18.76	0.4%	10.2%
2019	3	2.4	$21.48	0.3%	$18.82	0.3%	10.2%
2019	4	0.7	$21.50	0.1%	$18.84	0.1%	10.2%
2020	1	1.4	$21.54	0.2%	$18.87	0.2%	10.2%
2020	2	-0.4	$21.44	-0.5%	$18.75	-0.6%	10.2%
2020	3	-2.3	$21.40	-0.2%	$18.69	-0.3%	10.4%
2020	4	-1.6	$21.34	-0.3%	$18.60	-0.5%	10.5%
2021	1	-0.5	$21.31	-0.1%	$18.57	-0.2%	10.6%
2021	2	1.1	$21.33	0.1%	$18.59	0.1%	10.5%
2021	3	4.5	$21.36	0.1%	$18.64	0.3%	10.4%
2021	4	1.6	$21.36	0.0%	$18.66	0.1%	10.3%
2022	1	0.0	$21.38	0.1%	$18.68	0.1%	10.3%
2022	**2**	**1.3**	**$21.39**	**0.0%**	**$18.69**	**0.1%**	**10.3%**

Source: Moody's Analytics CRE

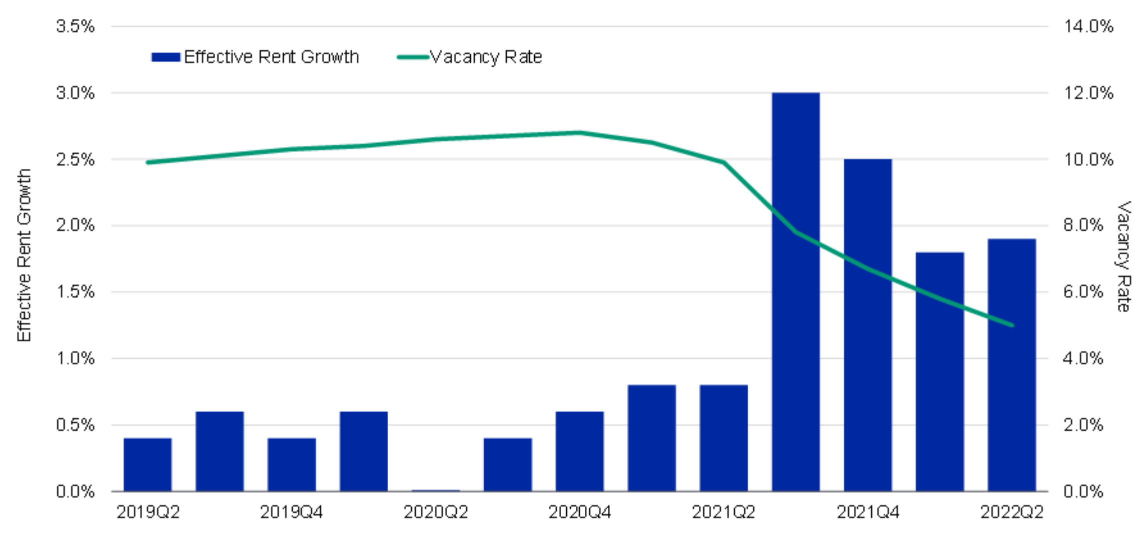
Mall vacancies remain somewhat elevated at 11.0%, though down slightly from historic highs of 11.5% in mid-2021. Mall asking rents rose by 0.1% in the second quarter.

There isn't much construction activity in the retail sector – and for good reason. Few investors appear to want to bet on brick-and-mortar retail development because of the continued rise of substitutes, all the way from e-commerce and its offshoots like "m-commerce" (purchases made on mobile devices). Some retail properties have begun to make the transition from tenants that sell goods to tenants that sell services, but a visit to a random selection of malls across the US will likely reveal that most occupants still tend to depend on merchandise that can also be purchased over the internet.

As such, **we are projecting retail vacancies to remain relatively elevated over the next five years**. There isn't much of a supply-side issue – but the question of whether demand for retail brick-and-mortar space continues to be eroded by the seemingly relentless progress of e-commerce remains.

Ongoing positive metrics for warehouse, distribution, flex, and R&D parallel job growth in the economy, as well as an upward trend in manufacturing activity, and other industrial-specific data, despite negative GDP growth in the first and second quarters of the year. The industrial sector clearly has yet to get the memo that strong headwinds for the economy are likely on the horizon.

Figure 8 Warehouse/Distribution Effective Rents and Vacancies



Source: Moody's Analytics CRE

National vacancies cratered to a record low 5.0% for warehouse/distribution properties, while effective rents rose by a healthy 1.9%, all in the second quarter. Flex/R&D vacancies moved downwards as well, declining by 50 basis points to 6.0% in the second quarter, while effective rents in the subsector rose by a healthy 1.2% during the same period.

Although subsequent readings of manufacturing activity from measures like the ISM Manufacturing Index suggest a moderate slowdown[3] - the July figure, released last August 1, declined to 52.8 from 53.0 in June – but historically, this index has had to dip to around 48 for a clearer sign of a 'recessionary pullback.' And we have yet to see reflected in industrial rents and vacancies.

Are there rumblings in an otherwise clear, blue horizon? Yes. Amazon's plan to sublease approximately 30 million SF of industrial space, announced in late May, have likely prompted other retailers to reconsider whether they have been too enthusiastic about space required to support sales of goods.[4]

We will continue to monitor the health and performance of various CRE sectors, but as of the second quarter of 2022, there appears to be little deviation from our earlier expectations in terms of how each property type would perform. If anything, multifamily performance metrics exceeded our initial expectations, at least on the rent growth side.

So where are higher interest rates really making a dent? The single-family housing sector.

III. Rates Bite: The Housing Sector in the Second Quarter

The housing market is where conditions appear to be cooling off quickly. Prices do remain elevated, driven by an acute housing shortage. But higher interest rates and declining affordability are slowing new home construction and purchases. Still. the market will find support as vacancy rates remain low due to a severe housing shortage.

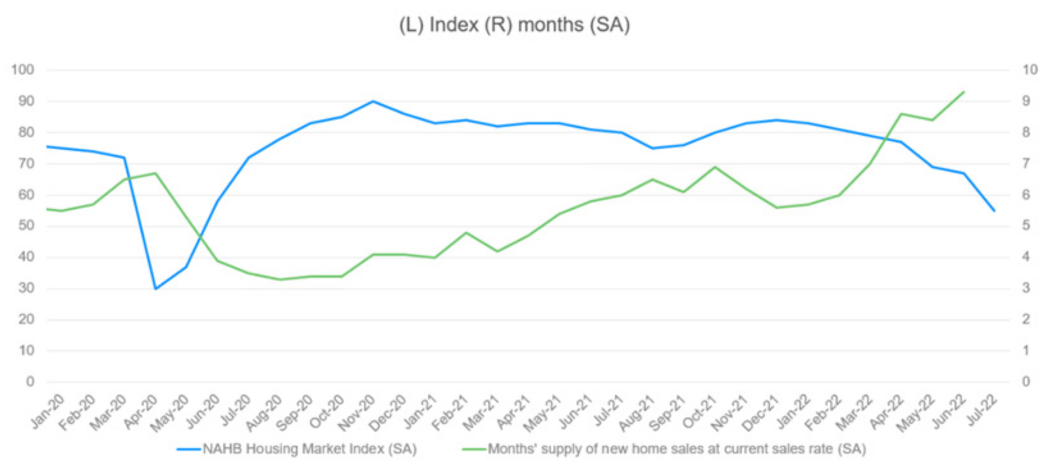
[3] Details of the latest release from August 1 are provided here: https://www.ismworld.org/supply-management-news-and-reports/reports/ism-report-on-business/pmi/july/

[4] See for example this article from June 9: https://www.wealthmanagement.com/industrial/amazon-s-plan-sublease-industrial-space-may-just-be-start

US new home sales in June came in at 590,000 annualized units, down 17.4% from last year. Inventories are rapidly growing. With 457,000 new homes for sale, the months' supply at the current rate of sales climbed to 9.3 months, which is the highest reading since 2009.

Higher inventories ushered in a decline in home builder confidence. July marked the seventh consecutive month homebuilder sentiment declined, plunging 12 points to 55. The 12-point drop is the second-largest one-month decline in history only surpassed by the drop in confidence at the start of the pandemic.

Figure 9 Builder Confidence Falls as Inventories Build



Source: US Census Bureau; National Association of Home Builders; Moody's Analytics

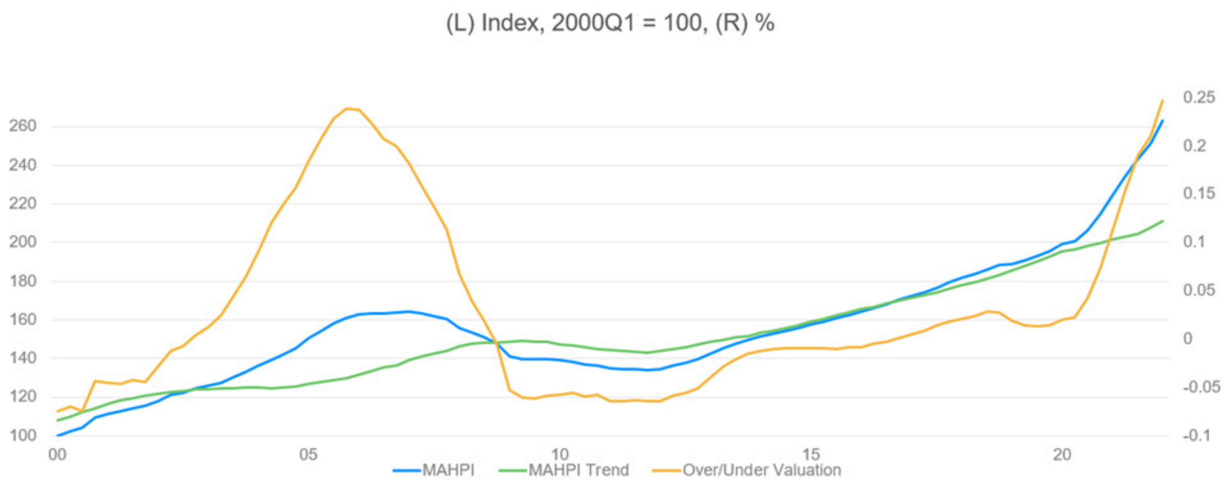
Existing home inventory is still tight, but has been rising consistently since January's low of 1.5 month's supply of housing seasonally adjusted. There are now 2.7 month's supply of existing single-family seasonally adjusted homes on the market as of June. Bidding wars are disappearing, fewer buyers are willing to waive contingencies, and there are more reports of asking prices being slashed than in previous months.

While the market is slowing down, prices are still high. The pandemic sent demand for single-family housing through the roof in 2020, with price growth over 32% in the span of the last two years, according to the Moody's Analytics House Price Index. Price gains have also been widespread with more metro areas seeing significant price gains during this expansion than during the housing bubble.

The pandemic greatly accelerated migration in the United States, with many people moving from the densest parts of cities to the suburbs and rural areas, supercharging growth in many metropolitan areas that led some markets to astronomical valuations compared to a few years ago.

Nationally, the housing market is 24.7% overvalued according to the Moody's Analytics over/under valuation model. This is higher than the 23.8%. peak overvaluation during the housing bubble.

Figure 10 Highest Overvaluation Statistics for the US Housing Market

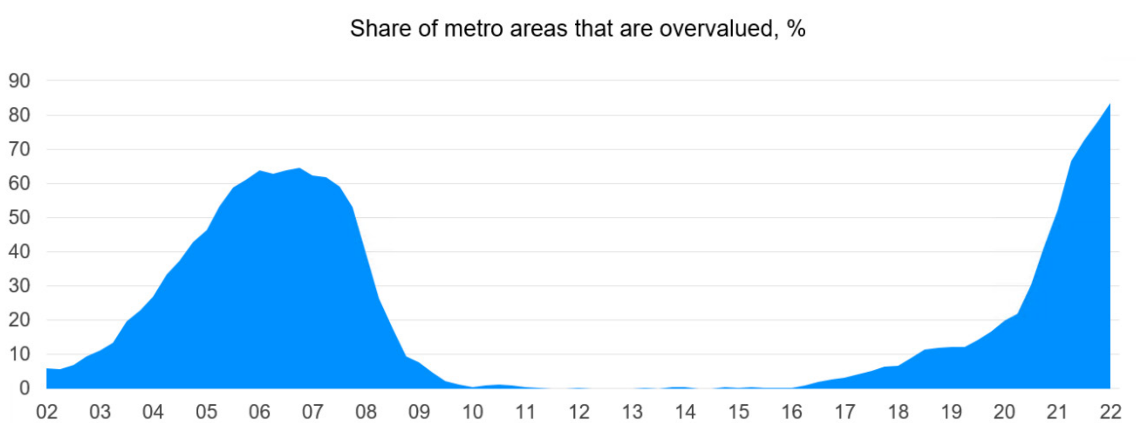


Source: US Census Bureau; Moody's Analytics

More alarming, the most overvalued metro areas far exceed this rate. The most expensive market using this measure being Dalton, Georgia, at 80.7% overvalued in 2022 Q1. Boise, Idaho and Sherman-Denison, Texas round out the top 3 most overvalued metros at 71.7% and 68.6%, respectively.

Further, 184 metros are at least or more overvalued than the US market overall. These markets have seen prices soar since the beginning of the pandemic. Overall, nearly 84% of markets are overvalued, rising well above the housing bubble's peak.

Figure 11 More Markets are Overvalued versus the Past Housing Bubble

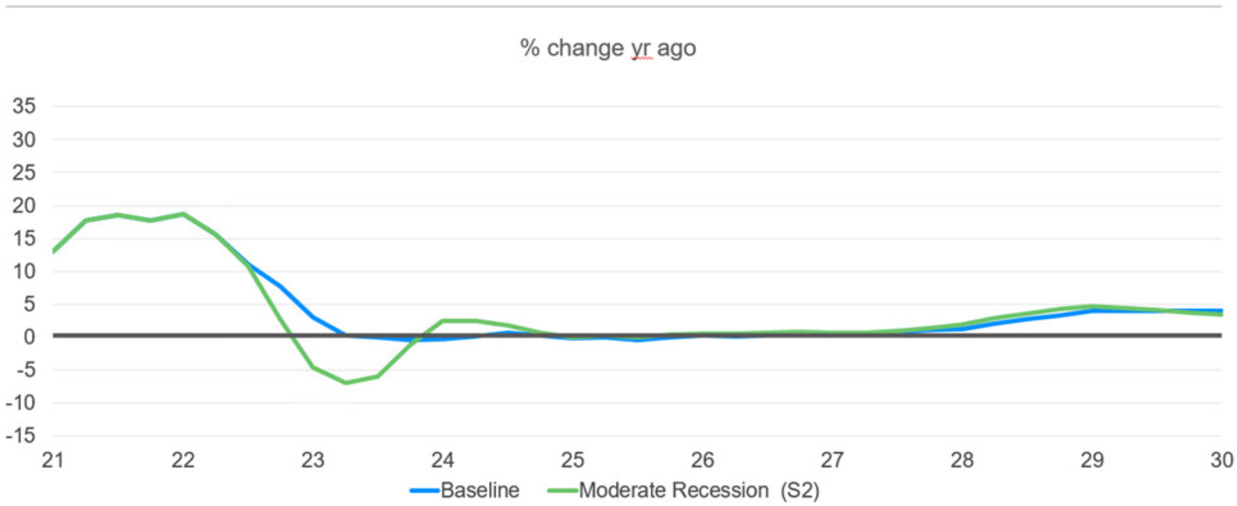


Source: Moody's Analytics

Many of these highly overvalued markets may now be primed for price depreciation. This depreciation will likely not, however, be a crash like we saw during the Great Recession. We are expecting house prices to retreat between 5 and 10% in the most over-valued markets. If there is a recession, drops will be higher, between 10 and 20%.

Nationally, moderate depreciation in house prices is coming. Prices will continue to rise through the end of 2022, but at much slower rate than in 2021. There will be modest price declines in 2023, and then prices will mostly flatten. If there is a recession, prices will likely drop farther.

Figure 12 House Prices to Decline Modestly



Source: FHFA; Moody's Analytics

However, price declines will likely be moderate and pale in comparison to those seen during the Great Recession. Vacancy rates have been steadily declining this year to 4.5% in May and there is currently a severe housing shortage of approximately 1.5 million units.

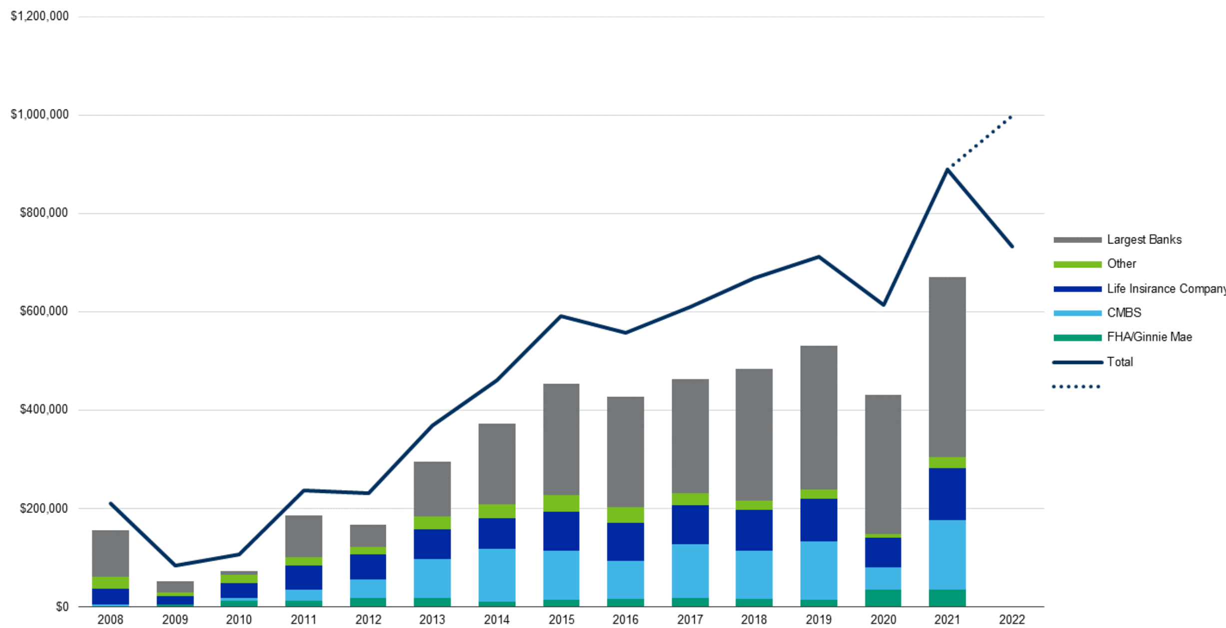
Overbuilding has not materialized like the lead up to the Great Recession. Supply chain disruptions, labor supply, and high commodity prices have all slowed new home construction. With builder confidence shrinking and inventories bloating, home builders will not dramatically increase new construction projects soon.

IV. CRE Capital Markets

While there is little evidence of unexpected slowdowns in CRE income drivers like rents and vacancies, the higher interest rate environment is likely weighing on CRE capital markets. As recently as February, the Mortgage Bankers Association expected multifamily and CRE issuance to top $1 trillion this year, after a record breaking $891 billion of issuance in 2021. That is a 12.2% *increase*.

The MBA has since lowered their expectations: as of the forecast released last July 19, the trade association representing CRE and multifamily mortgage bankers now only expects $733 billion of issuance across lender types in 2022, representing an 18% *decrease* relative to 2021 volumes.

Figure 13 Commercial and Multifamily Lending Expectations



Source: Mortgage Bankers Association

The dotted blue line in Figure 13 above represents the original forecast for commercial real estate and multifamily mortgage lending from February; the solid blue line is the updated forecast as of mid-July.

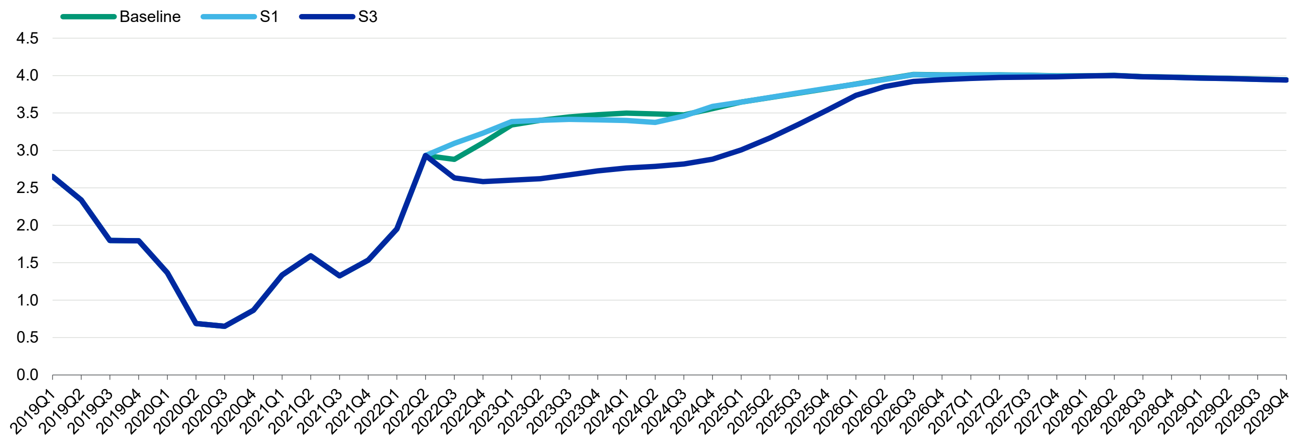
On the positive side, an 18% decline in commercial and multifamily lending represents a *fraction* of the drop that the Mortgage Bankers Association expects for residential lending. As of July 18, the MBA is expecting residential mortgage originations to drop by 40.6%. This is a pullback that the MBA had been more or less anticipating since late 2021, given the expected rise in interest rates: their forecast called for a 33% drop in residential originations in 2022, back in October 2021.[5] Year-over-year numbers from large banks like Wells Fargo and Citigroup already hit that level of decline in *the first quarter*.[6]

Rising interest rates also tend to exert upward pressure on CRE cap rates, primarily through its effect on the 10-year Treasury rate, CRE's traditional risk-free benchmark. Having the 10-year Treasury rate spike to nearly 3.5% in mid-June and then descend about 50 to 60 basis points since then – it ended the second quarter at 2.98% and has tended to hover at 3.0% or below throughout July - means continuing uncertainty for transacting parties. Buyers, investors, and lenders may well be demanding higher cap rates compared to last year's lows, given how the 10-year Treasury rate has doubled throughout 2022 and ended the year at 1.52%. But sellers may well be holding on to reference prices from as recently as three to six months ago, and continuing to demand low cap rates.

Our current baseline forecasts call for the 10-year Treasury rate to end 2022 at around 3.10% and stabilize at around 4.0% over the next five years. That outlook will obviously change if we encounter any kind of economic dislocation during this time period.

5 https://www.cnbc.com/2021/10/18/real-estate-mortgage-originations-will-drop-33percent-in-2022-as-interest-rates-rise.html
6 https://www.reuters.com/business/finance/soaring-interest-rates-weigh-big-bank-mortgage-loan-growth-2022-04-18/

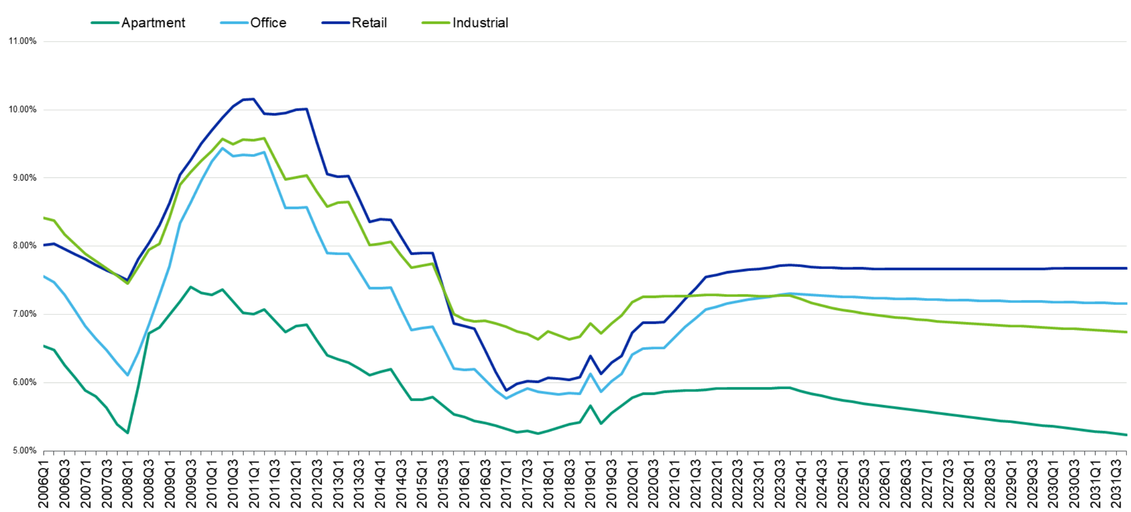
Figure 14 10-year Treasury Forecasts



Source: Moody's Analytics

We are expecting cap rates to rise because of this near-term outlook, but there is of course nuance across property types. For apartment and industrial, we expect the relative rise to flatten around the end of 2022 or early 2023 and then begin to decline. For office and retail, cap rates are likely to continue to rise and stay elevated.

Figure 15 Cap Rate Forecasts



Source: Moody's Analytics CRE

These cap rate forecasts reflect our long-term view about each property type. Given office and retail's evolutionary woes, it is likely that CRE market participants flock to multifamily and industrial properties– at least in the near-term.

> *"Within each property type and across geographic markets, there may be interesting plays. For example, Class A apartments tend to trade at higher prices and therefore lower cap rates, relative to other transactions. But for some Texas markets we've seen clients report Class B value-add deals trading at even lower cap rates than Class A properties – because of the future prospect of being able to raise rents at a faster pace," said* ***Kevin Fagan, Head of CRE Economic Analysis for Moody's Analytics.*** *"Even as we encounter more turbulence, others are seeking opportunities. Some are hoping that higher interest rates or even a recession might yield more attractive pricing for CRE assets, many of which traded at rock-bottom cap rates even through the COVID-19 crisis. This also likely explains why interest in non-major markets and non-core asset types like mobile home parks, single-family rentals, or emerging classes like life sciences may even increase."*

We will continue to monitor the performance of multifamily, CRE, and housing throughout 2022, and update our outlook accordingly.