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January 25, 2023

14th US Real Estate Forum

Americas Asia Europe Middle East



Perspectives on US Multifamily and CRE Key Dynamics and Predictions for the Near Term

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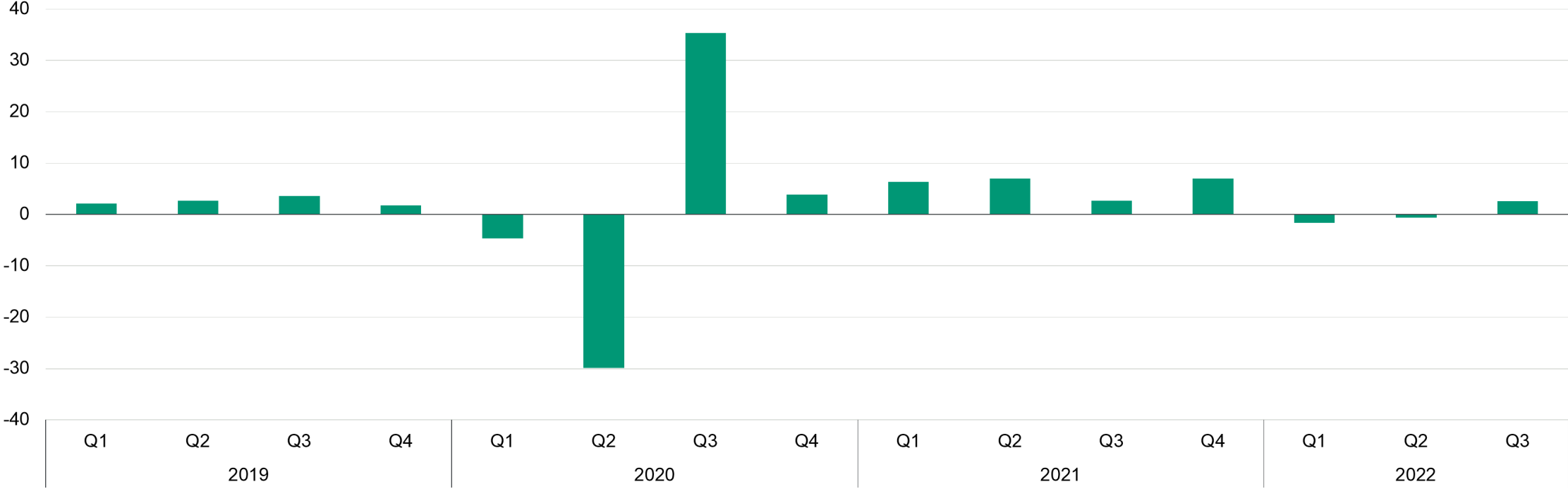
<https://www.linkedin.com/company/moodysanalytics-cre/>

January 25, 2023

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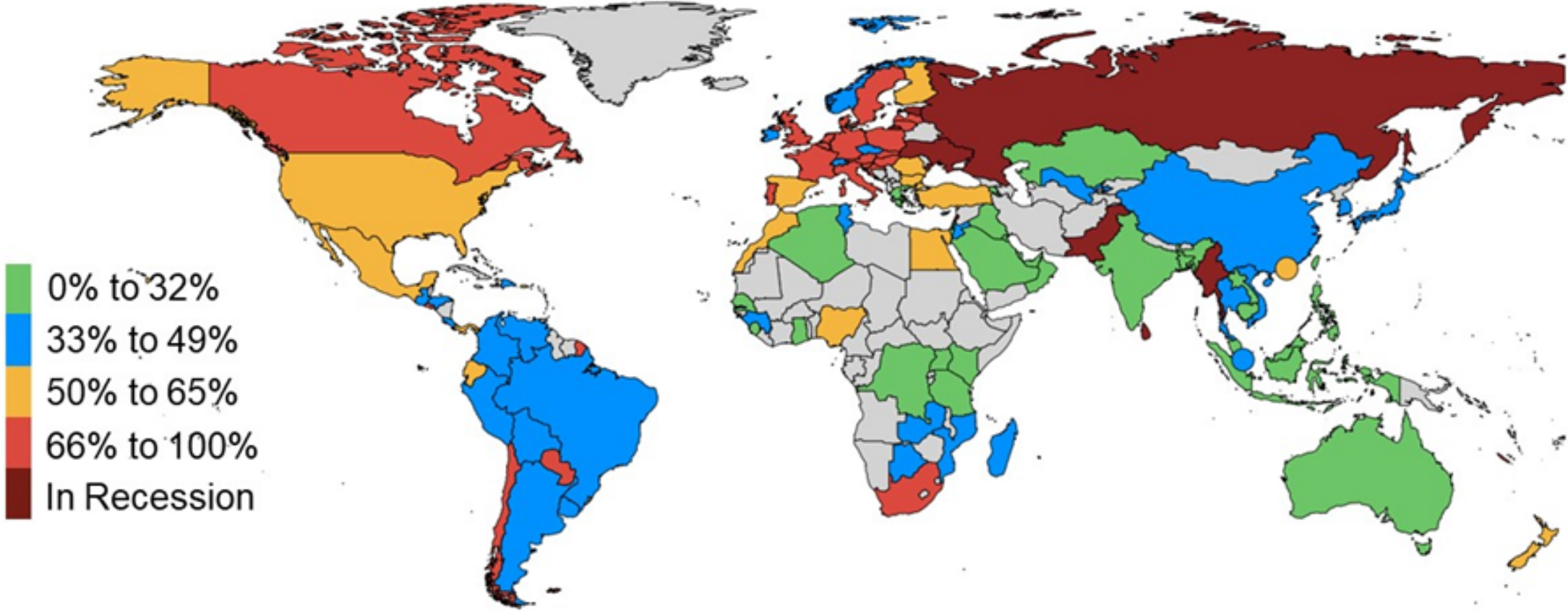
Perspectives on the
Economy

How Do You Think 2022 Turned Out?



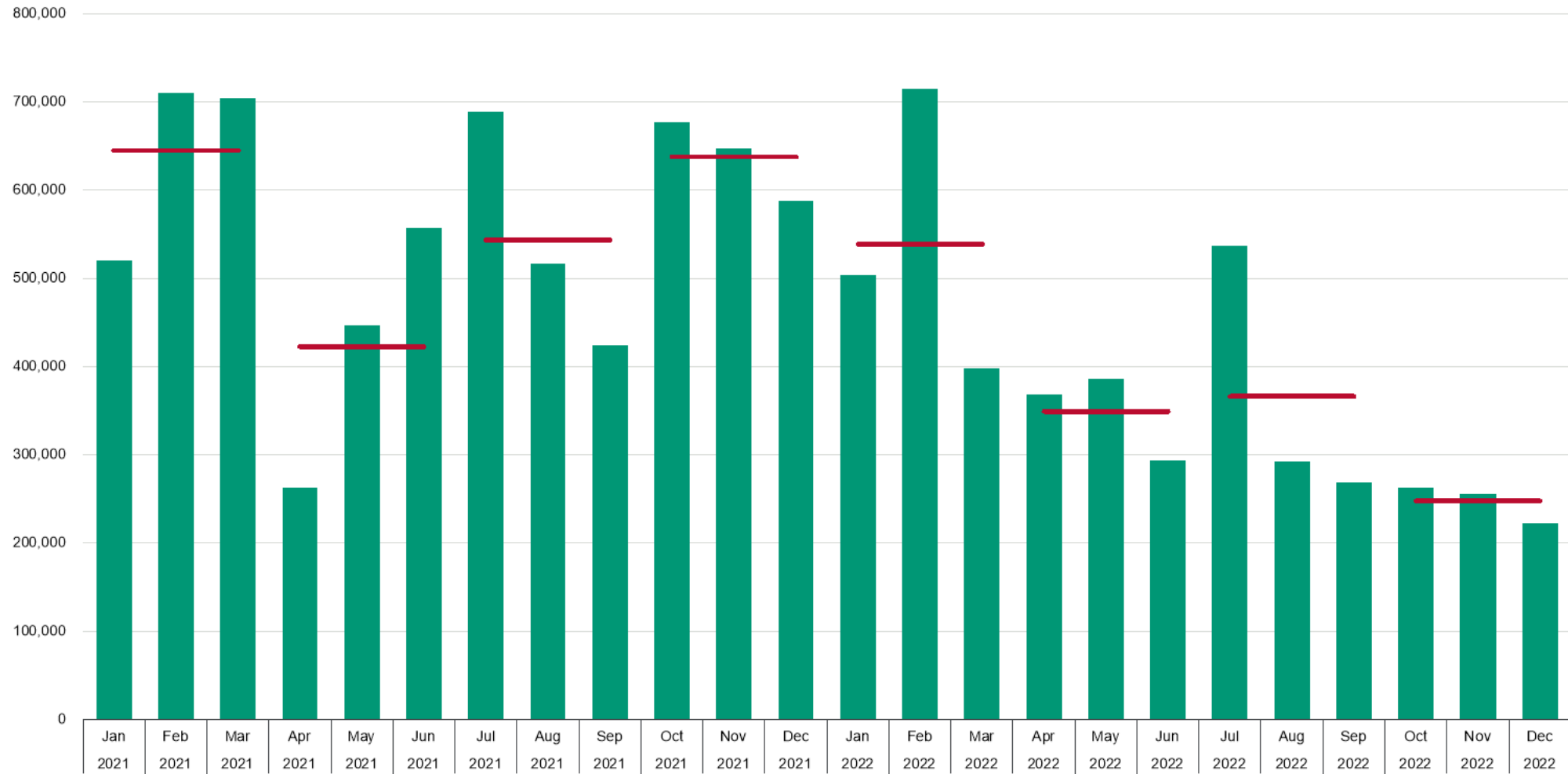
Source: Bureau of Economic Analysis

Recession Probabilities Across the World



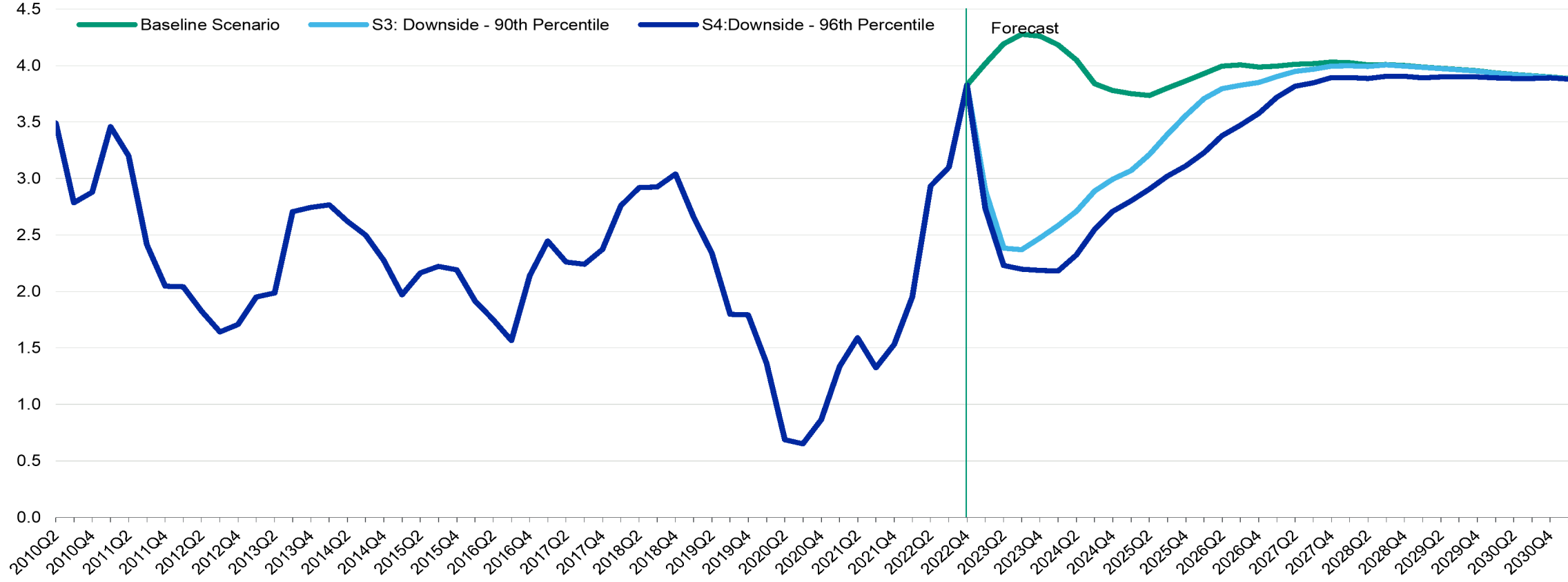
Source: Moody's Analytics

Job Creation Trends from 2021 to the Present



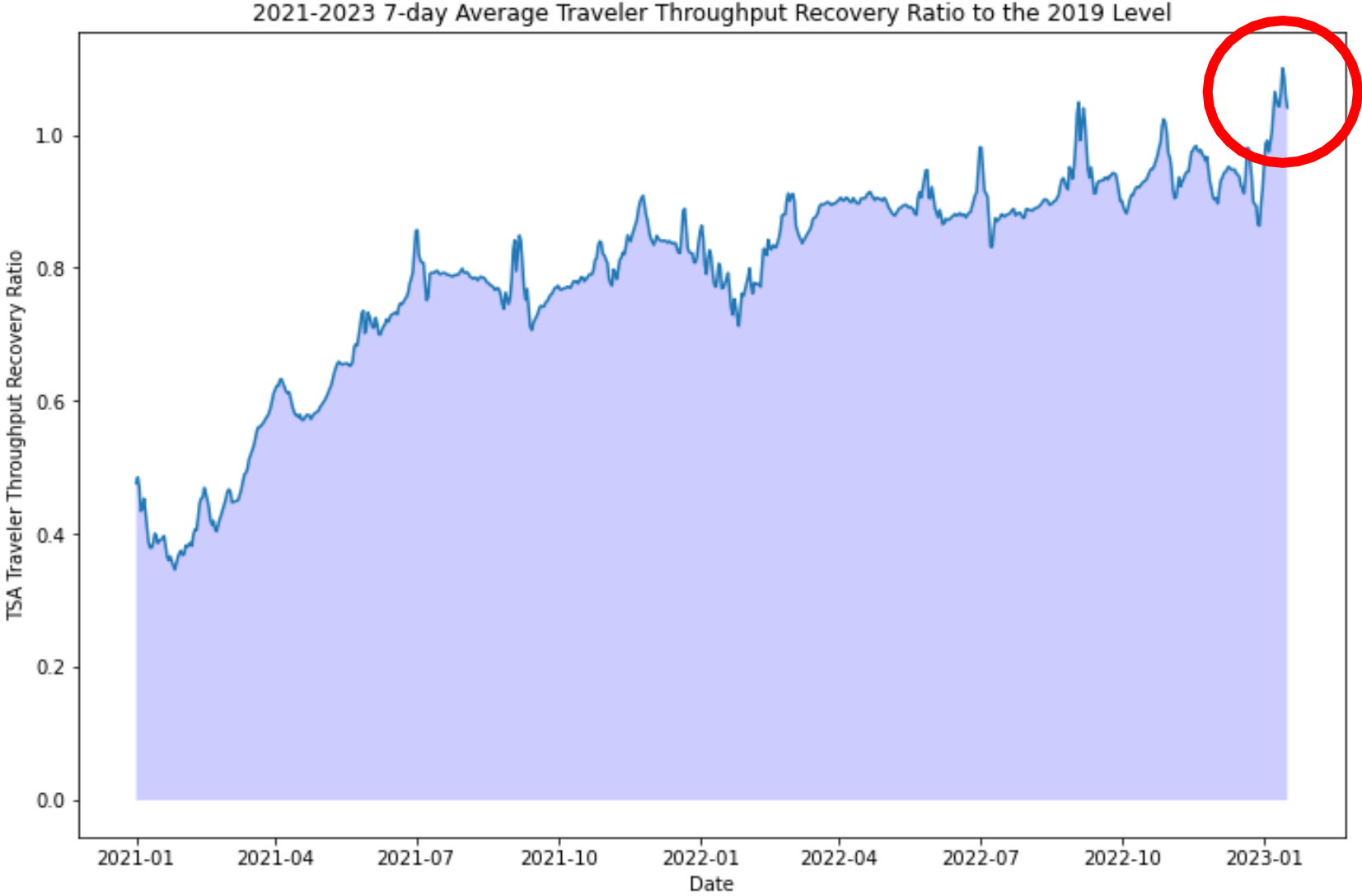
Source: Bureau of Labor Statistics

Updated Forecasts for the US 10 YR TSY



Source: Moody's Analytics

New High of 109.98% last January 13!



Source: Transportation Security Administration

The Economic Outlook & Policy Environment

Key Takeaways

- » Despite fears (and record low consumer sentiment measures in mid-2022), it doesn't look like we entered a recession in 2022. But what about 2023?
- » Current US GDP forecasts (January 2023 vintage) puts 2022 growth at +0.91% (we expected the US economy to grow by +3.4% back in January 2022).
- » There was a “rate head fake” in the third quarter, but now market players are preparing for a future where higher cost of funds is the norm. Even with downside scenarios, there is likely a floor for rates if inflation persists.
- » <What does this mean for various geographies and US sectors?>

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The Built Environment and Various Changes

National Apartment Market

Quarterly & Annual Market Conditions

- » Vacancies inched upwards to 4.5% in the fourth quarter.
- » National rent growth remained positive when one considers new and existing leases, but some negative changes at the MSA level (and for new leases being signed) suggest that multifamily didn't escape the economic slowdown unscathed.

Quarterly

Year	Qtr	Asking Rent	Percent Change	Effective Rent	Percent Change	Vacancy Rate
2015	4	\$1,262	1.0%	\$1,213	1.1%	4.3%
2016	1	\$1,274	1.0%	\$1,223	0.8%	4.3%
2016	2	\$1,292	1.4%	\$1,240	1.4%	4.2%
2016	3	\$1,308	1.2%	\$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	1.2%	4.4%
2017	4	\$1,374	0.7%	\$1,310	0.7%	4.6%
2018	1	\$1,389	1.1%	\$1,324	1.1%	4.7%
2018	2	\$1,411	1.6%	\$1,344	1.5%	4.7%
2018	3	\$1,431	1.4%	\$1,362	1.3%	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	0.9%	\$1,418	1.1%	4.6%
2019	4	\$1,497	0.5%	\$1,425	0.5%	4.7%
2020	1	\$1,504	0.5%	\$1,432	0.5%	4.7%
2020	2	\$1,499	-0.3%	\$1,428	-0.3%	4.9%
2020	3	\$1,477	-1.5%	\$1,406	-1.5%	5.0%
2020	4	\$1,462	-1.0%	\$1,391	-1.1%	5.2%
2021	1	\$1,460	-0.1%	\$1,390	-0.1%	5.3%
2021	2	\$1,477	1.2%	\$1,407	1.2%	5.3%
2021	3	\$1,591	7.7%	\$1,521	8.1%	4.8%
2021	4	\$1,639	3.0%	\$1,568	3.1%	4.8%
2022	1	\$1,680	2.5%	\$1,608	2.6%	4.7%
2022	2	\$1,728	2.9%	\$1,656	3.0%	4.5%
2022	3	\$1,759	1.8%	\$1,687	1.9%	4.4%
2022	4	\$1,794	2.0%	\$1,720	2.0%	4.5%

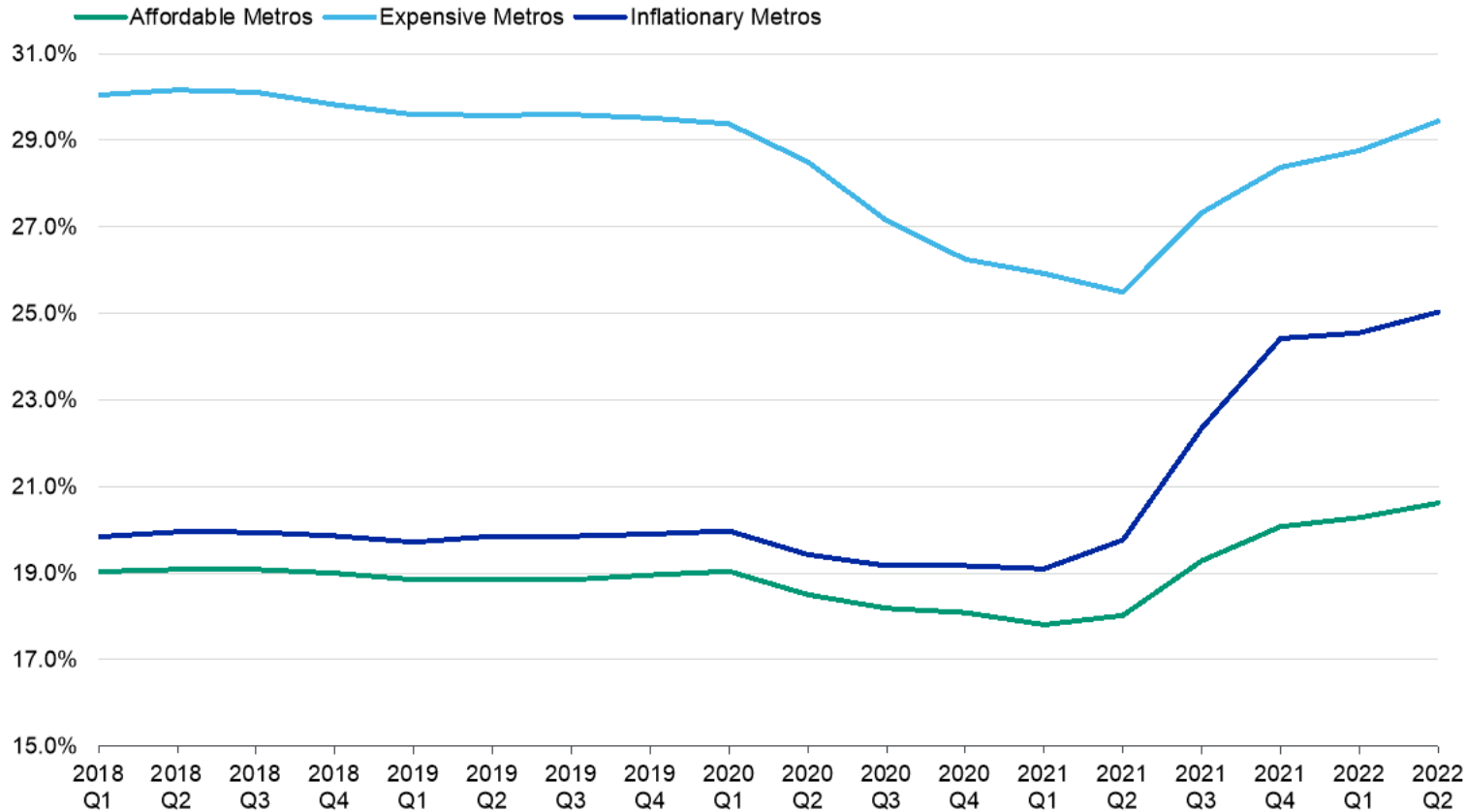
Annual

Year	Asking Rent	Percent Change	Effective Rent	Percent Change	Vacancy Rate
2012	\$1,107	3.5%	\$1,061	4.1%	4.1%
2013	\$1,146	3.5%	\$1,100	3.7%	4.0%
2014	\$1,193	4.1%	\$1,146	4.2%	3.9%
2015	\$1,262	5.8%	\$1,213	5.8%	3.9%
2016	\$1,313	4.0%	\$1,260	3.9%	4.1%
2017	\$1,374	4.6%	\$1,310	4.0%	4.7%
2018	\$1,446	5.2%	\$1,375	5.0%	4.9%
2019	\$1,497	3.5%	\$1,425	3.6%	4.8%
2020	\$1,462	-2.3%	\$1,391	-2.4%	4.8%
2021	\$1,639	12.1%	\$1,568	12.7%	4.4%
2022	\$1,794	9.5%	\$1,720	9.7%	4.1%
2023	\$1,822	1.6%	\$1,745	1.5%	4.6%
2024	\$1,876	3.0%	\$1,798	3.0%	4.7%
2025	\$1,936	3.2%	\$1,854	3.1%	4.9%
2026	\$2,000	3.3%	\$1,917	3.4%	4.9%

Source: Moody's Analytics REIS;
79 of 275 Apartment Markets

National Apartment Market

Affordability Concerns

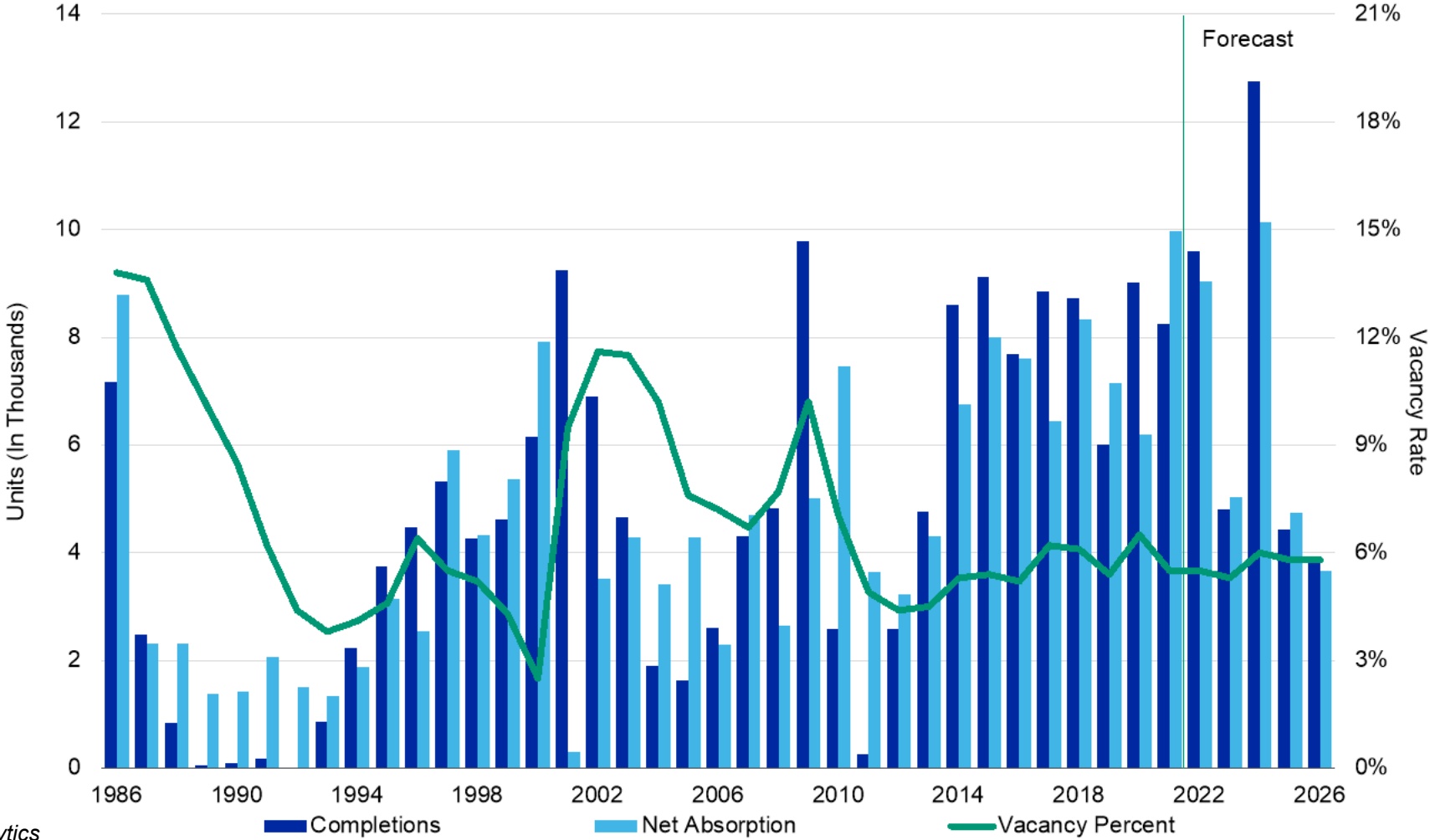


Source: Moody's Analytics REIS

- » Slowing **sunbelt** rent growth has decreased upward pressure on the rent-to-income ratio.
- » “**Expensive**” metros realized accelerating rent growth bringing their ratio back to pre-pandemic levels
- » The **convergence of ratios** during the pandemic has reduced some affordability advantages and may be slowing migration

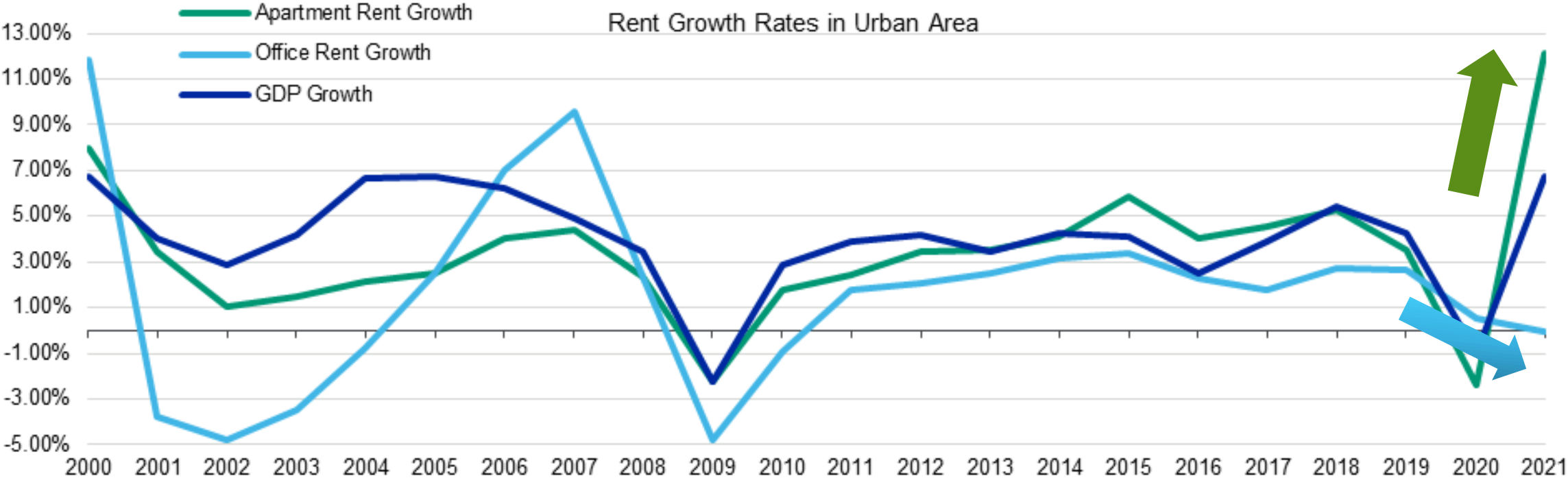
Austin Apartment Market

Supply & Demand Trends



Source: REIS, Real Estate Solutions by Moody's Analytics

The Great Divergence



Source: Moody's Analytics CRE

National Office Market

Quarterly & Annual Market Conditions

- » The national vacancy rate hit 18.7% in the fourth quarter – higher than pandemic highs.
- » Very hard to value office investments at this point given general uncertainty around the future of work.

Quarterly

Year	Qtr	Net Absorption	Asking Rent	Percent Change	Effective Rent	Percent Change	Vacancy Rate
2015	4	12.7	\$31.28	0.9%	\$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	5.1	\$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	-13.5	\$34.44	-0.3%	\$27.54	-0.8%	18.2%
2021	2	-2.0	\$34.46	0.1%	\$27.48	-0.2%	18.5%
2021	3	23.0	\$34.50	0.1%	\$27.54	0.2%	18.2%
2021	4	12.9	\$34.53	0.1%	\$27.58	0.1%	18.1%
2022	1	6.2	\$34.61	0.2%	\$27.65	0.3%	18.1%
2022	2	0.0	\$34.89	0.8%	\$27.87	0.8%	18.4%
2022	3	3.1	\$35.05	0.5%	\$28.00	0.5%	18.5%
2022	4	-7.1	\$35.14	0.3%	\$28.04	0.1%	18.7%

Annual

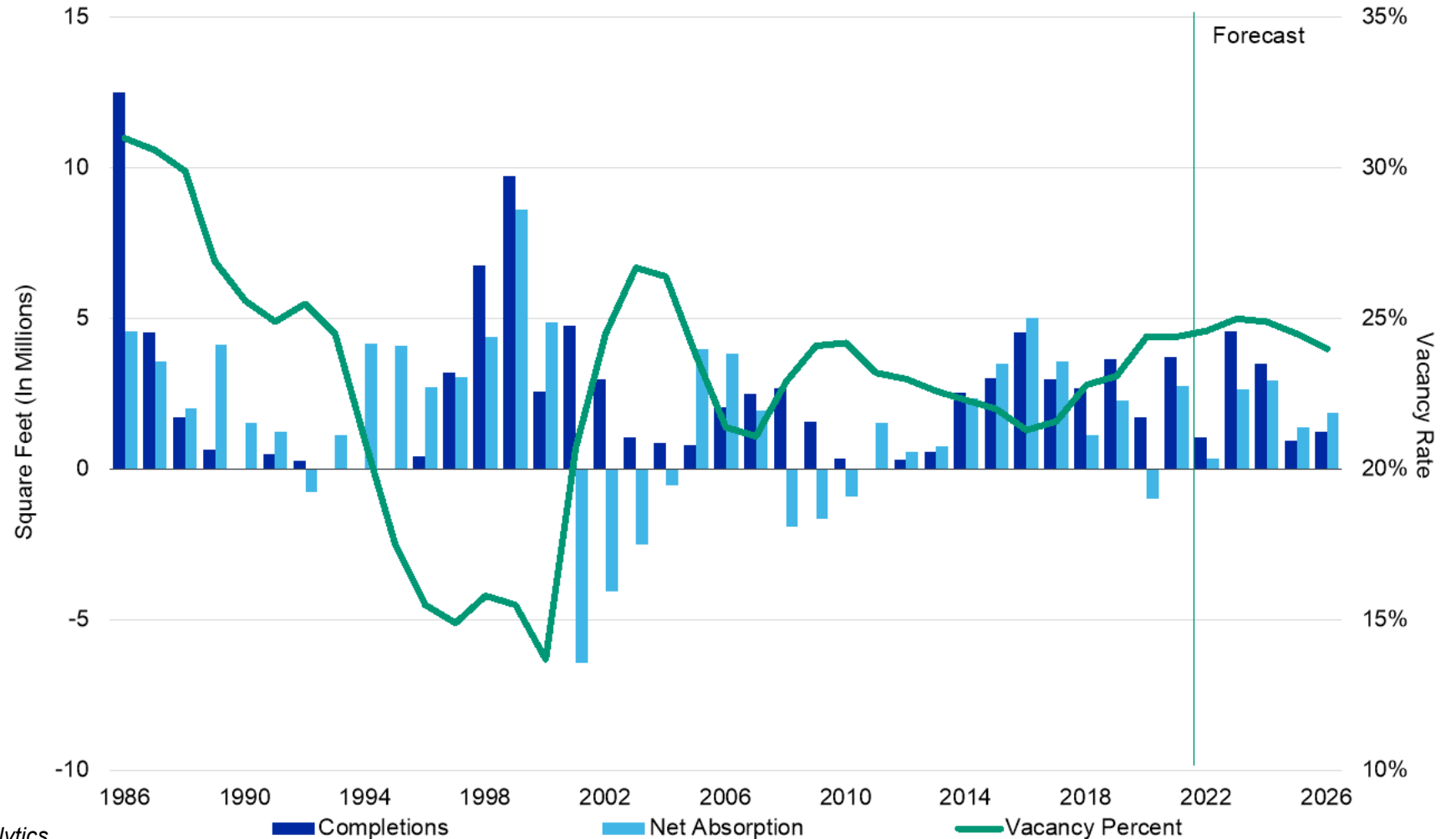
Year	Net Absorption	Asking Rent	Percent Change	Effective Rent	Percent Change	Vacancy Rate
2012	15.4	\$28.60	2.1%	\$23.09	2.3%	17.2%
2013	25.1	\$29.32	2.5%	\$23.69	2.6%	17.0%
2014	29.3	\$30.25	3.2%	\$24.45	3.2%	16.9%
2015	38.0	\$31.28	3.4%	\$25.32	3.6%	16.5%
2016	29.1	\$32.00	2.3%	\$25.95	2.5%	16.3%
2017	23.4	\$32.57	1.8%	\$26.42	1.8%	16.4%
2018	24.1	\$33.46	2.7%	\$27.14	2.7%	16.7%
2019	35.8	\$34.35	2.7%	\$27.90	2.8%	16.8%
2020	-6.5	\$34.53	0.5%	\$27.75	-0.5%	17.8%
2021	20.4	\$34.53	0.0%	\$27.58	-0.6%	18.1%
2022	2.1	\$35.14	1.8%	\$28.04	1.7%	18.7%
2023	17.1	\$35.73	1.7%	\$28.48	1.6%	18.8%
2024	30.3	\$36.32	1.7%	\$29.00	1.8%	18.8%
2025	29.6	\$36.95	1.7%	\$29.58	2.0%	18.6%
2026	32.8	\$37.62	1.8%	\$30.25	2.3%	18.3%

Source: Moody's Analytics;
79 of 190 Office Markets

Net absorption figures are in millions of square feet.

Dallas Office Market

Supply & Demand Trends



Source: REIS, Real Estate Solutions by Moody's Analytics

National Retail Market

Quarterly & Annual Market Conditions

Quarterly

Year	Qtr	Net Absorption	Asking Rent	Percent Change	Effective Rent	Percent Change	Vacancy Rate
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%	\$18.07	0.5%	10.0%
2017	3	2.2	\$20.76	0.5%	\$18.16	0.5%	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	1.0	\$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	-0.3	\$21.44	-0.5%	\$18.76	-0.6%	10.3%
2020	3	-2.3	\$21.40	-0.2%	\$18.69	-0.4%	10.4%
2020	4	-1.6	\$21.34	-0.3%	\$18.61	-0.4%	10.5%
2021	1	-0.2	\$21.31	-0.1%	\$18.57	-0.2%	10.6%
2021	2	1.6	\$21.33	0.1%	\$18.59	0.1%	10.6%
2021	3	5.1	\$21.36	0.1%	\$18.64	0.3%	10.4%
2021	4	2.3	\$21.36	0.0%	\$18.66	0.1%	10.3%
2022	1	0.7	\$21.38	0.1%	\$18.68	0.1%	10.3%
2022	2	2.1	\$21.40	0.1%	\$18.70	0.1%	10.3%
2022	3	0.5	\$21.41	0.0%	\$18.71	0.1%	10.3%
2022	4	0.7	\$21.45	0.2%	\$18.74	0.2%	10.3%

Neighborhood & Community Shopping Centers

Annual

Year	Net Absorption	Asking Rent	Percent Change	Effective Rent	Percent Change	Vacancy Rate
2012	11.3	\$19.08	0.5%	\$16.59	0.5%	10.7%
2013	12.7	\$19.35	1.4%	\$16.83	1.4%	10.4%
2014	13.5	\$19.70	1.8%	\$17.17	2.0%	10.2%
2015	12.3	\$20.11	2.1%	\$17.55	2.2%	10.0%
2016	12.7	\$20.48	1.8%	\$17.90	2.0%	9.9%
2017	9.7	\$20.88	2.0%	\$18.27	2.1%	10.0%
2018	1.2	\$21.22	1.6%	\$18.57	1.6%	10.2%
2019	6.7	\$21.50	1.3%	\$18.84	1.5%	10.2%
2020	-2.7	\$21.34	-0.7%	\$18.61	-1.2%	10.5%
2021	8.7	\$21.36	0.1%	\$18.66	0.3%	10.3%
2022	4.0	\$21.45	0.4%	\$18.74	0.4%	10.3%
2023	6.2	\$21.66	1.0%	\$19.00	1.4%	10.2%
2024	8.1	\$21.99	1.5%	\$19.32	1.7%	10.1%
2025	7.3	\$22.38	1.8%	\$19.72	2.1%	10.0%
2026	8.0	\$22.79	1.8%	\$20.15	2.2%	10.0%

Neighborhood & Community Shopping Centers

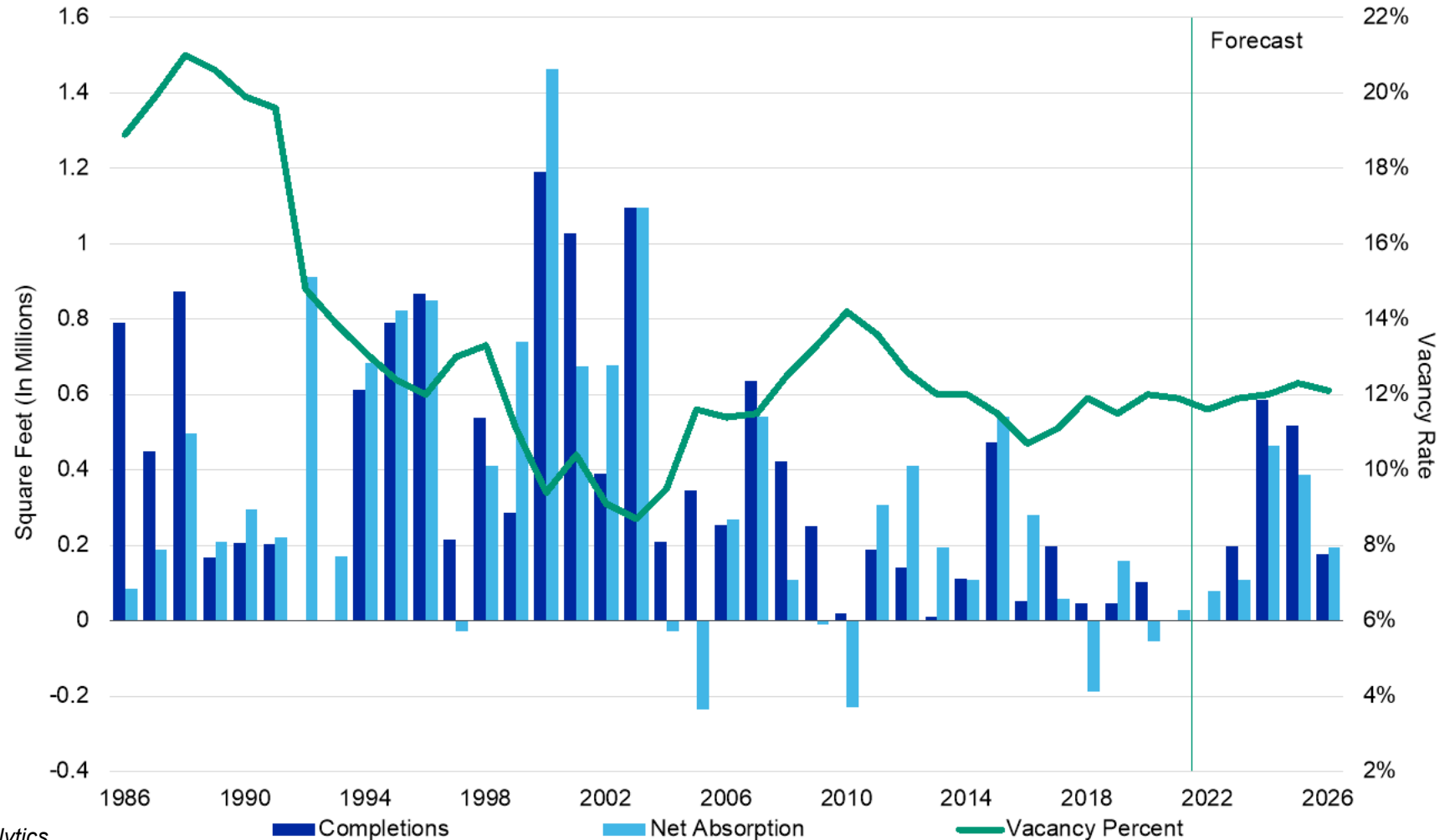
Year	Quarter	Asking Rent	Percent Change	Vacancy Rate
2012	Y	\$39.31	1.0%	8.6%
2013	Y	\$39.95	1.6%	7.9%
2014	Y	\$40.66	1.8%	8.0%
2015	Y	\$41.54	2.2%	7.8%
2016	Y	\$42.38	2.0%	7.8%
2017	Y	\$43.00	1.5%	8.3%
2018	Y	\$43.35	0.8%	9.0%
2019	Y	\$43.84	1.1%	9.7%
2020	Y	\$43.05	-1.8%	10.5%
2021	Y	\$43.26	0.5%	11.2%
2022	Q4	\$43.34	0.1%	11.2%

Regional/Super Regional Malls

Source: Moody's Analytics;
77 of 190 Retail Markets
Net absorption figures are in millions of square feet.

Fort Worth Retail Market

Supply & Demand Trends



Source: REIS, Real Estate Solutions by Moody's Analytics

National Hotel Market

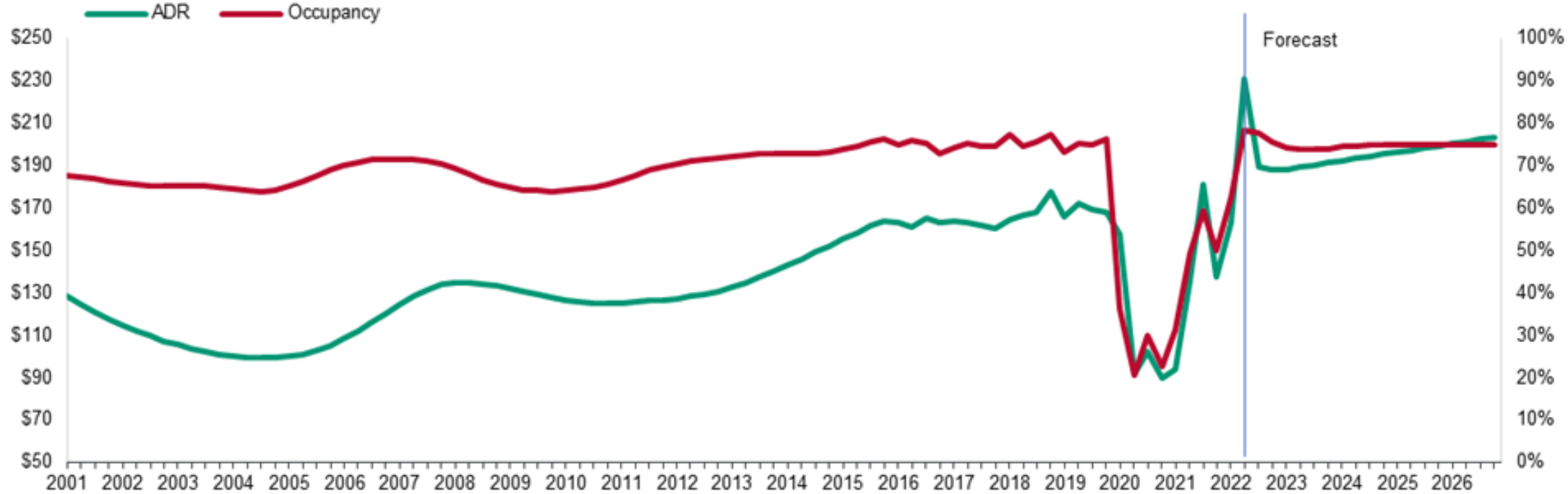
Quarterly Market Conditions

- Hotel performance metrics recovered (massively) in the first half of 2022. ADRs are now at record highs – much higher than pre-pandemic levels.
- Occupancies hit a very tight 67.6% in the second quarter.
- Will there be a climbdown from these stratospheric (record) highs? Back down to historic averages? Or will this persist and be the ‘new normal’ for survivors of the last two years, which has been positively Darwinian for the hotel sector?

Source: Moody's Analytics

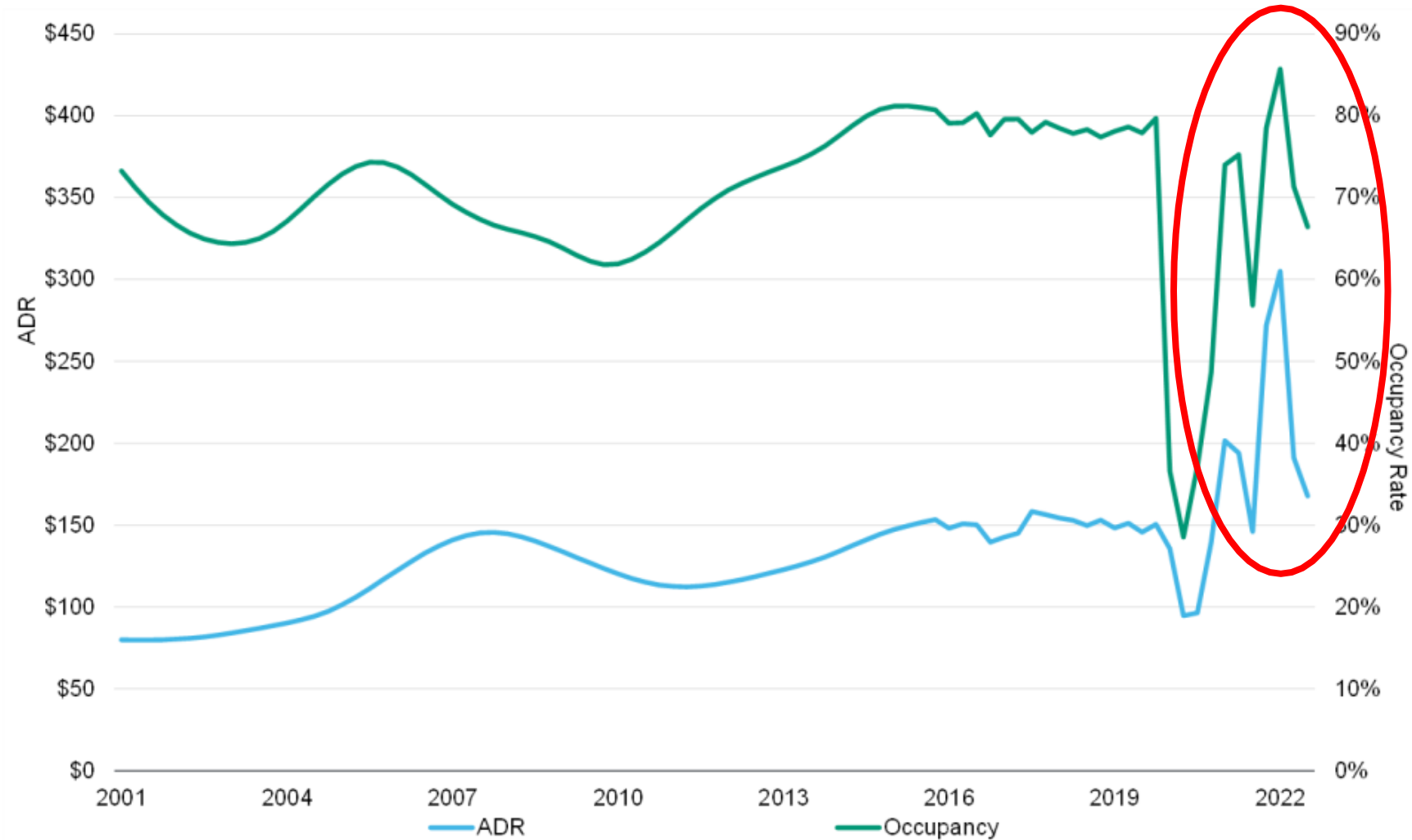
Year	Qtr	ADR	Percent Change	Occupancy Rate	PCT PT Change	RevPAR	Percent Change
2017	3	\$124	0.7%	66.7%	1.4%	\$82	2.8%
2017	4	\$125	1.4%	65.4%	-1.3%	\$82	-0.6%
2018	1	\$127	1.0%	65.6%	0.2%	\$83	1.3%
2018	2	\$127	0.2%	65.7%	0.1%	\$83	0.3%
2018	3	\$127	0.3%	64.0%	-1.7%	\$81	-2.3%
2018	4	\$127	-0.4%	65.5%	1.5%	\$83	2.0%
2019	1	\$127	0.6%	65.2%	-0.3%	\$83	0.2%
2019	2	\$128	0.1%	65.3%	0.1%	\$83	0.3%
2019	3	\$127	-0.4%	65.1%	-0.2%	\$83	-0.7%
2019	4	\$128	0.8%	66.0%	0.9%	\$85	2.2%
2020	1	\$106	-17.3%	36.7%	-29.3%	\$39	-54.0%
2020	2	\$88	-16.9%	38.4%	1.7%	\$34	-13.1%
2020	3	\$93	5.9%	45.4%	7.0%	\$42	25.2%
2020	4	\$86	-7.5%	34.6%	-10.8%	\$30	-29.5%
2021	1	\$100	16.4%	52.1%	17.5%	\$52	75.2%
2021	2	\$123	22.1%	64.0%	11.9%	\$78	50.0%
2021	3	\$126	2.9%	59.8%	-4.2%	\$75	-3.9%
2021	4	\$128	1.7%	51.9%	-7.9%	\$67	-11.7%
2022	1	\$140	9.3%	63.3%	11.4%	\$89	33.3%
2022	2	\$149	6.3%	67.6%	4.3%	\$101	13.5%
2022	3	\$142	-4.9%	67.4%	-0.2%	\$96	-5.2%
2022	4	\$140	-1.1%	65.7%	-1.7%	\$92	-3.6%
2023	1	\$140	0.0%	64.9%	-0.8%	\$91	-1.3%
2023	2	\$141	0.6%	65.5%	0.6%	\$92	1.5%

Boston ADRs and Occupancies



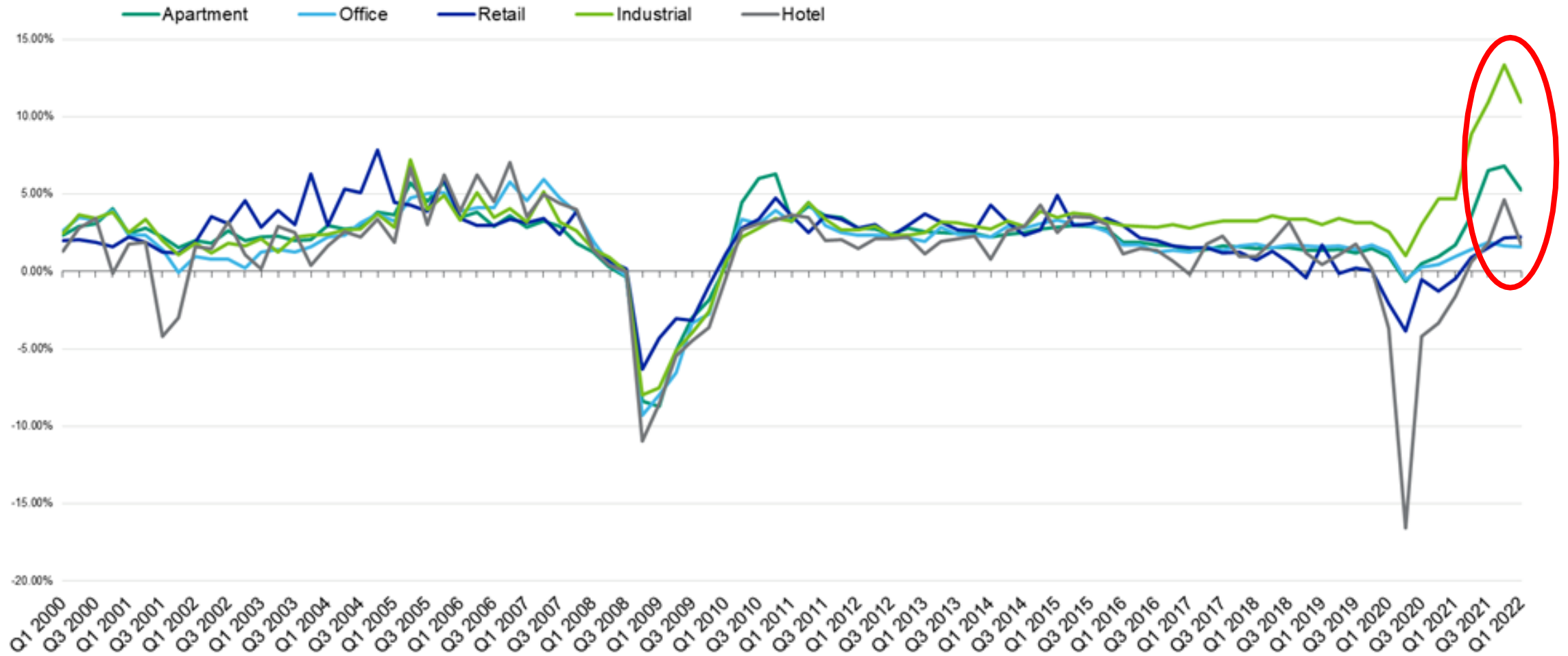
Source: Kalibri, Moody's Analytics CRE

Why Mean Reversion? The Case of Miami



Source: Kalibri, Moody's Analytics CRE

But What About Values?



Source: NCREIF (total return on institutional properties)

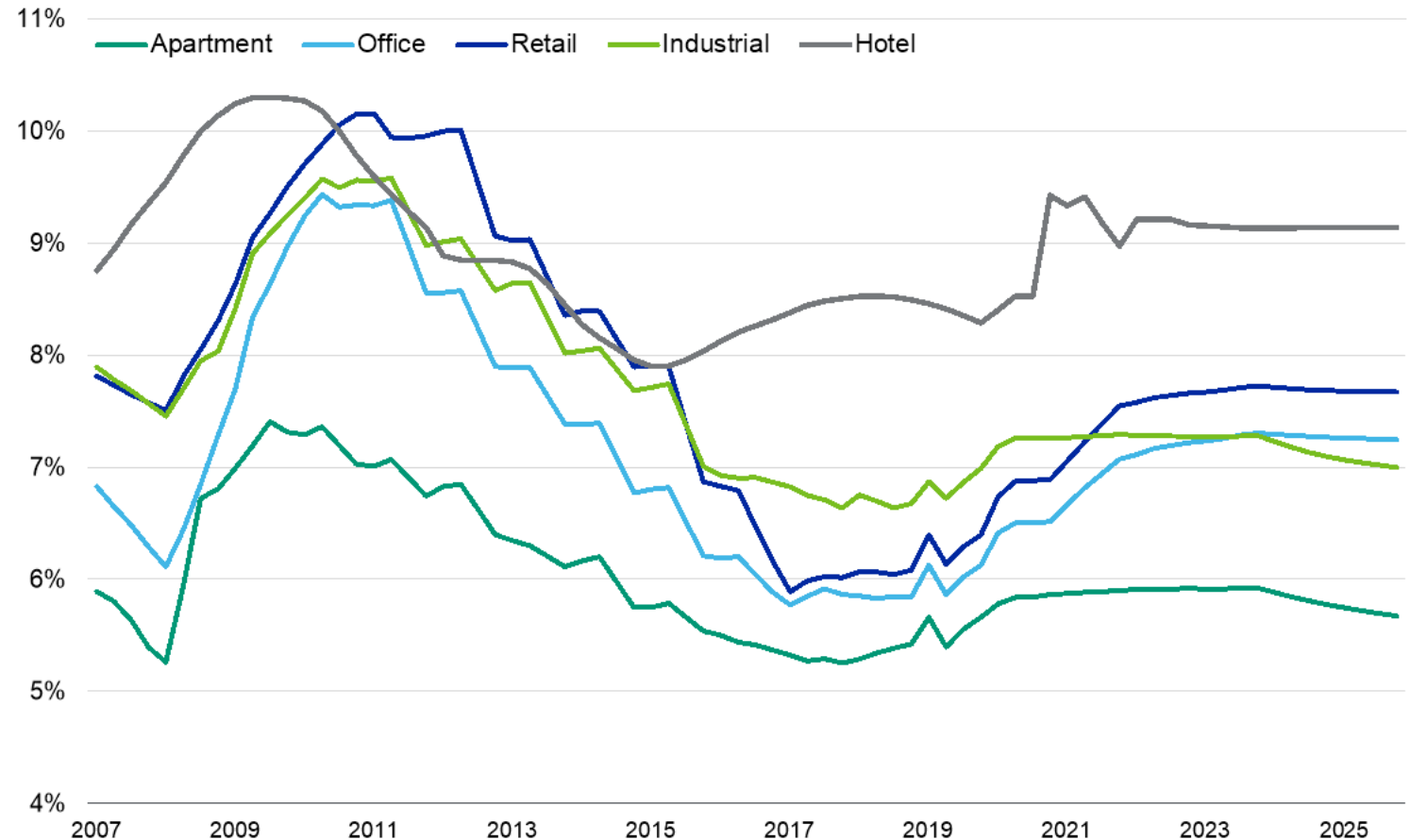
3

Interest Rates, Capital Markets, and Transaction Activity

Cap Rate Forecasts

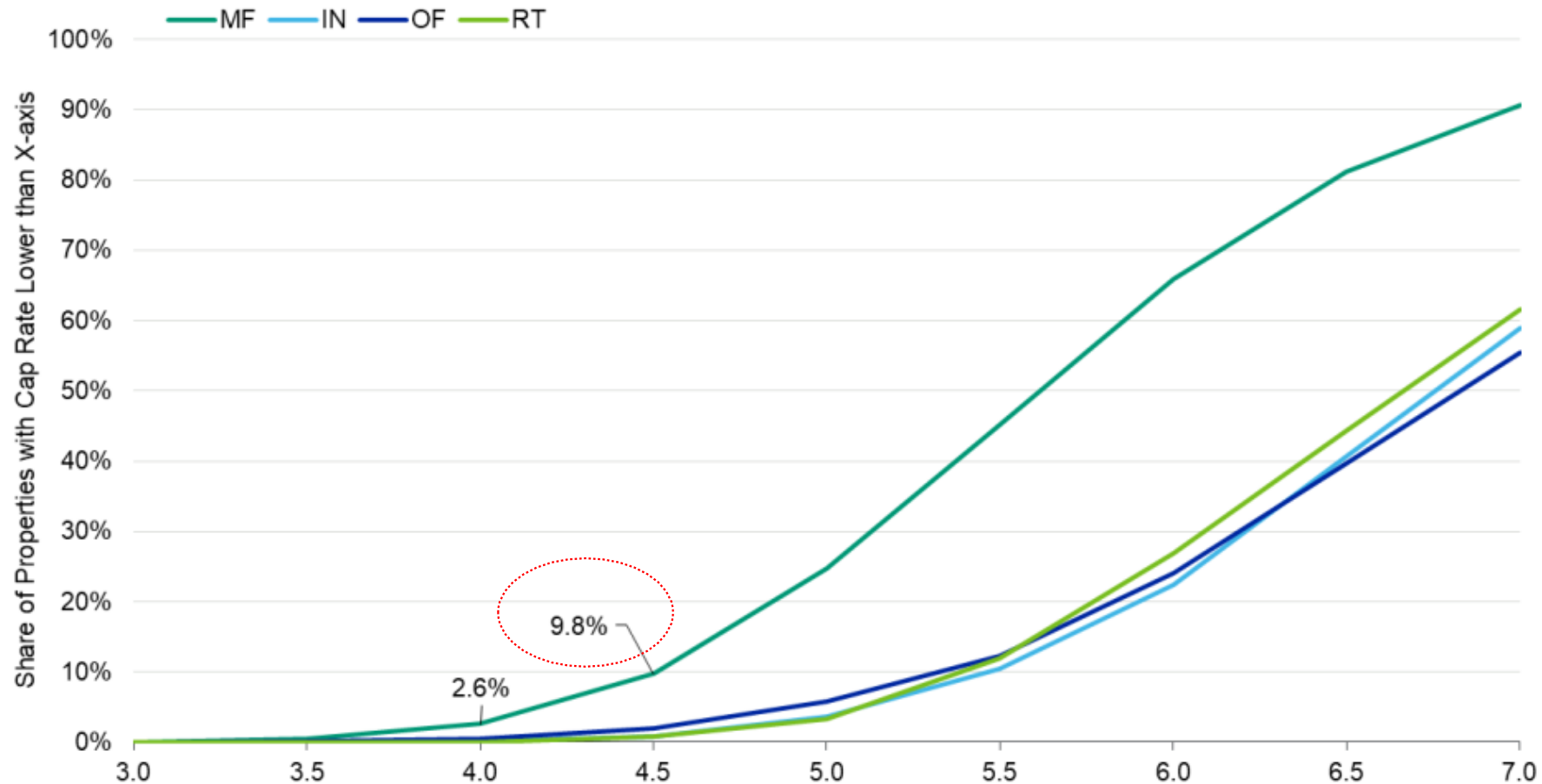
General Flatness – but Beware the Fed

- » Cap rates expected to post modest increases through 2023.
- » But what is our 10 yr TSY outlook and when does that risk-free benchmark peak?
- » What are the push and pull dynamics around cap rate trends? Where do you believe things will end up?



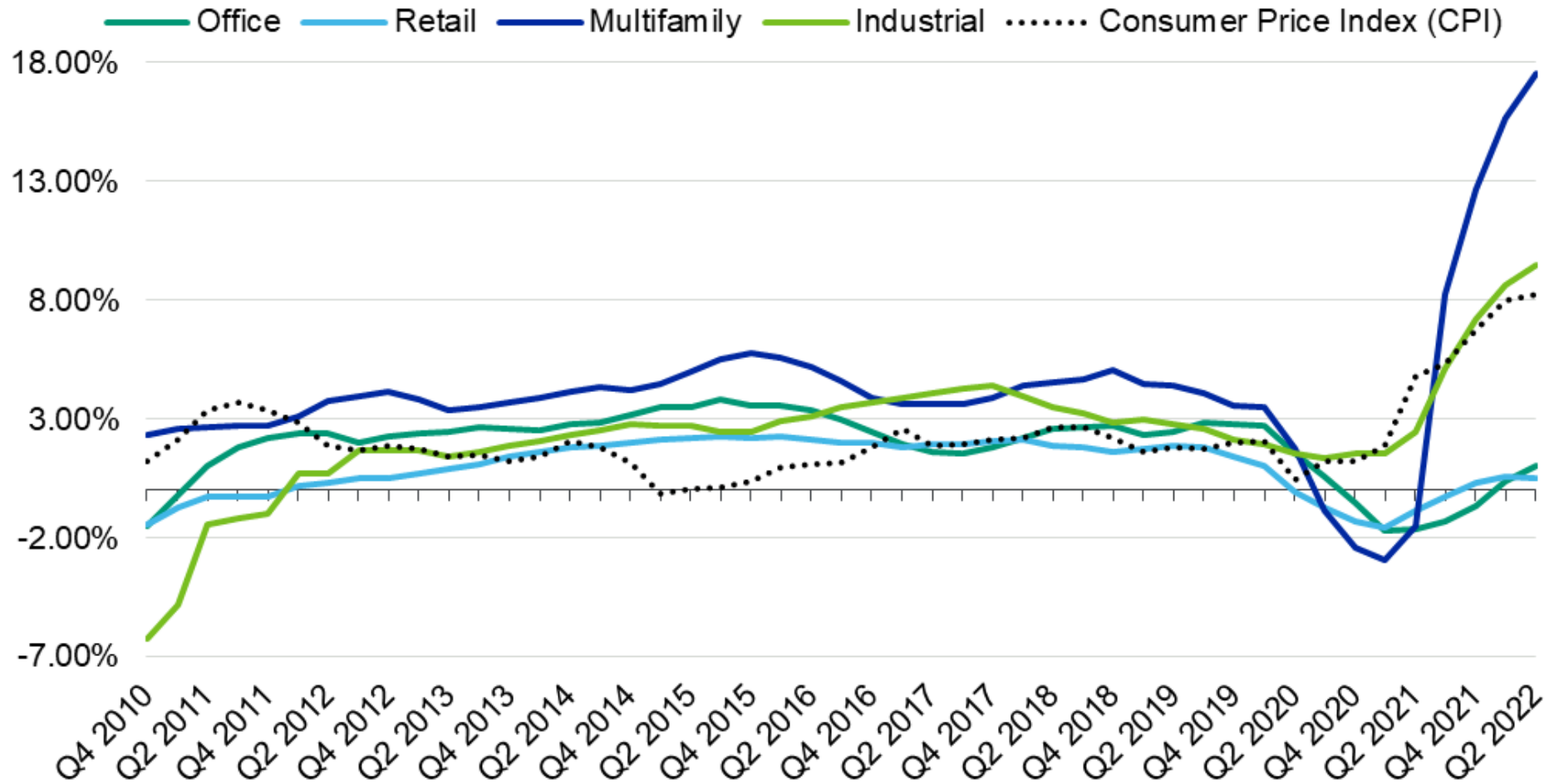
Source: Moody's Analytics REIS

MF cap rates skew low



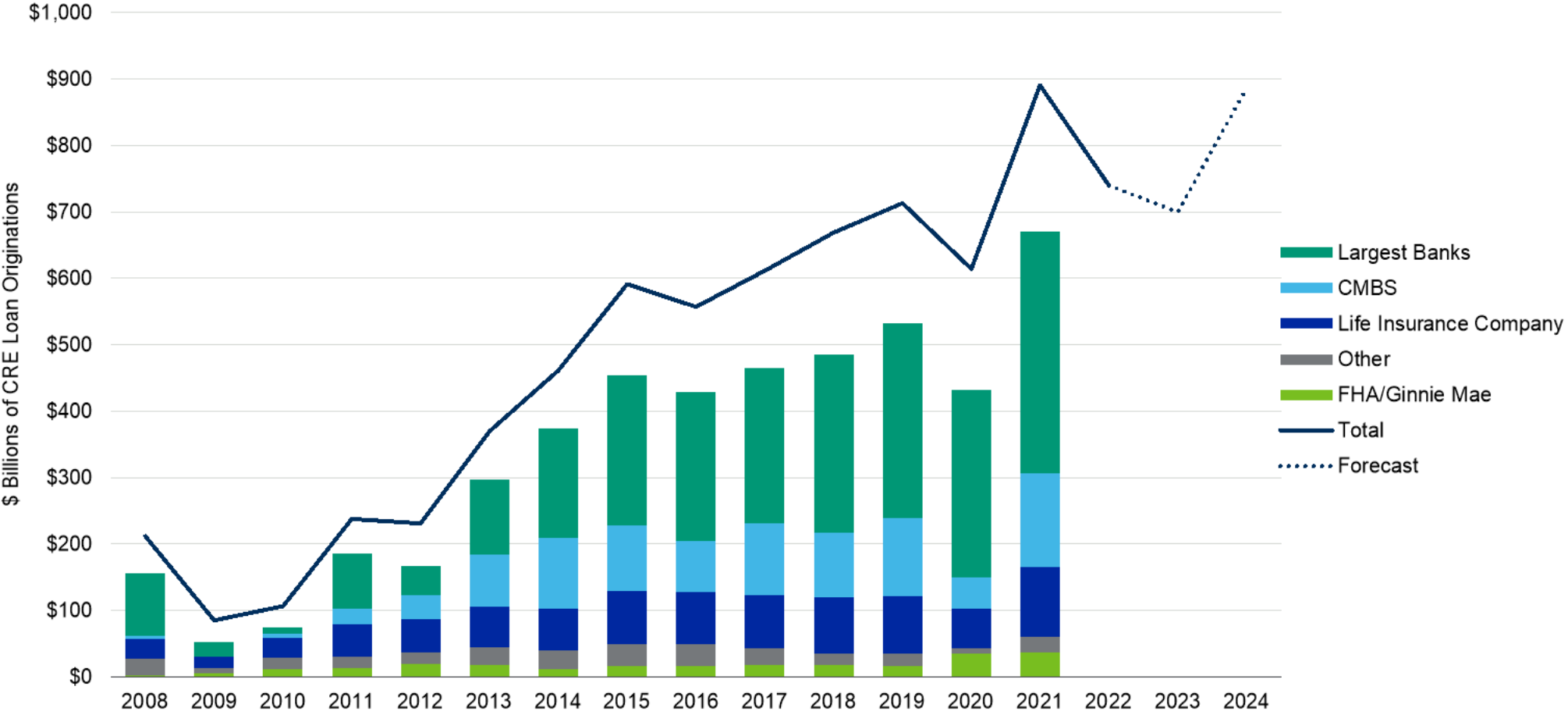
Source: Moody's Analytics CRE/CMBS. Data thru March 15, 2022.

Rent Growth and Sticky Cap Rates Buoy Values



Sources: Moody's Analytics CRE, Bureau of Labor and Statistics (BLS)

The Latest Forecasts for CRE/MF Originations



Sources: Mortgage Bankers Association, Moody's Analytics CRE

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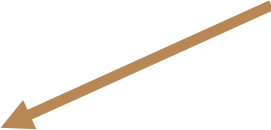


The Future of Office

Evolving spaces from functional to experiential:

- Providing amenities and services to enhance the customer experience.
- Inviting spaces such as our common areas, lobbies and outdoor terraces – designed to welcome, restore, inspire and foster connections.
- Finding the perfect space for our customers to thrive within our range of workspace styles and solutions
- Understanding customer requirements and helping enhance their work environments that adhere to our ESG standards.
- Carefully consider every detail – from curated playlists to the scent of our lobbies.

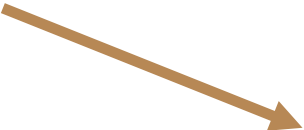
The Future of Office



Customer Experience



Sustainability



Connectivity



Customer Experience

Hospitality is at the core of business. Our customers are a part of a built-in community with access to elevated experiences and inviting spaces



Le Rock, Rockefeller Center, NY



300 Park, New York, NY



320 N. Sangamon, Chicago, IL



Rockefeller Center, New York, NY



125 High Street, Boston, MA



The Franklin, Chicago, IL



Garden Rooftop at Paris Bourse, Paris, France



Rooftop at 125 High Street, Boston, MA



Another Tomorrow, Rockefeller Center, NY

Sustainability

ESG is central to all our developments –creating spaces that match a wider sustainable ethos and improve the communities around it.



Beekeeper at Paris Bourse Rooftop, Paris, France



Studio at AQWA, Rio de Janeiro, Brazil



Studio Gather at 407 N Maple, Los Angeles, CA

Connectivity

Customers will increasingly seek spaces that intersect cutting edge infrastructure and technology to build collaborative environments, fostering connections and innovation.



JACX & CO, New York, NY

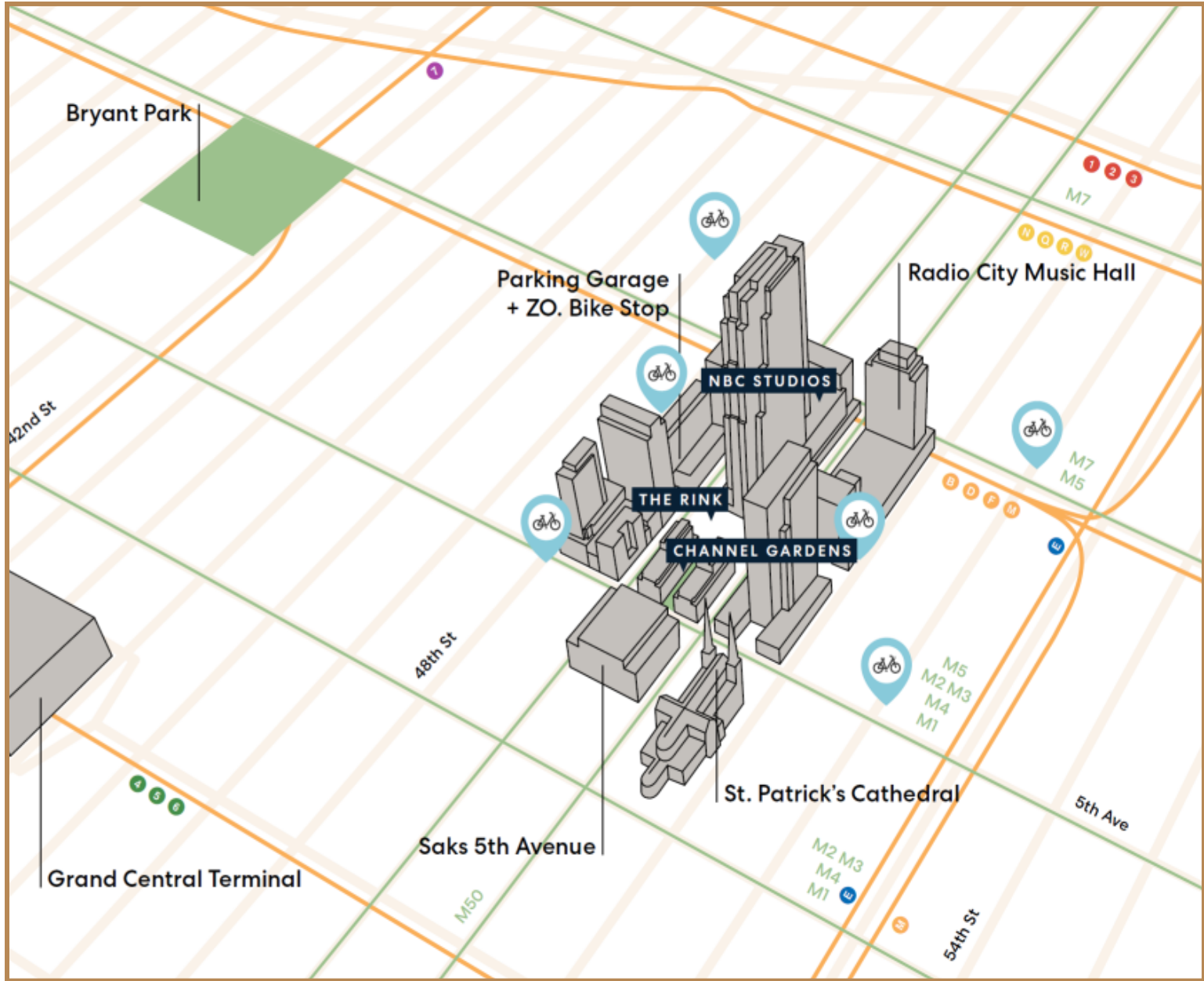


ZO Clubouse at 222 North Lasalle, Chicago, IL



ZO Clubhouse, 320 N. Sangamon, Chicago, IL





Rockefeller Center Overview

6M
Square feet of office space

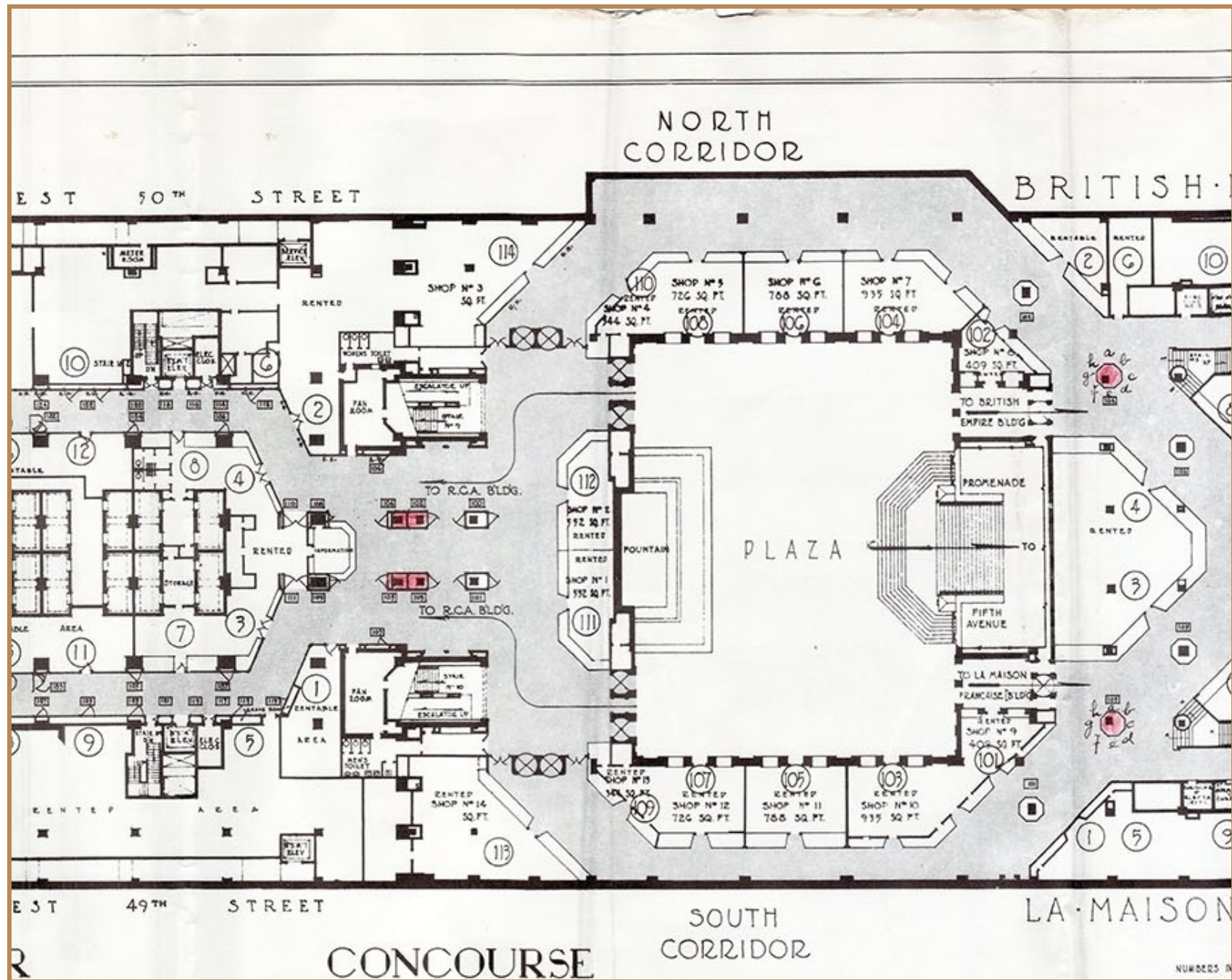
650K
Square feet of retail space

115+
Retail shops & restaurants

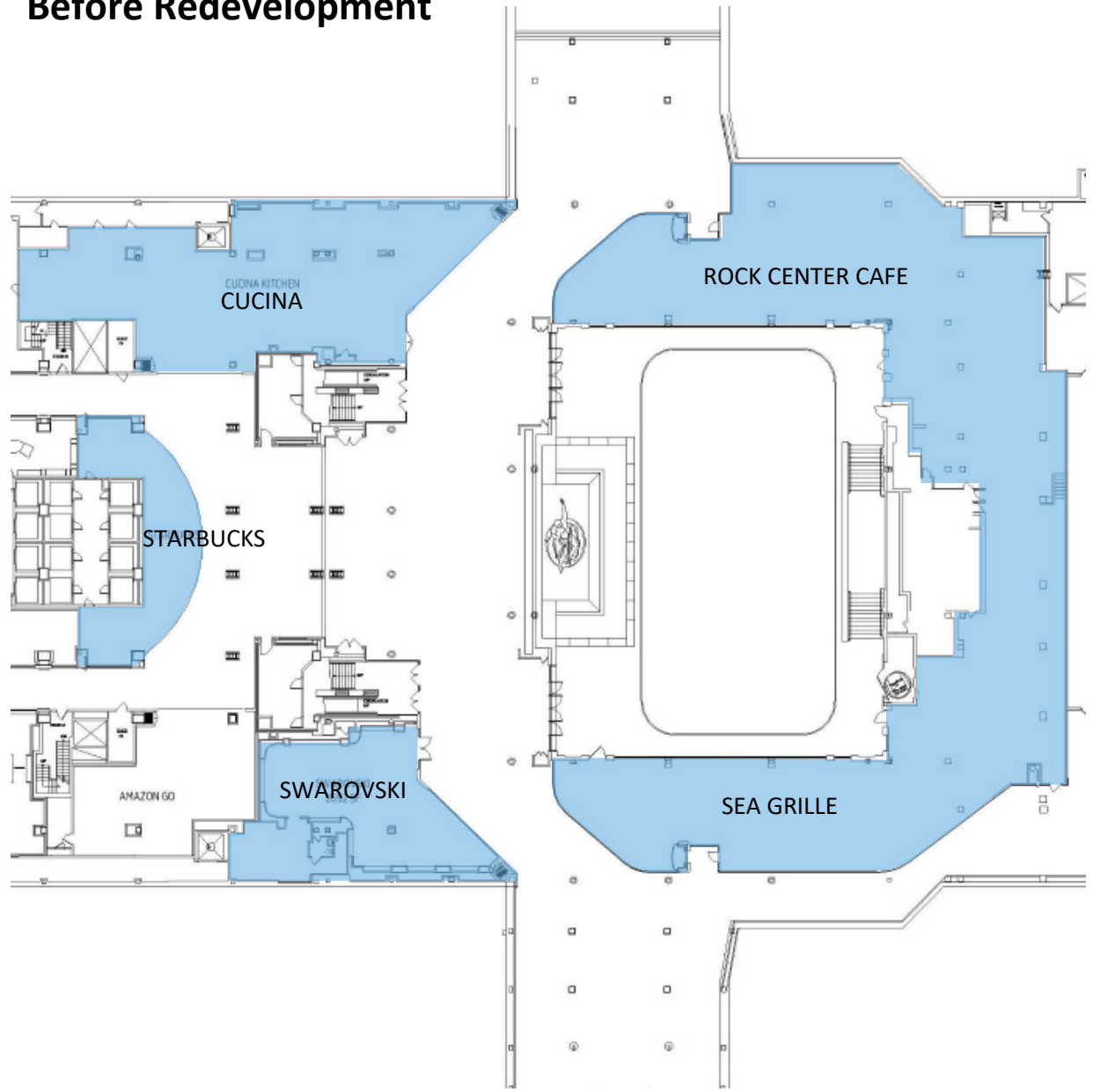
986K
Followers across Rockefeller Center social media channels

251K
Website visits per month

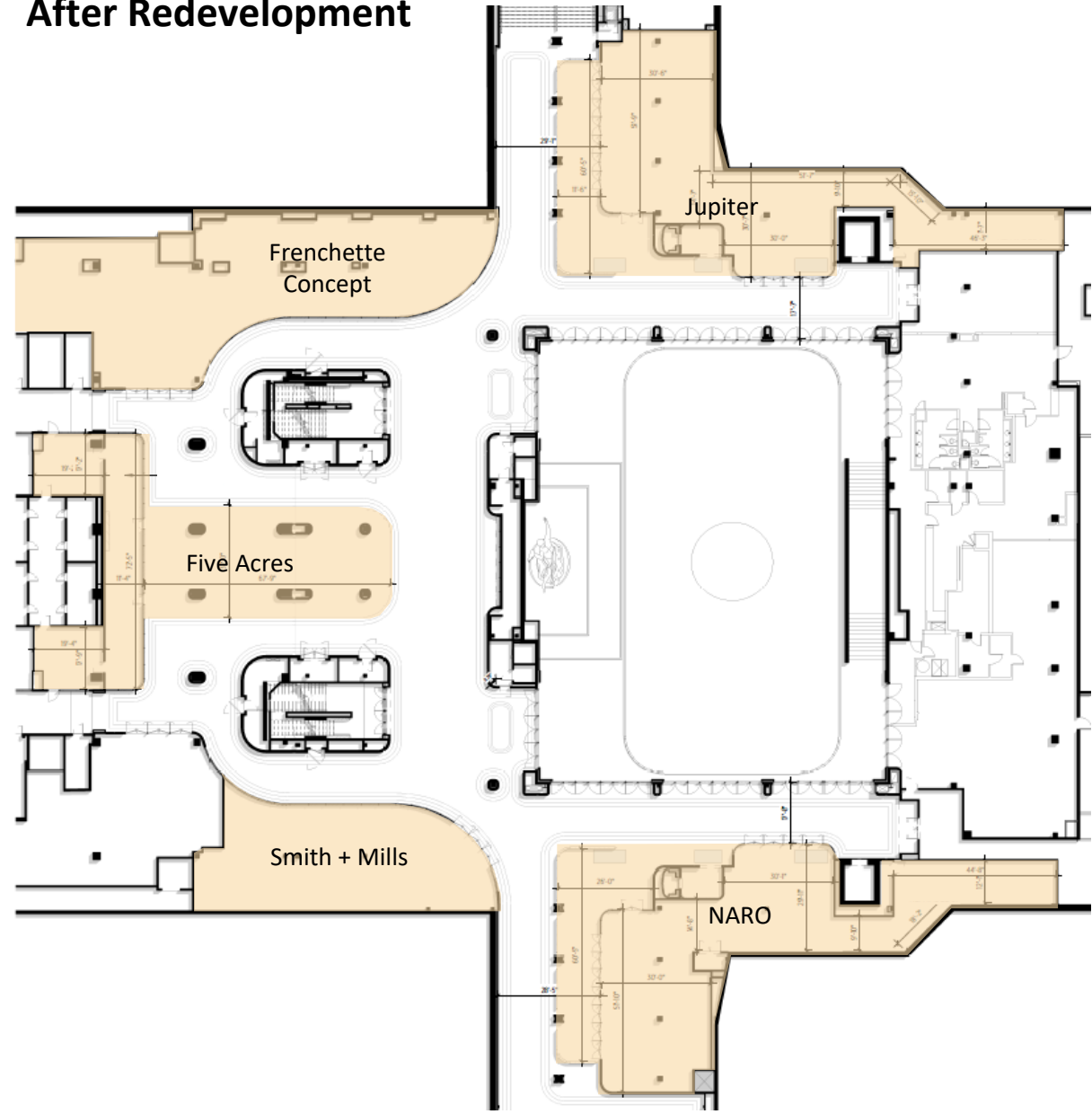
88K
Email newsletter subscribers



Before Redevelopment



After Redevelopment



Rink Level, 1940s



LOWERS
REPEL
ROCKEFELLER CENTER
123 WEST 57th STREET
FIFTH AVENUE

PERERA COMPANY
FOREIGN EXCHANGE
BOUGHT & SOLD
MONEY REMITTS
LETTERS OF CREDIT
HEAD OFFICE
636 FIFTH AVENUE
PERERA COMPANY
STREET FLOOR THIS BUILDING
PLAZA 7

Rink Level, 2020

CHANGES
ARE COMING!

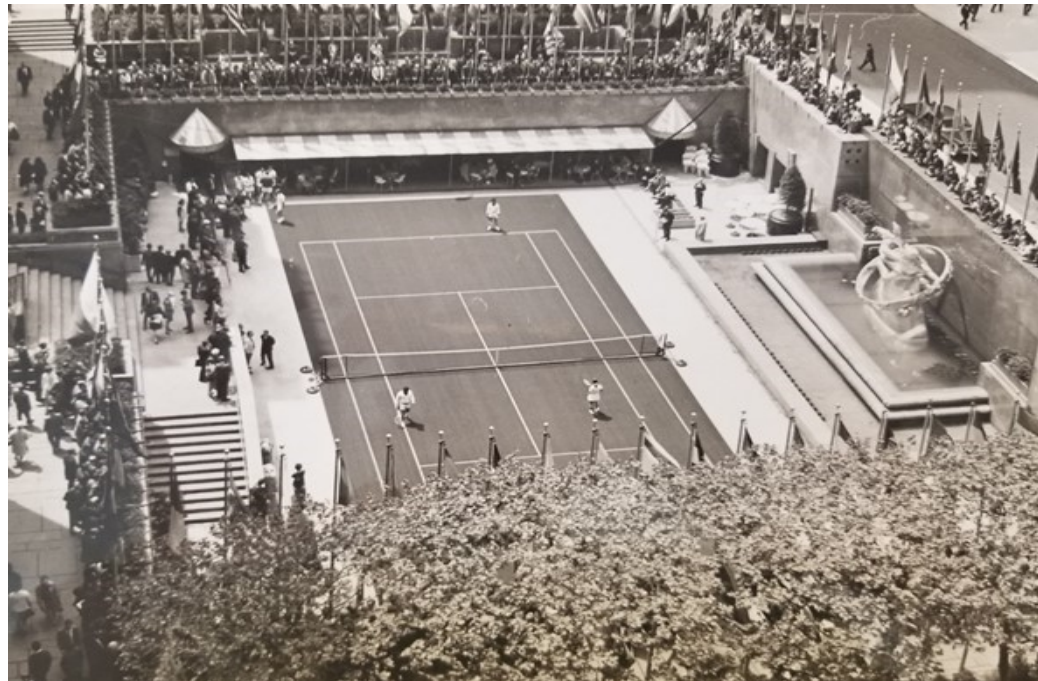
CHECK YOUR 20-APP FOR
CONSTRUCTION AND
CANTEN UPDATES



Rink Level, 2023



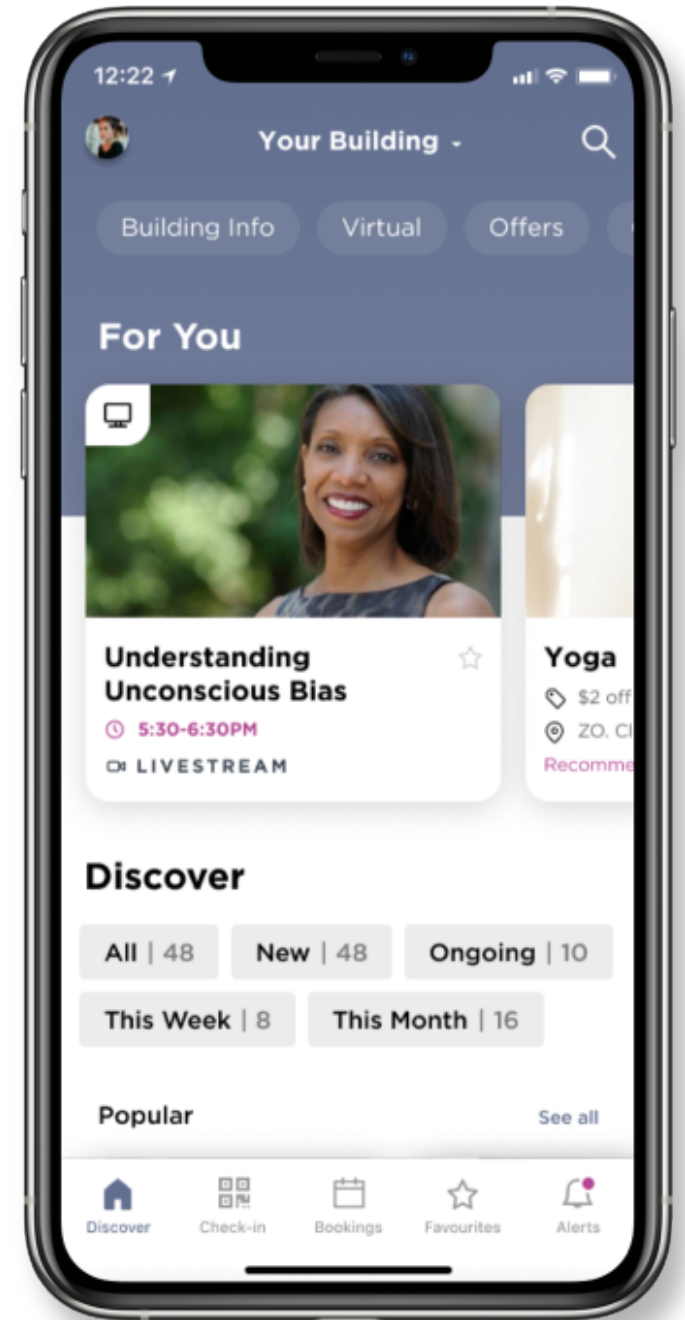
Rink Level, 2023



The Rink, 2023



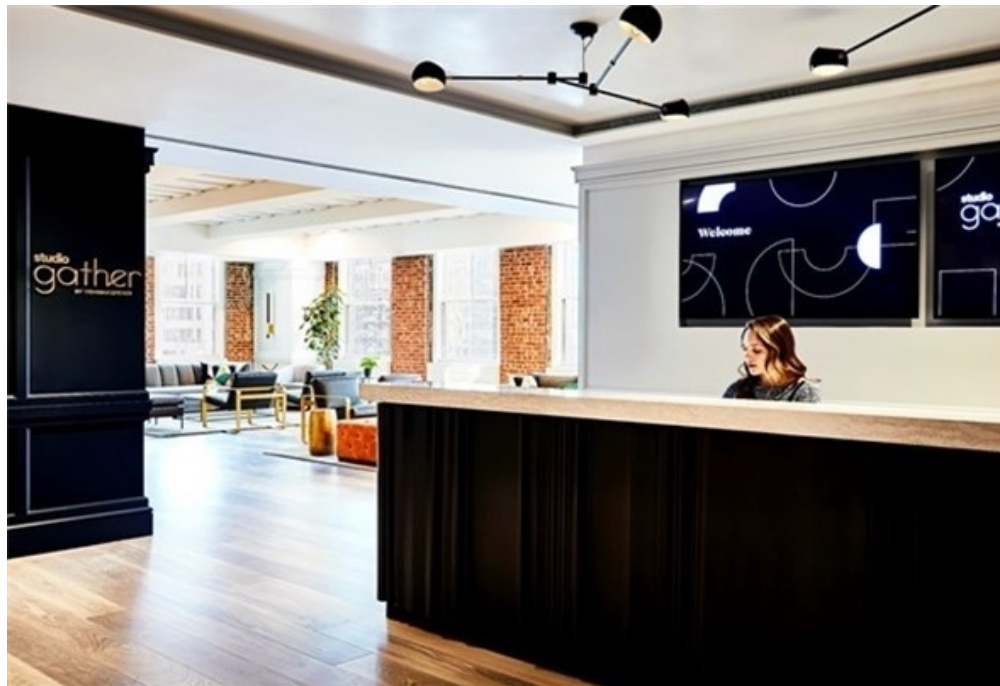
ZO: Beyond The Office



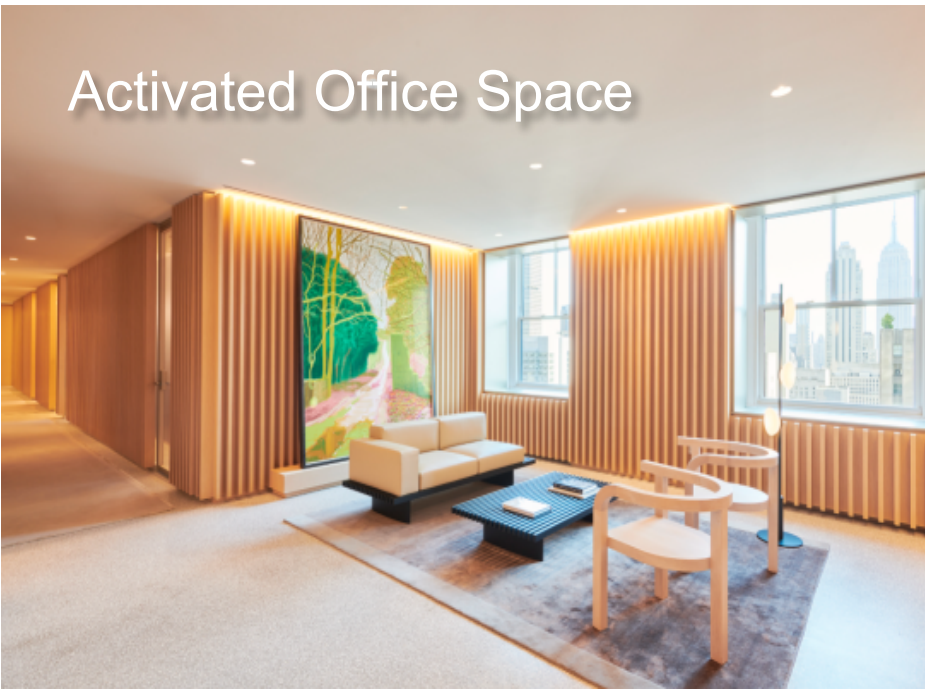
ZO Clubhouse



Studio Gather



Activated Office Space



In The News

NEW YORK TIMES

“Rockefeller Center is the New York restaurant event of the year”



NEW YORK TIMES

“Midtown Manhattan has a pulse again”



THE REAL DEAL

“Forget offices: Young, hip New Yorkers are bringing Midtown back”



VOGUE

“Rockefeller Center’s dining transformation continues in 2022 with a spate of exciting new additions

NEW YORK TIMES

“Le Rock, from the Frenchette team, Opens at Rockefeller Center”



NEW YORK POST

Rockefeller Center is back! The transformation of NYC’s deco icon revealed

ELITE DAILY

“Pete Davidson’s Pebble Bar in NYC is an SNL Hotspot With a Secret Entrance”



NEW YORK TIMES

“No simple breakfast that I know of, In Midtown or any other neighborhood, can beat a Lodi pastry and coffee”





Armando Cabral



Bembien



Todd Snyder



Kule



Rough Trade



Girl Knew York



"Plantoir", Claes Oldenburg



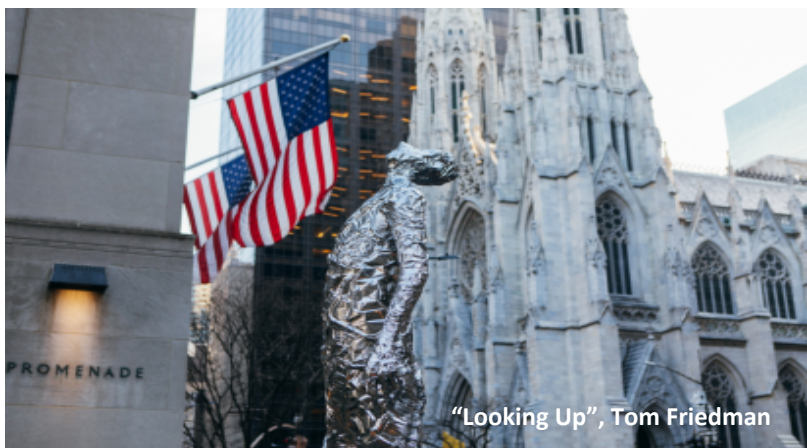
Jenny Holzer x PEN America



MASA's "Intervención/Intersección"



"Dawn Chorus" & "Speculations" Sarah Meyohas



"Looking Up", Tom Friedman



KAWS

Public Art at Rockefeller Center

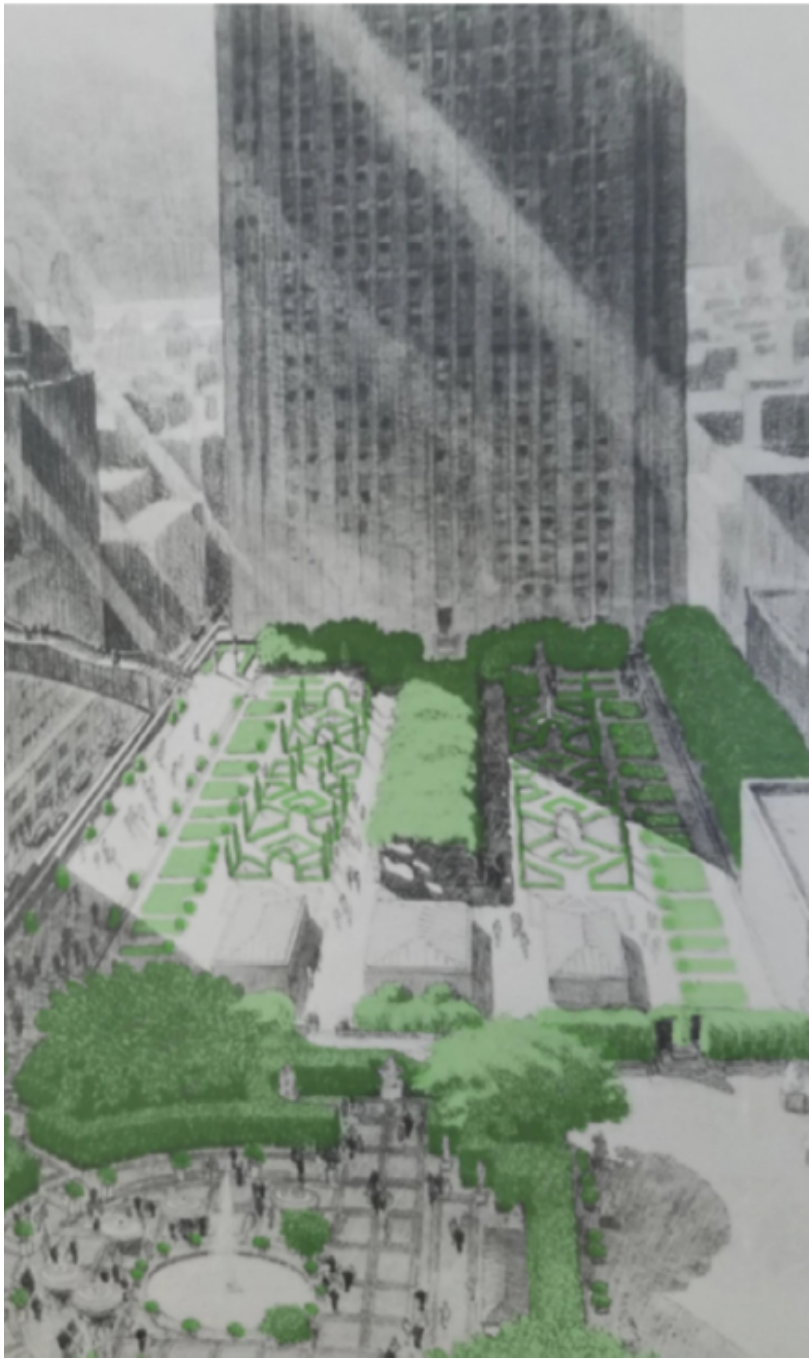
Rockefeller Center is home to the largest permanent outdoor collection of public art in New York. We also curate seasonal installations throughout the year across our plazas and public spaces – locations available to Christie's to enhance marquee sales and drive foot traffic into Christie's.

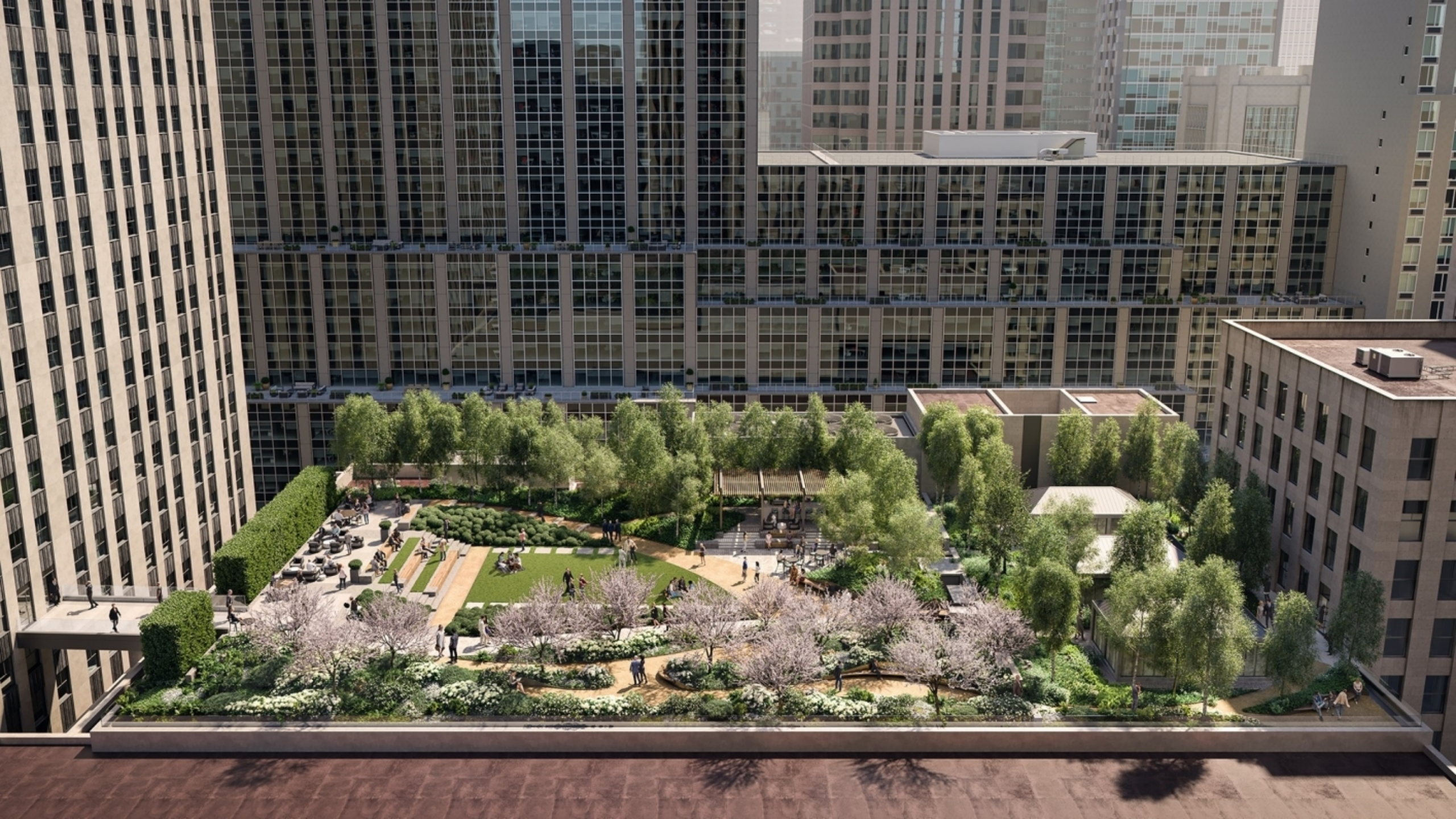


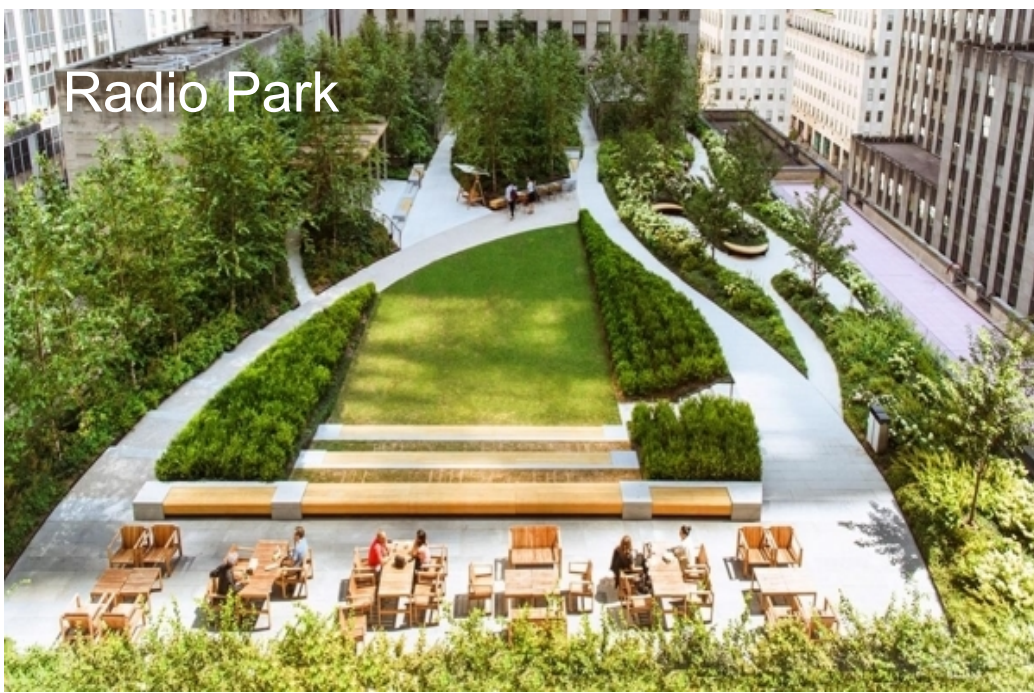
Radio Park

Located atop Radio City Music Hall, the park boasts 24,000 square feet of private outdoor space exclusively for tenants. A rooftop park was part of the original vision for the Center, which we've realized as we make a best-in-class tenant experience a top priority.

With lush greenery, lounge seating, and picnic tables, this is an urban oasis unlike any other green space in the city – a luxe escape from a busy workday and a bustling neighborhood.







50 Rockefeller Plaza



45 Rockefeller Plaza



1 Rockefeller Plaza



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