



Real Estate Strategy Semi-Annual Report (Open Session)

Prepared for California State Teachers'
Retirement System

As of Q1 2022

RFA
RCLCO FUND ADVISORS

The information contained in this report is confidential, may be legally privileged, and is intended only for the use of California State Teachers' Retirement System.



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CalSTRS Q1 2022 Open Session Report

Goals and Objectives

The objective of this semi-annual report is to provide the Committee with an evaluation of the real estate portfolio's alignment with CalSTRS' established goals and policies and the investment opportunities presented by property and capital markets.

To accomplish the above objective, we reviewed the CalSTRS portfolio, policies and limitations, previous recommendations and activities, as well as current and forecasted economic, capital market, and property market conditions.

Current and long-term portfolio goals and objectives that the semi-annual report evaluates include:

- ▶ A current real estate allocation target of 14%;¹
- ▶ Target a net return that exceeds the NCREIF NFI-ODCE Index;
- ▶ Provide stable cash flows, a hedge against inflation, and improved diversification to the overall CalSTRS Investment Portfolio;
- ▶ Allocation based on property stage – stable and value creation (lease-up/reposition and construction) – to maintain an appropriate risk profile; and
- ▶ An appropriate level of leverage, with a loan-to-value (LTV) limit of 50% for the control portfolio and 65% for the non-control portfolio.



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¹ Effective July 1, 2022, the real estate target allocation was increased to the long term target of 15%.
Source: CalSTRS

Returns

As of Q1 2022

- ▶ The Real Estate portfolio has outperformed its target return benchmark over the last decade. The Portfolio has generated a 5-year net TWR of 11.4%, outperforming the ODCE benchmark return of 8.9% by 250 basis points, and a 10-year net TWR of 11.3%, outperforming the ODCE benchmark return of 9.9% by 140 basis points.
- ▶ The Real Estate portfolio has generated net TWRs of 27.2% and 12.8% over the 1- and 3-year time horizons, outperforming the ODCE benchmark return of 10.3% by 250 basis points over the 3-year period, and slightly underperforming over the 1-year period.
- ▶ The portfolio has essentially matched the record ODCE return of 27.3% over the 1-year period (slightly underperforming by 10 basis points), largely due to an under allocation to industrial properties and continued drag from the Legacy portfolio.

Portfolio Performance¹

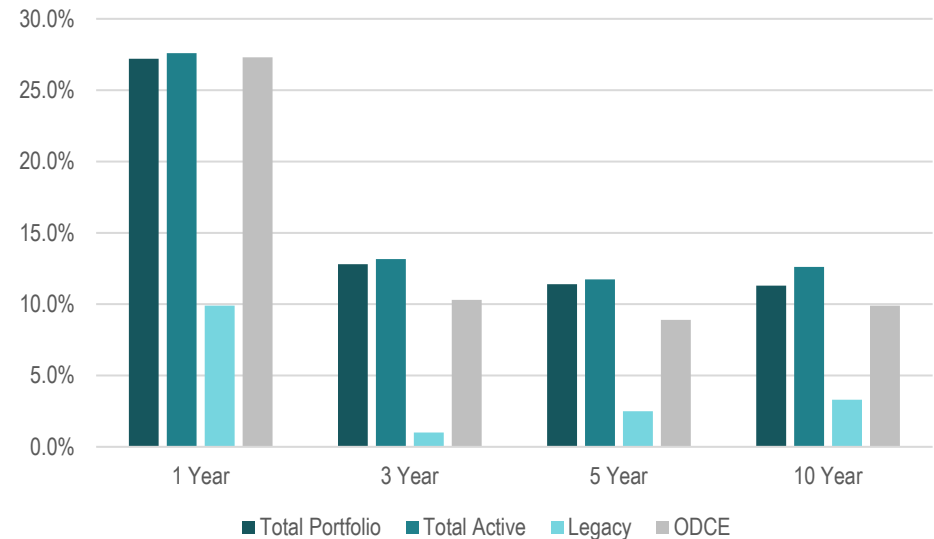
Net Time Weighted Returns

Including Legacy

Excluding Legacy

	1 Yr	3 Yr	5 Yr	10 Yr	1 Yr	3 Yr	5 Yr	10 Yr
Core	27.5%	12.3%	10.9%	11.3%	27.5%	12.3%	10.9%	11.3%
Value Add	27.8%	13.5%	12.6%	14.9%	27.8%	13.6%	12.5%	15.4%
Opportunistic	26.0%	13.8%	12.0%	9.8%	27.8%	16.3%	14.5%	14.3%
Total	27.2%	12.8%	11.4%	11.3%	27.6%	13.2%	11.7%	12.6%
Target Return (ODCE)	27.3%	10.3%	8.9%	9.9%	27.3%	10.3%	8.9%	9.9%

Historical Net Time-Weighted Returns



¹Green cells denote outperformance of the target return metric. The Core portfolio has a net target return benchmarked to the ODCE, while the Value Add and Opportunistic portfolios have net target returns of 50 basis points and 300 basis points over the ODCE, respectively.

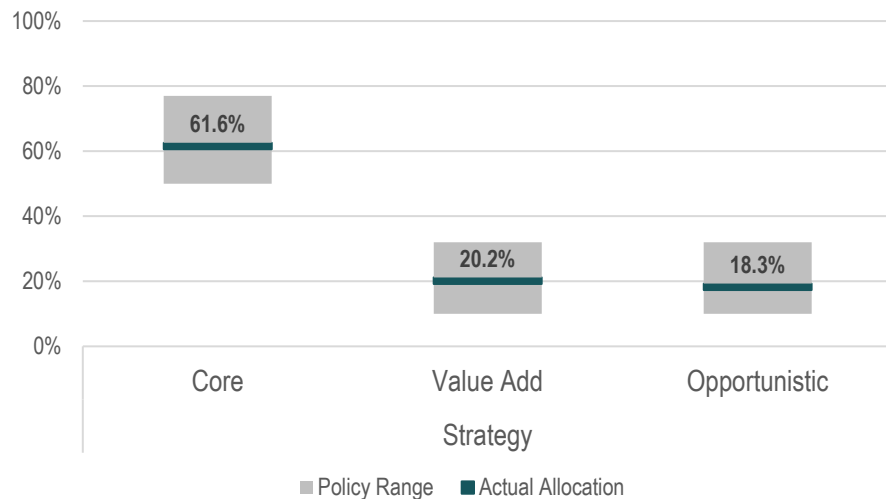
Source: State Street, NCREIF

Funding Status and Compliance

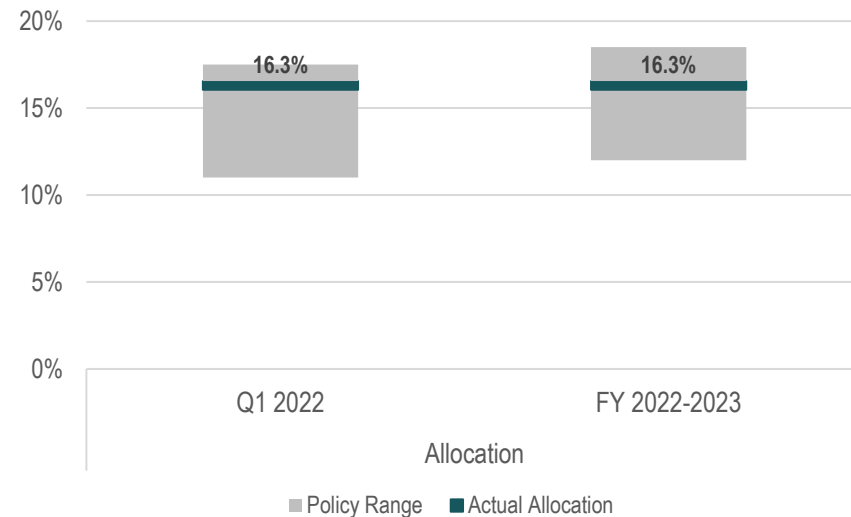
As of Q1 2022

- ▶ The CalSTRS Real Estate Portfolio had a NAV of \$49.2B as of Q1 2022, comprising 16.3% of the total CalSTRS Fund as of Q1 2022 (~\$301.6B), above the target allocation as of Q1 2022 of 14.0%, but within the policy range of 11.0% - 17.0%.
- ▶ The target allocation was increased to 15.0% in June 2022; the real estate allocation remains above the new target, but within the policy range of 12.0% - 18.0%.
- ▶ The portfolio is compliant with the targeted allocation by investment strategy and is within the permitted leverage limits as outlined by the Real Estate Investment Policy Statement.

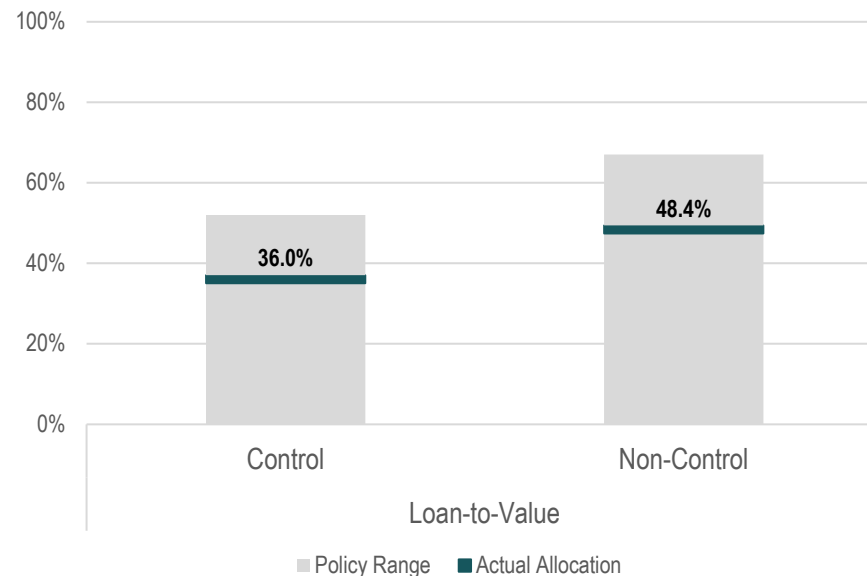
Compliance – Strategy¹



Compliance - Allocation



Compliance - Leverage



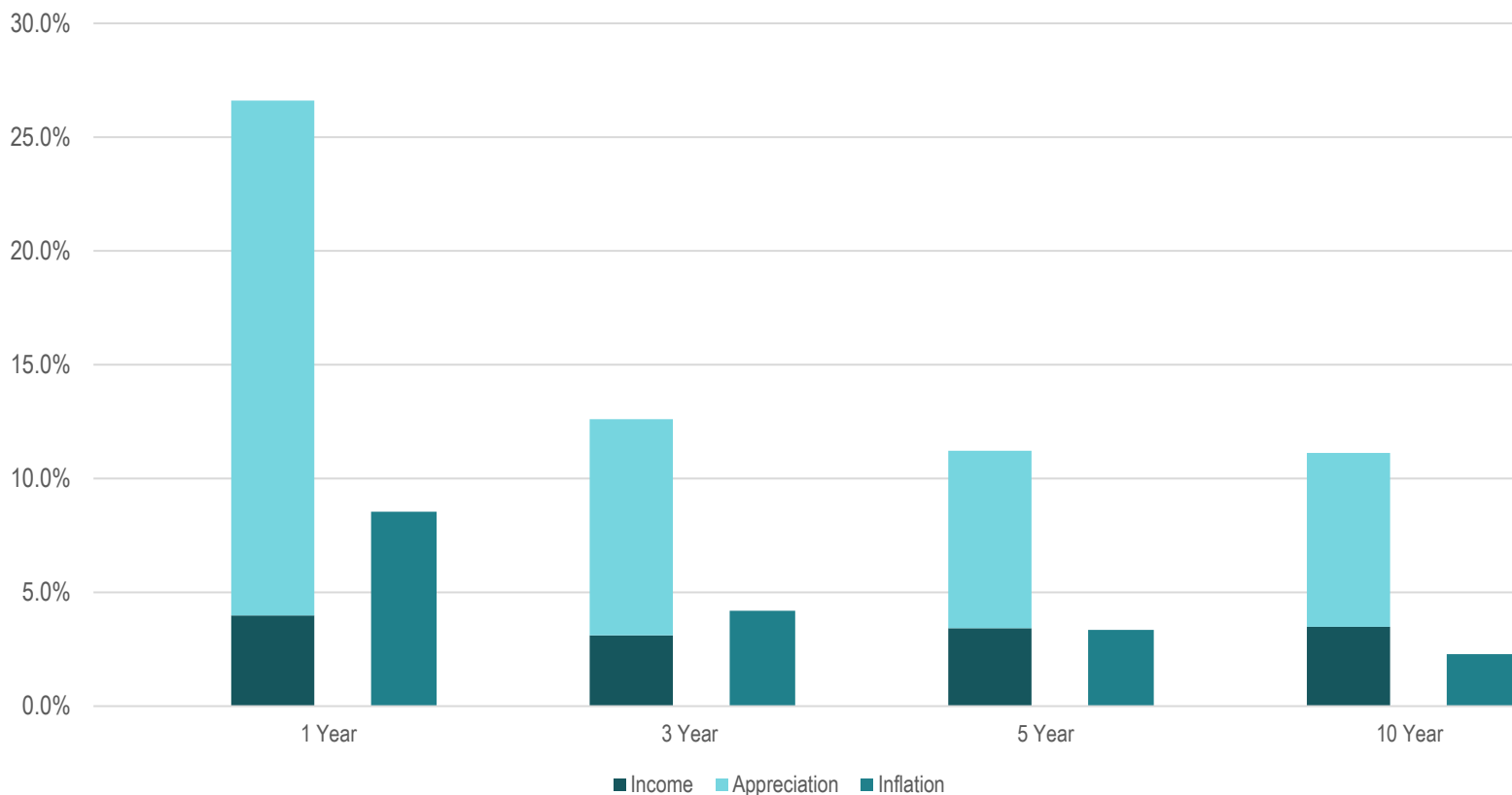
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¹Percentages do not account for the portion of Legacy assets. Public REITs included with Core. Source: CalSTRS; State Street; NCREIF

Outperforming Inflation

- ▶ While inflation has accelerated over the past year, real estate returns have significantly outpaced inflation, driven by appreciation.
- ▶ Income and appreciation returns have been more stable over the 3-, 5-, and 10-year time horizons, with income returns generally keeping pace with inflation.

Net Time-Weighted Returns vs. Inflation



Current Portfolio Summary

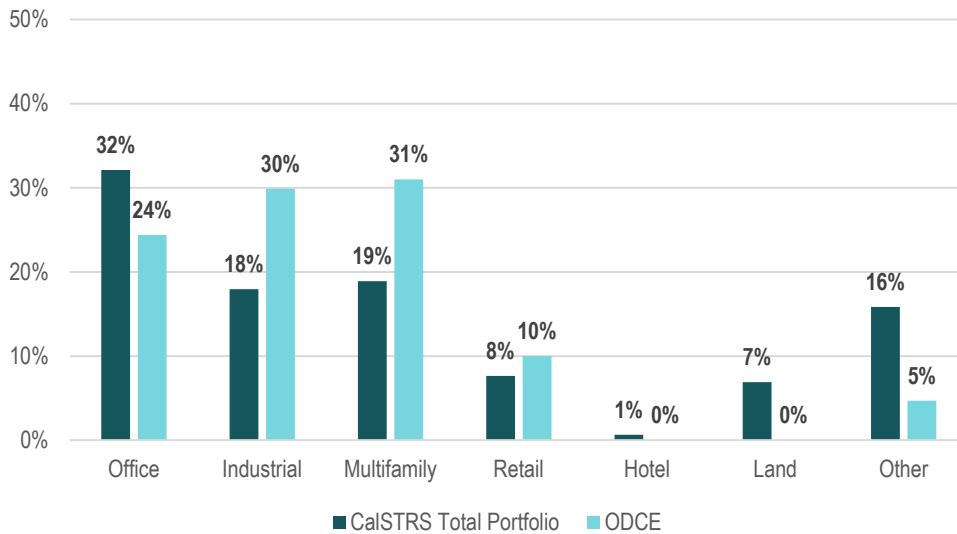
- ▶ Real estate NAV totaled \$49.2B as of Q1 2022, comprising 16.3% of the total CalSTRS Fund (~\$301.6B), above the FY2022-2023 target allocation of 15%, but within the policy allocation range to real estate of 12% to 18%. Control¹ investments represent almost 80% of real estate NAV.
- ▶ The portfolio is globally diversified, though U.S. real estate represents approximately 84% of investment value. Outside of the U.S., the largest country exposures are the U.K., Japan, Canada, China, Germany, Australia, and Singapore.
- ▶ The allocation to office decreased 2.9%, though remains 7.7% overweight relative to the benchmark. When excluding life science office properties, the overweight to office is approximately 2.0% relative to the benchmark.
- ▶ The portfolio continues to be 11.9% and 12.1% underweight industrial and multifamily, respectively. The underweights to industrial and multifamily could create drag as these are current and projected winners in the near- to medium-term.
- ▶ The allocation of assets by risk profile is 62% to core, 20% to value-add, 18% to opportunistic assets, and 1% to Legacy assets.
- ▶ CalSTRS' real estate debt totals \$30.6B as of Q1 2022. When measured in percentage terms, the LTV of the portfolio decreased from 41% to 39% over the last six months.
- ▶ The LTV of the Control portfolio is 36% in Q1 2022, within the limit of 50%. The non-control LTV is 48% as of Q1 2022, in compliance with the 65% LTV limit.

Portfolio Diversification

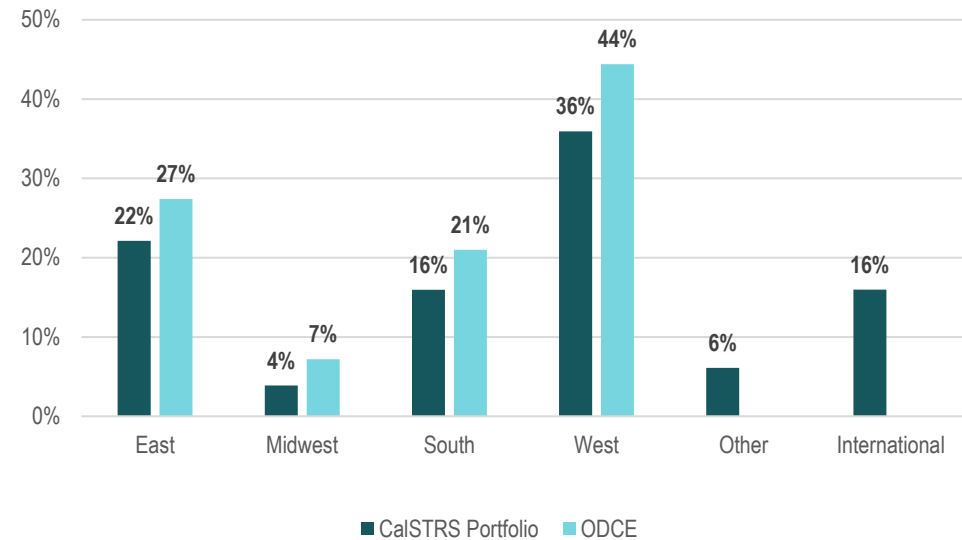
Property Type and Geographic Diversification vs. ODCE

- ▶ CalSTRS’ real estate portfolio remains overweight to office investments compared to the ODCE and underweight multifamily and industrial. The total portfolio has a 7.4% allocation to real estate debt investments, resulting in an overweight to the “Other” category.
- ▶ The allocation to office decreased 2.9% over the last six months, though remains 7.7% overweight relative to the benchmark. When accounting for life science properties, the office allocation is closer to the benchmark.
- ▶ The portfolio continues to be 11.9% and 12.1% underweight industrial and multifamily, respectively. The underweights to multifamily and industrial could create drag as these are current and projected winners in the near- to medium-term.
- ▶ The portfolio is globally diversified but approximately 84% of value is concentrated in the U.S. The largest exposures outside of the U.S. are the U.K., Japan, Canada, China, Germany, Australia, and Singapore.

Total Portfolio - Property Type Diversification¹



Total Portfolio - Geographic Diversification²



Note: ODCE and CalSTRS’ property type and geography weights based on gross real estate value.
¹“Other” property type category is made up of the following property types in descending order by percentage: Other, Mixed Use, Debt, Diversified, Manufactured, Senior Living, Healthcare, Hospitality, Various, Self Storage, Infrastructure, Entertainment, Securities, REITs, and parking.

² “Other” geographic category represents mostly U.S. diversified or uncategorized U.S. investments.

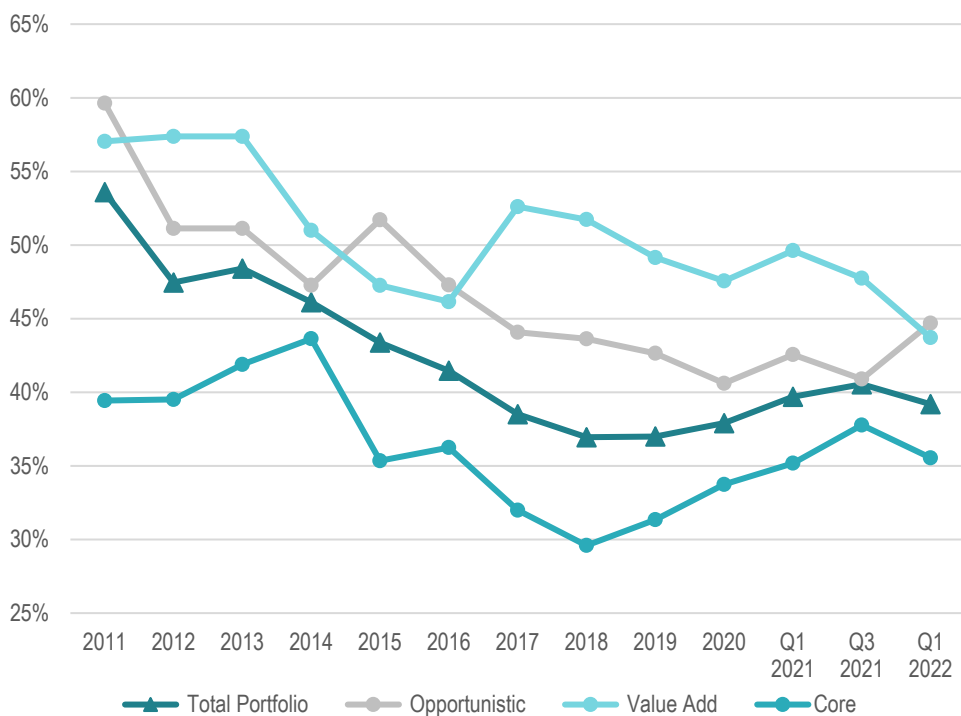
Source: State Street

Total Portfolio Leverage

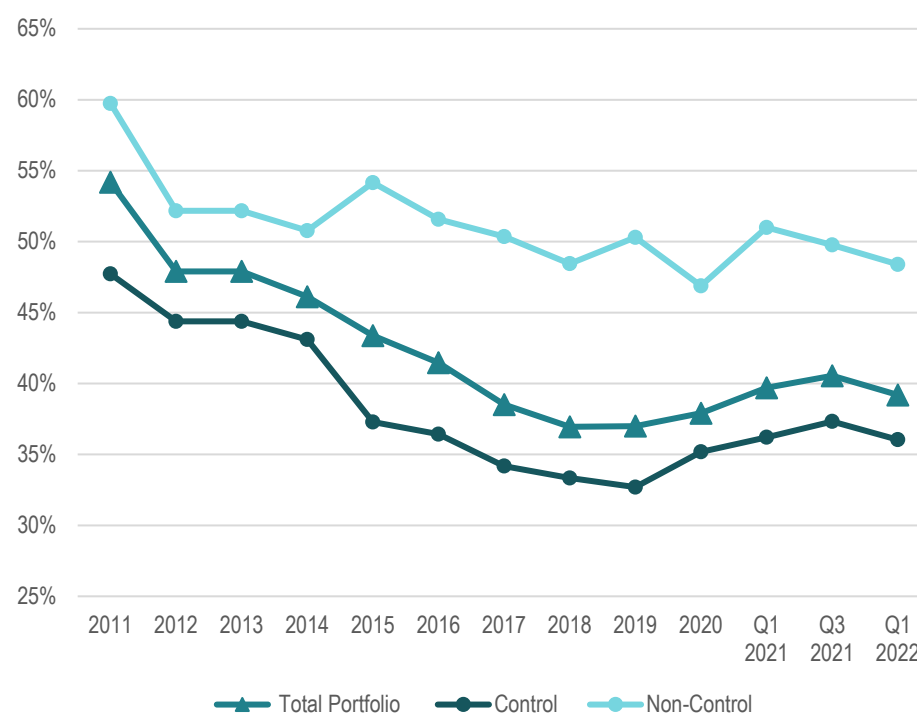
By Risk Profile and Control

- ▶ CalSTRS' real estate debt totals \$30.6B as of Q1 2022, an increase of \$2.4B since Q3 2021. When measured in percentage terms, the LTV of the portfolio decreased from 41% to 39%.
- ▶ The LTV of the controlled¹ portfolio decreased to 36% in Q1 2022, well within the policy limit of 50%. The non-control LTV decreased from 50% to 48% over the last six months and remains well within the 65% limit.

Portfolio Leverage – By Risk Profile



Portfolio Leverage – By Control



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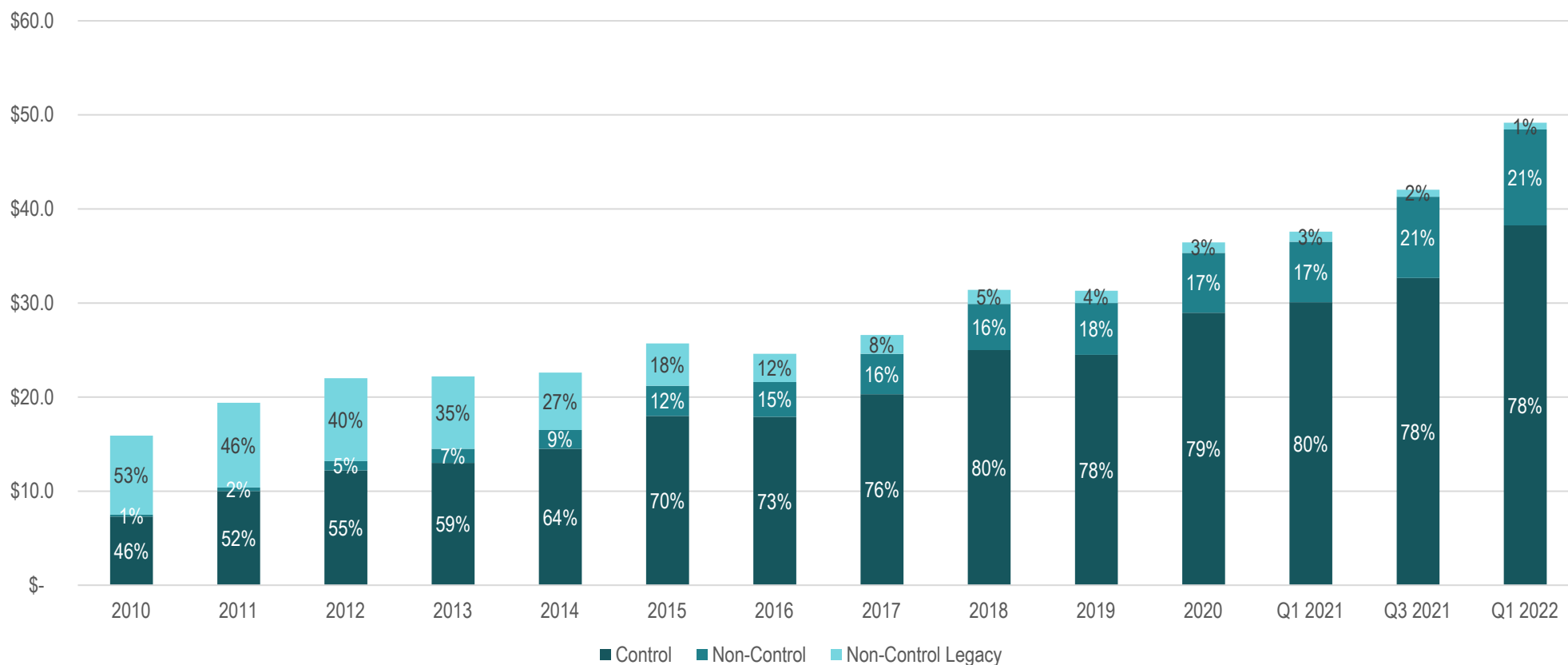
¹ Control investments are those which CalSTRS maintains control over acquisitions, dispositions, and financing, or has high liquidity in normal market conditions.

Source: State Street

Real Estate Portfolio Growth

- ▶ The CalSTRS real estate portfolio NAV has grown by \$7.1B in the past six months to \$49.2B as of Q1 2022. The Control portfolio has consistently been around 80% of NAV since 2018.
- ▶ Legacy investments have fallen below \$1B and now represent just 1% of the portfolio.

Portfolio NAV by Control - Billions



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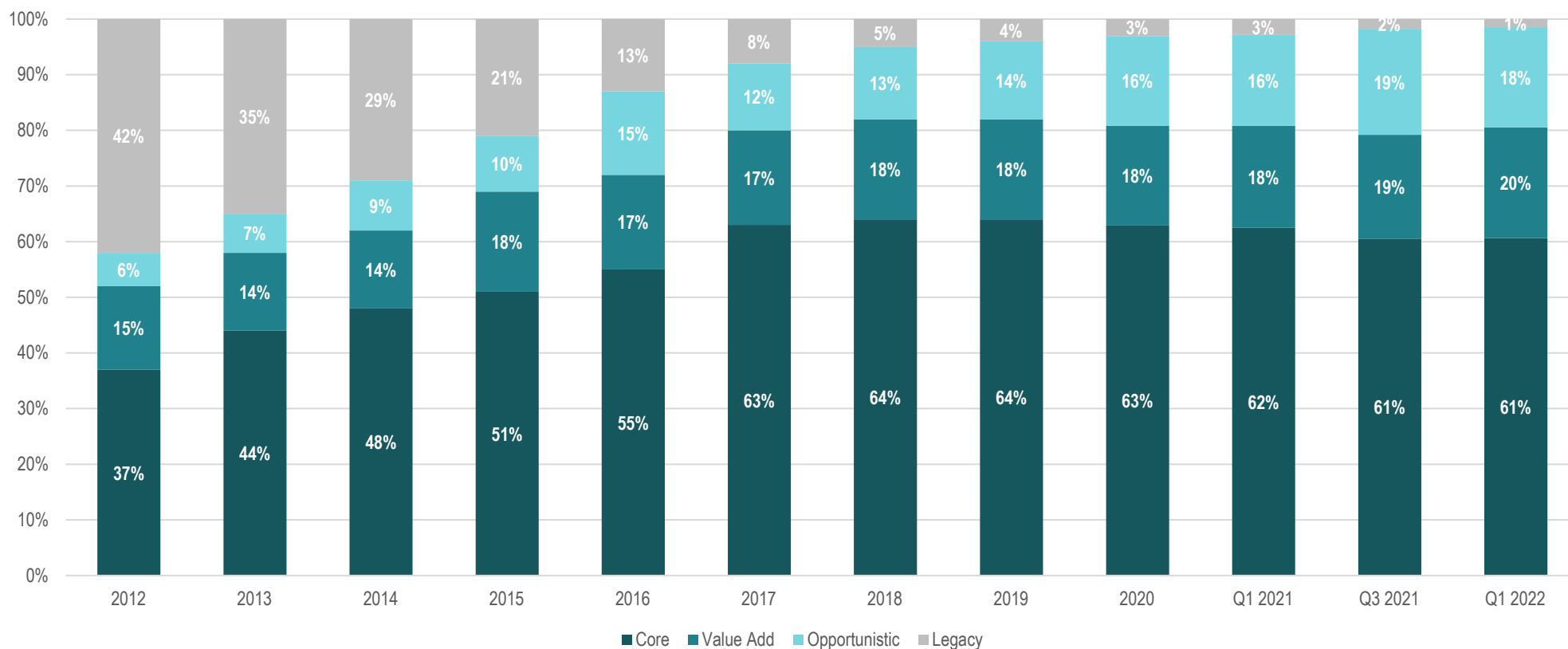
Weights based on percentage of CalSTRS' net asset value

Source: State Street

Portfolio Allocation by Risk Profile

- ▶ Allocations to value add and opportunistic investments have each increased 2% over the past year, while the core allocation has decreased by 1% to 61% of the portfolio.
- ▶ Legacy investments have fallen from 3% to 1% of the portfolio. The decline in the Legacy portfolio should benefit future performance.

Portfolio NAV by Risk Profile



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Weights based on percentage of CalSTRS' net asset value. REITs included in Core
Source: CalSTRS, State Street

APPENDIX: KEY MARKET TRENDS

U.S. Economic Summary

As of July 2022

- ▶ The **Russian invasion of Ukraine continues to drive uncertainty** around near-term economic forecasts particularly for food and energy supplies and prices. These risks are likely to be more acute in Europe but still relevant to the US.
- ▶ The US economy is generally viewed as stuck in **between the risks of a recession and persistent inflation** as the Fed takes its most hawkish policy direction in decades and – in some economists’ views – risks overreaching.
- ▶ **GDP growth was negative for a second consecutive quarter at -0.9% for Q2**, marking a “technical recession” as inventory investments, fixed investments, and government spending all decreased. Exports and personal consumption (led by services) increased.
- ▶ **Job growth moderated somewhat but remained strong (1.1 million) in Q2** for a trailing year total of 6.3 million; nearly all jobs lost to COVID have been restored. The unemployment rate fell to 3.6% in March and remained there throughout the entirety of Q2.
- ▶ **Headline inflation was 1.3% in June and 9.0% for the past year**, the fastest rise since 1981. The TIPs-implied 5-year inflation rate fell 80 bps from the end of Q1 to 2.58% on June 30, indicating market participants’ cooling inflation expectations.
- ▶ The **Federal Reserve has signaled that it will fight inflation aggressively**, kicking off quantitative tightening in June and increasing the Fed Funds target rate by a total of 225 bps YTD to a range of 2.25% to 2.5% as of its July 27 meeting.
- ▶ The **interest rate on the 10-Year Treasury ended Q2 at 2.98%**, up 146 basis points since the start of the year. As of July 27, it was down to 2.78%. Real estate borrowing spreads (both residential and commercial) have widened, and prices are starting to adjust.
- ▶ Private **real estate returns began to moderate but remained high in Q2**, with NFI-ODCE and NPI posting quarterly returns of 4.8% and 3.2%, respectively. Trailing one-year ODCE returns hit a new high at 29.5% with NPI at 21.5%, just below its record. One-year industrial NPI returns moderated 4 ppts but were still exceptionally high at 47.7%. Returns are likely to slow in 2022.

U.S. Real Estate Summary

As of June 2022

- ▶ **Real estate markets continued their strong performance** during the second quarter of 2022 (with the exception of office).
 - » **Multifamily** – Absorption remained strong despite signs of moderation, and new supply was stagnant in Q2. Overall vacancy rates remained at their historically low 5.6% as rents grew by a record high 11.9% YoY.
 - » **Office** – Office absorption improved markedly in Q2 but still totaled just 20M SF, less than a third of the 65M SF of new supply. Positive absorption turned rent growth positive for the first time in six quarters at 0.6% growth YoY. Vacancy remained elevated at 13.8%.
 - » **Retail** – Neighborhood and community retail showed continued signs of recovery in Q2 with above average absorption outpacing deliveries nearly six-fold, a 30-bps decline in vacancy to 7.0%, and 4.2% YoY rent growth, the highest post-GFC growth rate.
 - » **Industrial** – Industrial fundamentals continue to be the most favorable of the main property types. Q2 absorption remained near record highs, outpacing deliveries by 40% and driving vacancies to a new all-time low of 4.2%. Rent growth further accelerated to 10.1% YoY.
 - » **Hotel** – The hospitality sector suffered during the winter as the Omicron variant spread, but performance improved as the wave subsided. Occupancies topped 70% in June 2022, and RevPAR and ADR ended Q2 up 17% and 13%, respectively, YoY.
- ▶ **Transaction volumes declined 8% QoQ to \$160B in Q2**, down from their historic high of \$350B in Q4 2021 which capped a record-setting year. Institutional dry powder remained close to 2021 levels. CMBS spreads have widened as lenders build in uncertainty.
- ▶ **Cap rates have been largely flat over the last six quarters around 5.20%** with modest compression to Q2's average of 5.15%. Anecdotally, some upward pressure is reported due to higher interest rates.

Property Markets Outlook

As Q2 2022

Multifamily

Multifamily’s record-setting performance continued in Q2 with rents up nearly 12% YoY in response to strong demand and lagging supply. Vacancy rates have correspondingly fallen to record lows. Fundamentals are projected to remain favorable but moderate somewhat as net absorption has begun to slow and deliveries increase.

RFA expects mid-term operating and investment performance to be strong. Higher employment, a partial return to offices, and demographic trends should increase renter demand in coming years.

Office

Office rent growth turned positive – increasing a modest 0.6% – for the first time in six quarters in Q2 as absorption meaningfully improved. Vacancies, however, further increased to a new high, underscoring the weakness of office fundamentals.

Newer office buildings have experienced more favorable performance, illustrating a “flight to quality” in office markets. The trend towards greater employee flexibility could be a headwind for the sector.

Retail

Grocery-anchored retail performed well in Q2. Absorption has been strong relative to both historical averages and new supply, and rent growth has increased to record highs.

For retail overall, NCREIF reports that NOI growth has been strong at more than 14% over the past year. Retail NOI remains 5% below pre-pandemic levels with super-regional mall NOI down 16% and power center NOI up 10%.

As commerce further shifts online, retail centers will continue to incorporate experiential tenants.

Industrial

Industrial remains the strongest major property type in Q2 with record low vacancies and rents growing over 10% YoY. Absorption continues to outpace new supply by considerable margins, setting the stage for continued above-average rent growth in the near term.

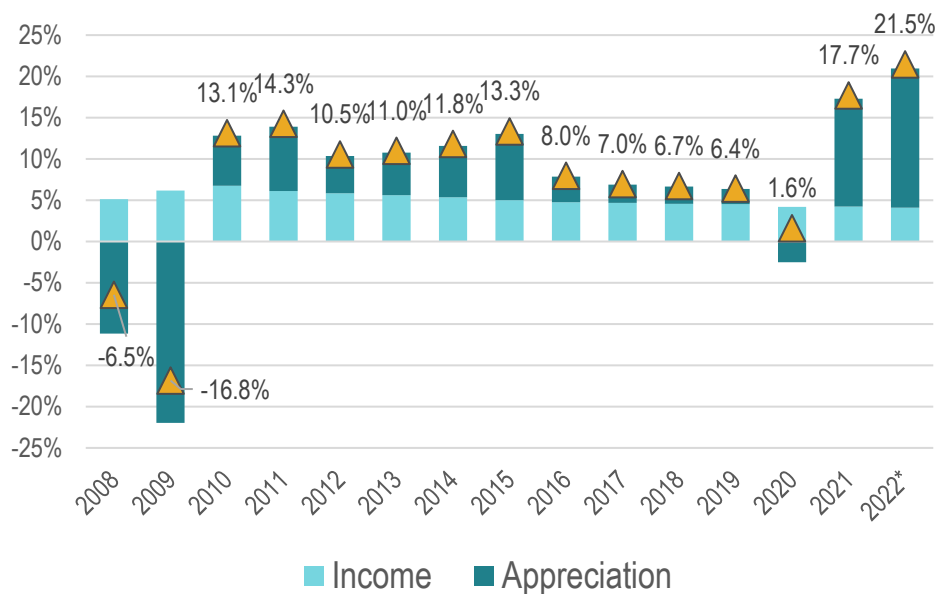
Industrial fundamentals are expected to moderate somewhat but will likely continue to outperform other asset classes through 2023 in part due to strong logistics demand generated by the sectoral shift towards e-commerce.

Rolling 4Q NPI Real Estate Returns Remain Near Forty-year High

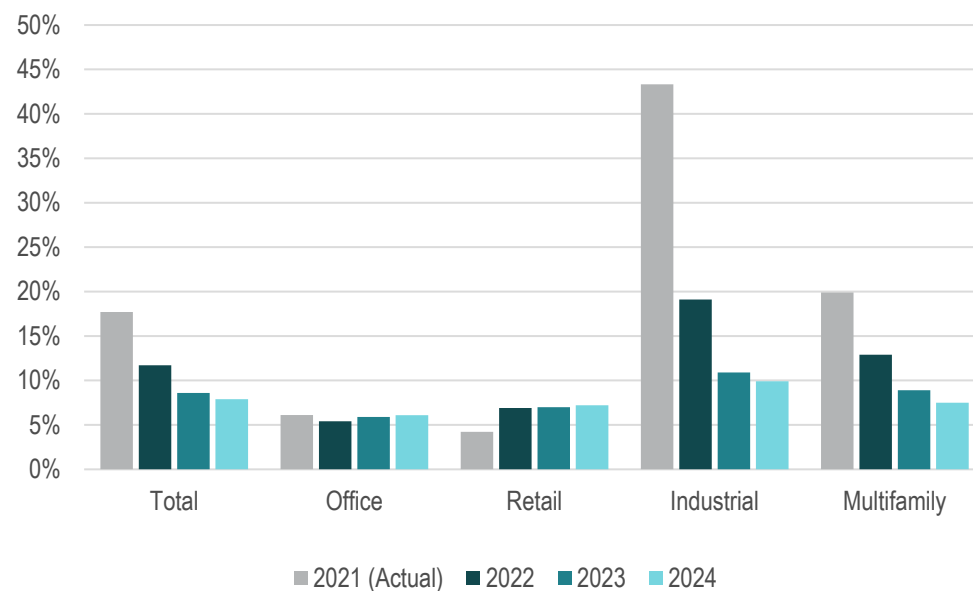
Moderation Projected in Top-performing Industrial and Multifamily; Office and Retail Expected to Be Steady

- ▶ NPI returns began to moderate in Q2 2022, falling to 3.2% with the trailing 4Q return down a modest 40 bps and near a record high.
- ▶ Industrial and apartment performance continued to drive the overall NPI return with office and retail expected to continue lagging.

Annual NPI Returns



Forecast NPI Total Returns (PREA Consensus)



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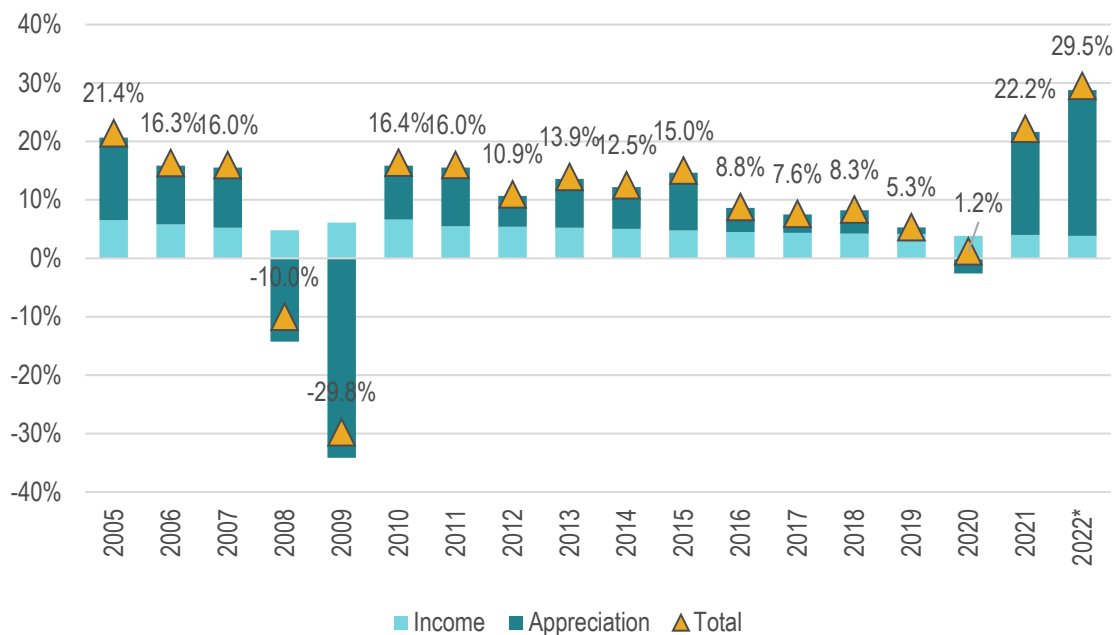
* Rolling four-quarter return as of 2022 Q2.
 Note: Returns are gross unlevered.
 Source: NCREIF; PREA

Trailing One-year ODCE Returns Reach A Fresh High

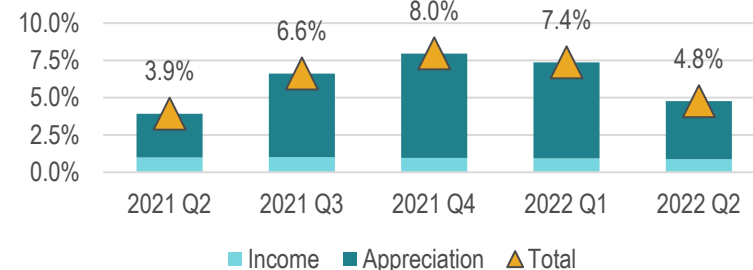
Industrial Returns Moderated QoQ but Remained Historically High

- ▶ Total quarterly ODCE returns decreased for the second consecutive quarter from their 2021 Q4 high but remained elevated, pushing the trailing one-year return to a new record. Further moderation is expected as appreciation normalizes.
- ▶ Most property types experienced moderation in quarterly returns in Q2, and industrial continued to outperform. Hotels were the only property type to see increased performance QoQ, pushing their trailing one-year returns to 8.9%, better than both office and retail.

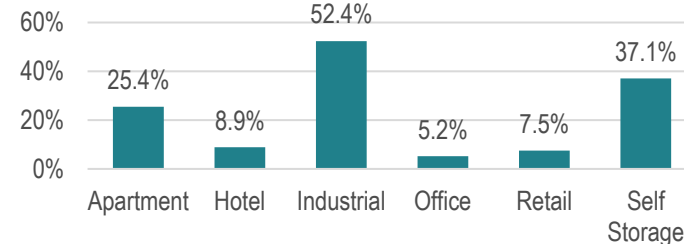
Annual ODCE Returns



Quarterly ODCE Returns



Rolling 4Q Return by ODCE Property Type



* Return for 2022 is rolling four-quarter total as of 2022 Q2.

Note: Annual and quarterly returns are gross levered; property type returns are gross unlevered at ownership share.

Source: NCREIF

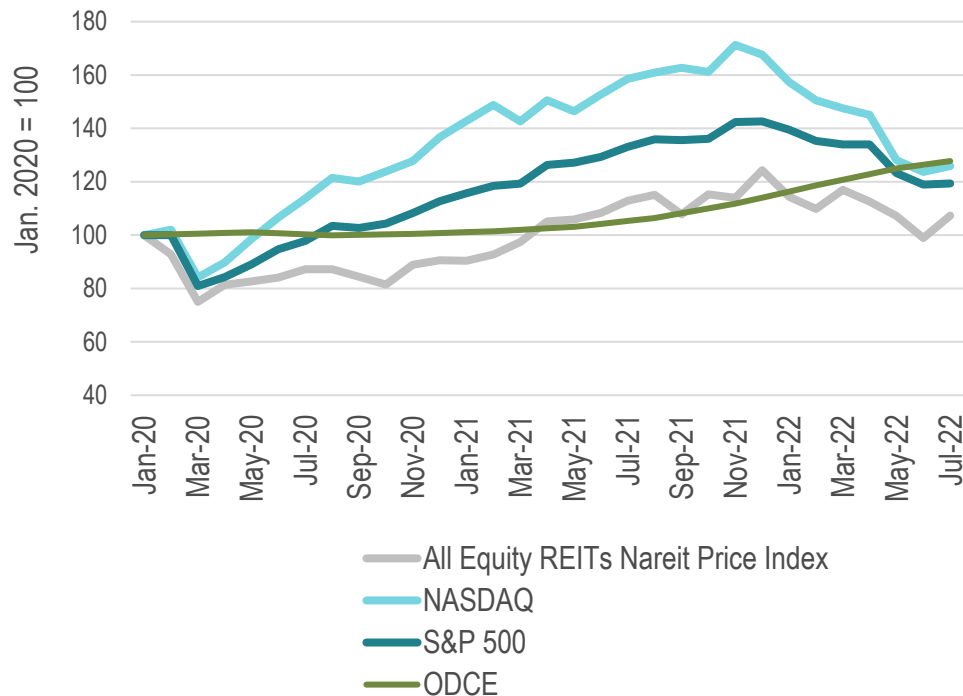


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REITs and Stock Indices take Sharp Q2 Downturn

Capital Market Volatility hasn't shown up in Private Real Estate Benchmark returns

US Stock Indices vs. ODCE



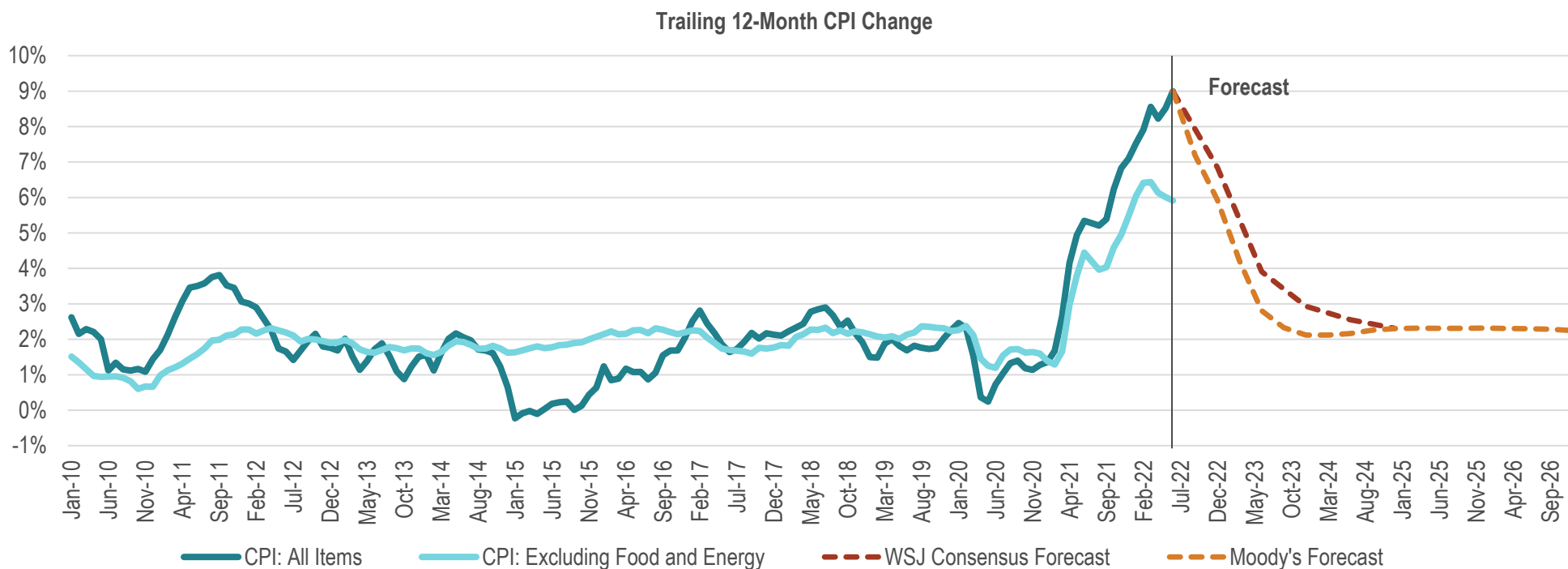
US Equity REIT Performance, Jan. 2020 - July 2022

Sector	2020	2021	YTD 2022
FTSE Nareit All Equity REITs	-5.1%	41.3%	-12.3%
Industrial	12.2%	62.0%	-18.0%
Office	-18.4%	22.0%	-21.9%
Retail	-25.2%	51.9%	-11.4%
Apartments	-15.3%	63.6%	-14.0%
Single Family	6.0%	52.8%	-12.7%
Lodging/Resorts	-23.6%	18.2%	-4.0%
Health Care	-9.9%	16.3%	-4.6%
Self Storage	12.9%	79.4%	-12.3%
Data Centers	21.0%	25.5%	-18.0%

Inflation Sets New 40-Year High After Slight Decrease in April

CPI for All Items Up 9.0% YoY, Excluding Food and Gas Up 5.9%

- ▶ Inflation remained at or near 40-year highs in Q2 with the June CPI reading outpacing expectations at 9.0%.
- ▶ Energy prices rose the most, up over 40% year-over-year with gasoline prices up 60%, the second highest figures on record behind early 1980.



Data are as of June 2022.

Note: Figures represent seasonally adjusted CPI.

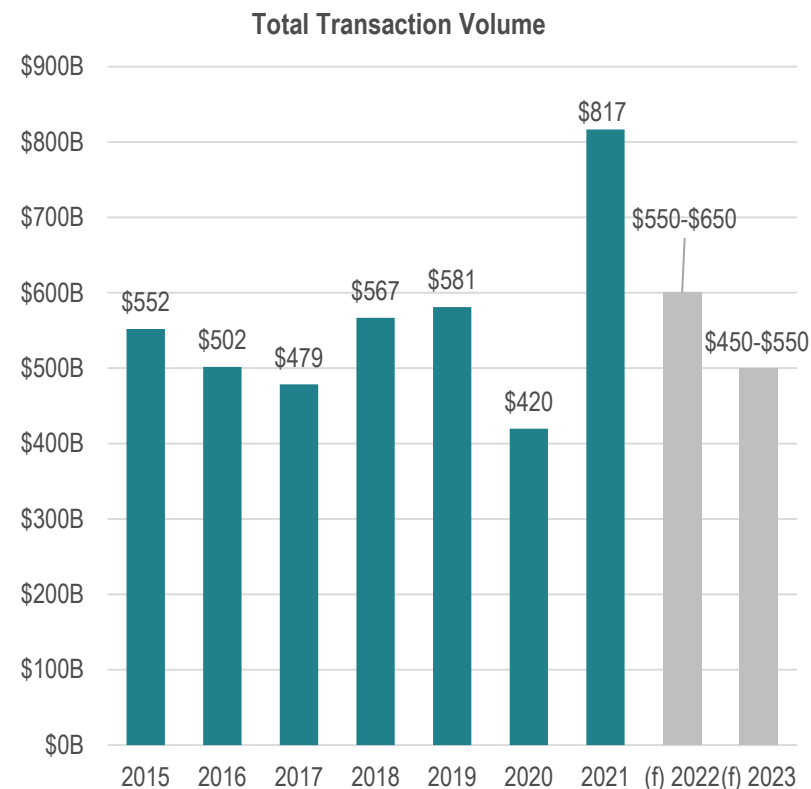
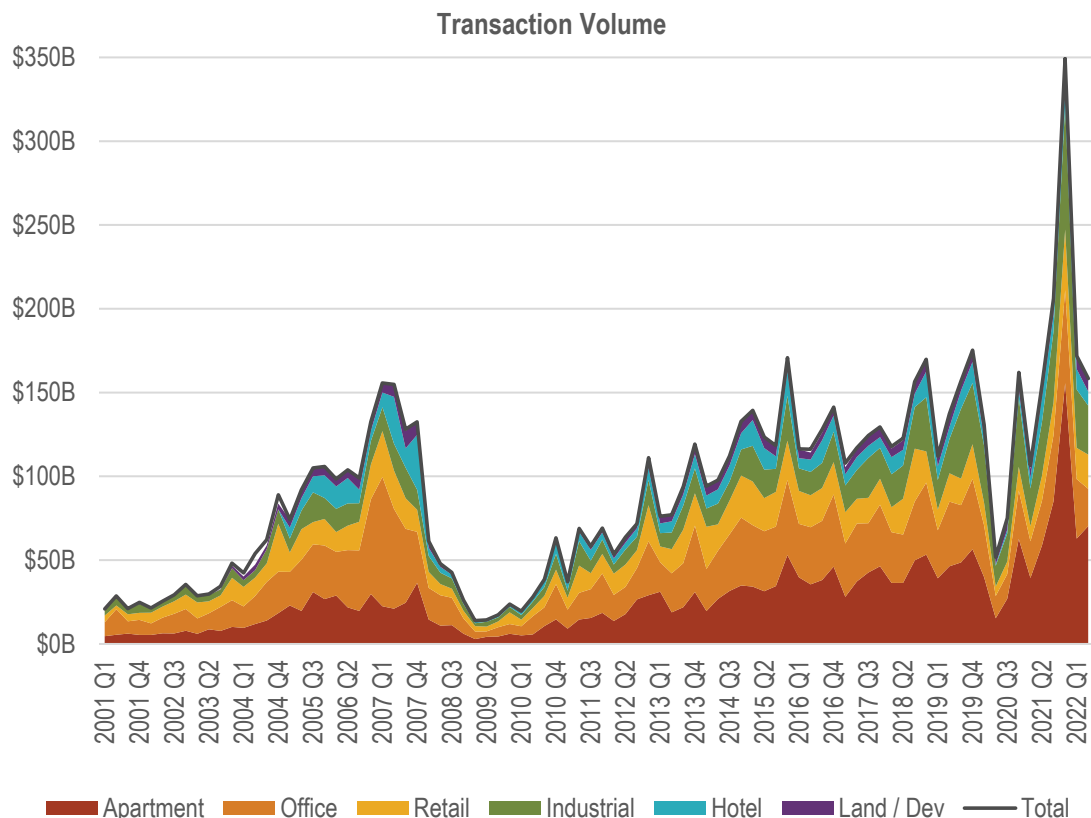
Source: U.S. Bureau of Labor Statistics; Federal Reserve Bank of St. Louis; Moody's Analytics; WSJ Consensus Forecasts



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Q2 Transaction Volumes Further Moderated, Remained High at \$160B

Rolling Four-Quarter Totals Up YoY for All Property Types Despite QoQ Moderation for Most Property Types



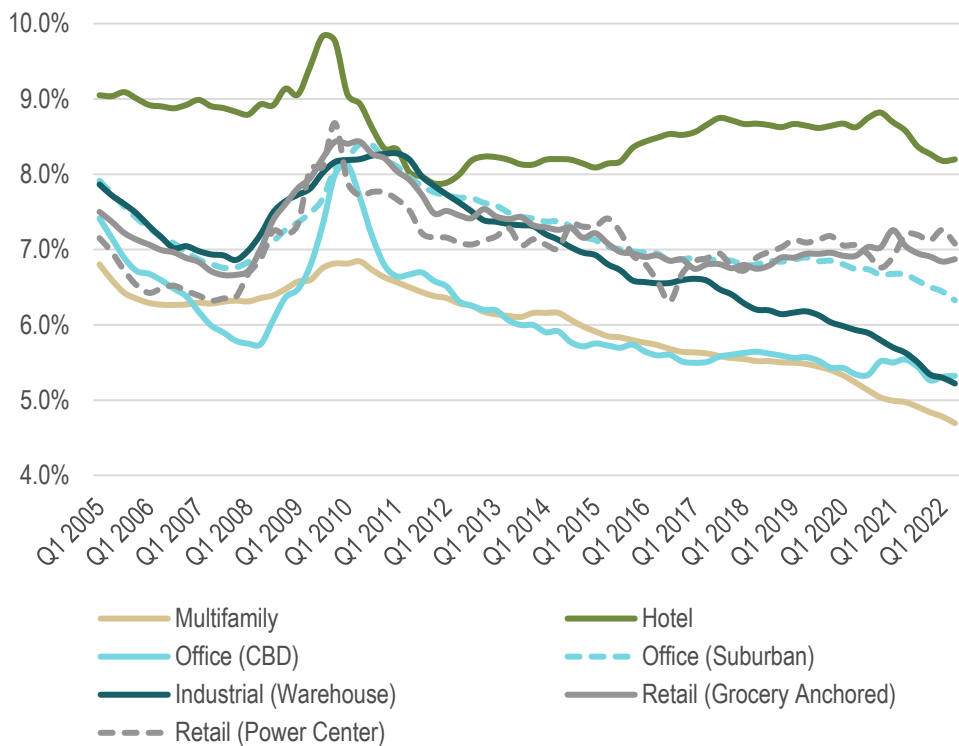
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Source: RCA

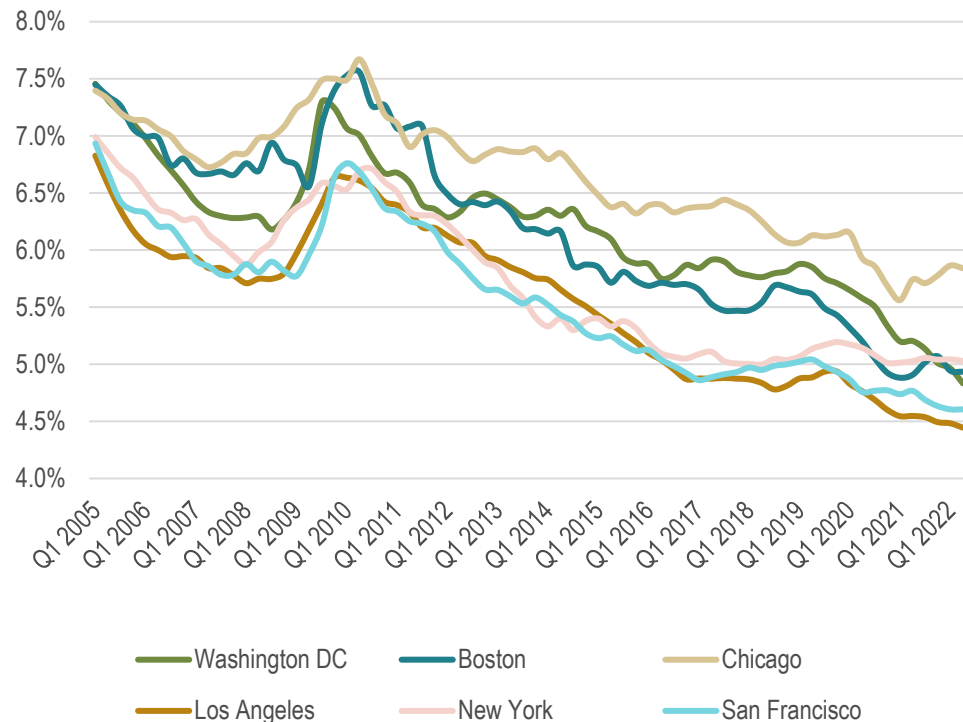
Cap Rates Continue to Be Relatively Stable with Slight Compression

Rates for Most Property Types Down 20 to 40 bps YoY; Rates Stable in Most Gateway Markets

Cap Rates by Property Type



Cap Rates by Metro*



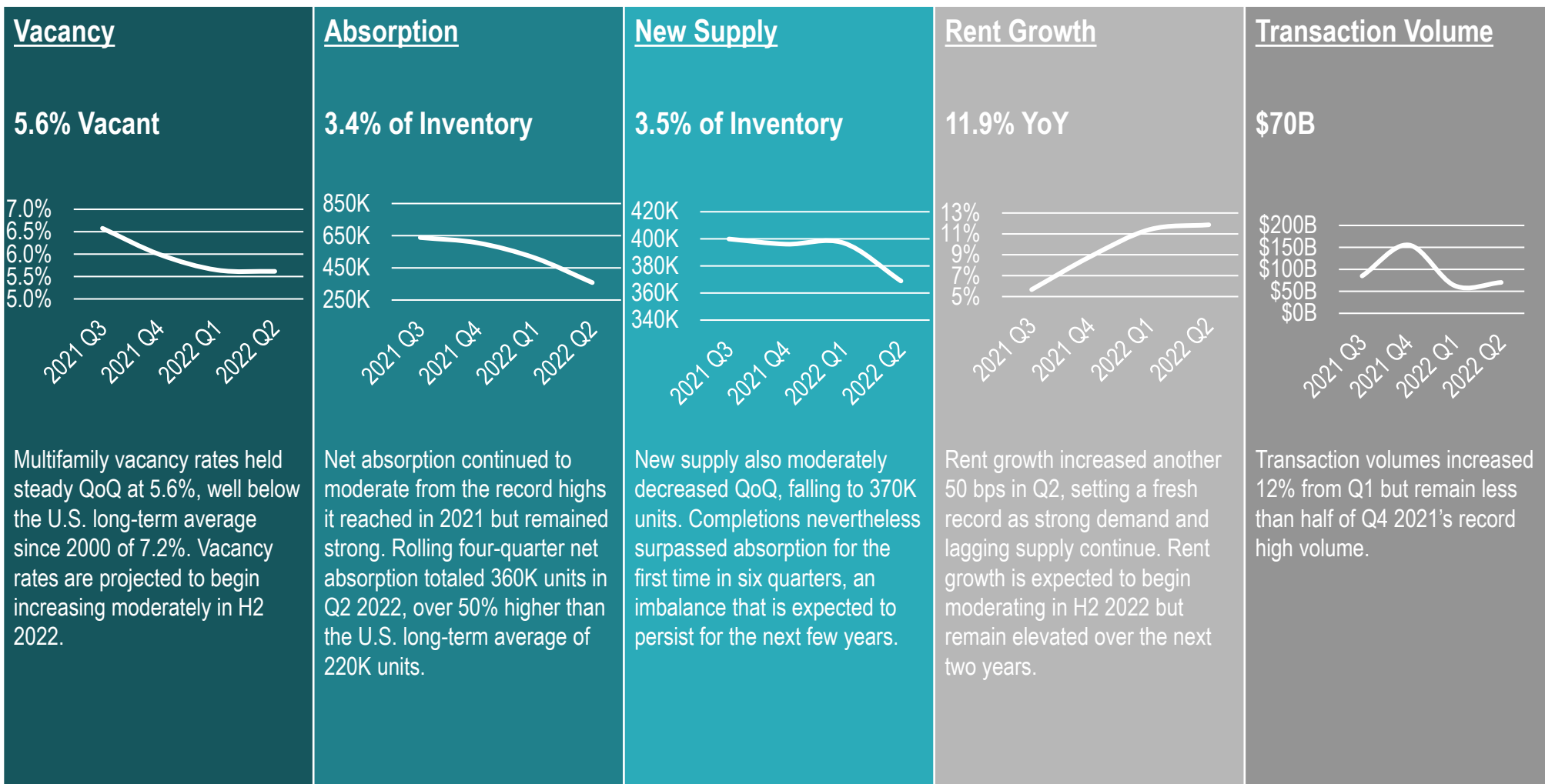
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*Cap rates for all property types.

Source: RCA

Multifamily Property Market Overview

Record Rent Growth and Positive Long-term Outlook Despite Signs of Moderation in 2022 and 2023



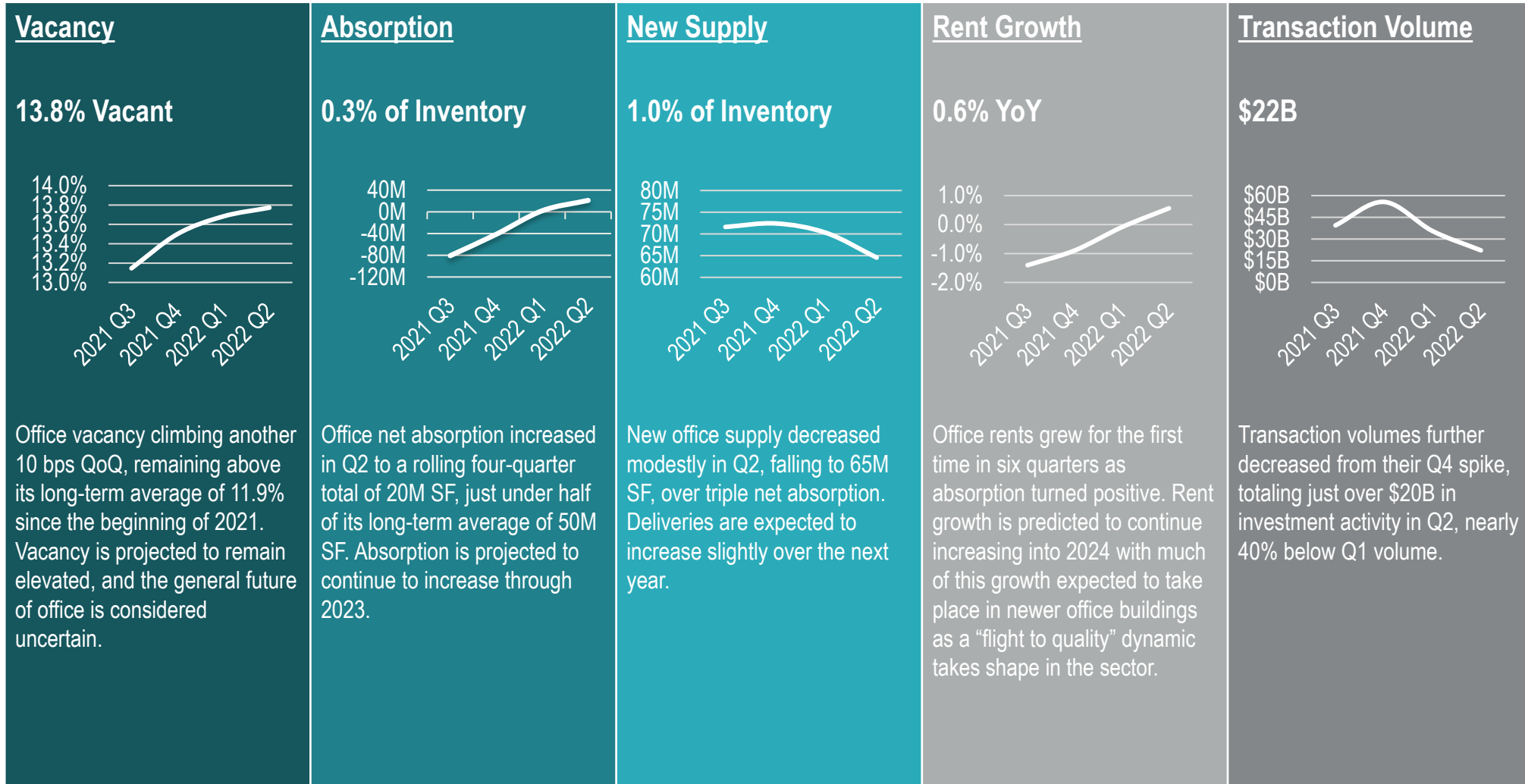
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Note: Throughout this section, multifamily data are filtered for Class A&B; rent growth and vacancy are rolling four-quarter averages; absorption and completions are four-quarter totals; rent is based on asking market rent data.

Source: CoStar; RCA

Office Property Market Overview

Absorption and Rent Growth Turn Positive with a “Flight to Quality” Expected in the Office Sector



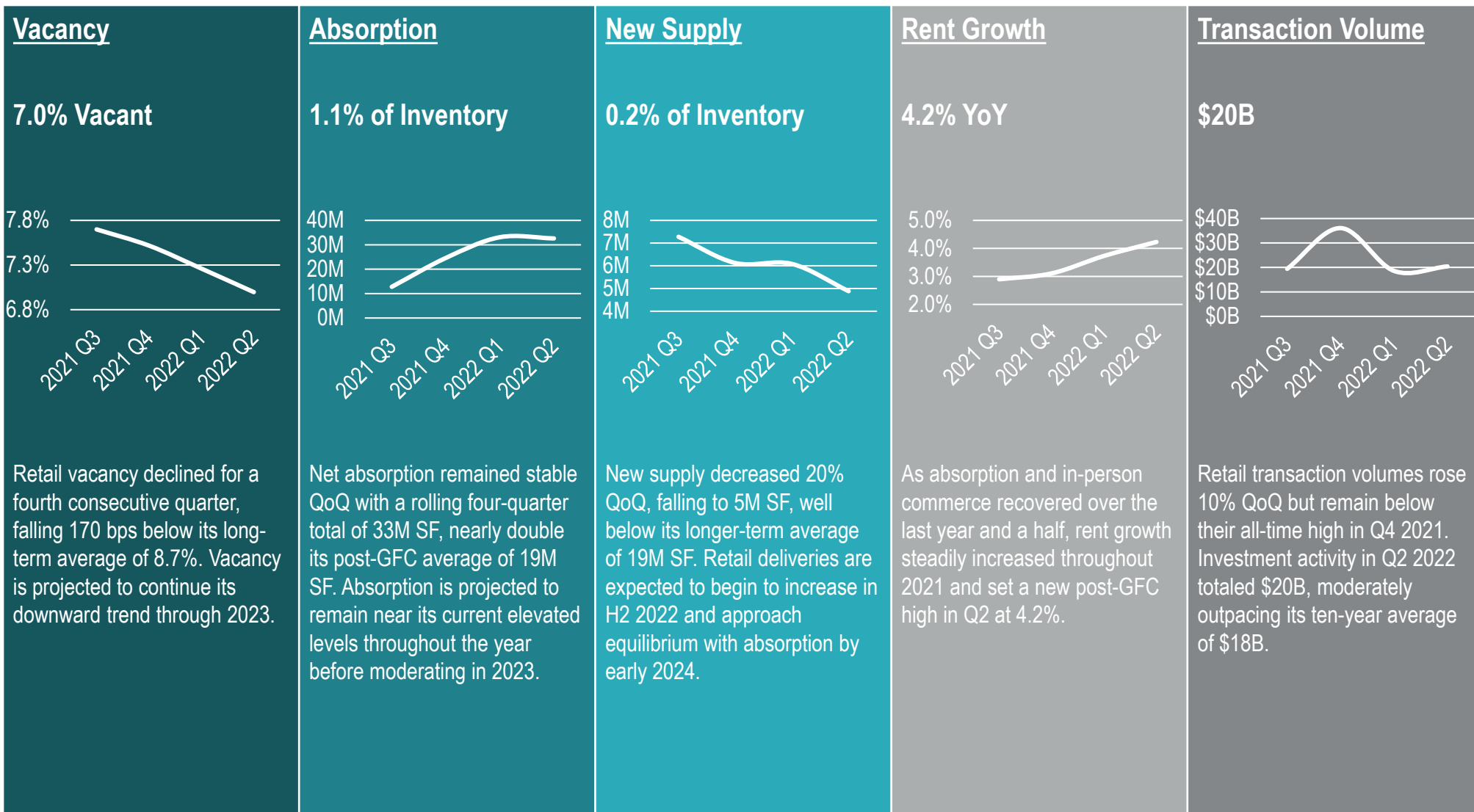
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Note: Throughout this section, office data are filtered for Class A&B; rent growth and vacancy are rolling four-quarter averages; absorption and completions are four-quarter totals; rent is based on asking market rent data.

Source: CoStar; RCA

Retail Property (Neighborhood Center) Market Overview

Supermarket Anchored Centers Display Resilience in a Volatile Retail Marketplace

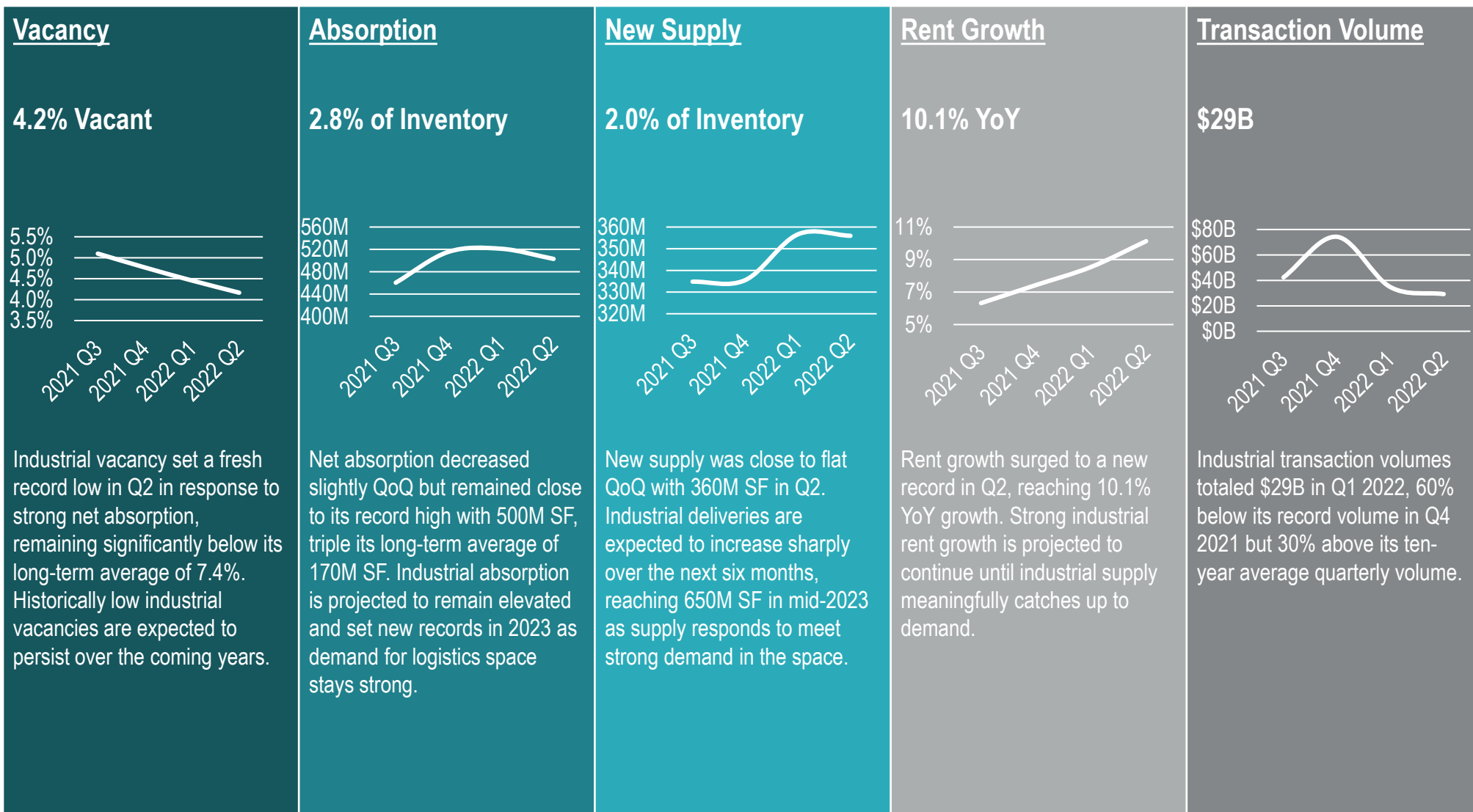


Note: Throughout this section, retail data only include neighborhood centers and small community centers; rent growth and vacancy are rolling four-quarter averages; absorption and completions are four-quarter totals; rent is based on NNN direct rent data.

Source: CoStar; RCA

Industrial Property Market Overview

Sector Remains Strong and Favorably Positioned for Continued Growth



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Note: Throughout this section, rent growth and vacancy are rolling four-quarter averages; absorption and completions are four-quarter totals; rent is based on NNN direct rent data.

Source: CoStar; RCA

Disclaimers

Critical Assumptions

Our analysis depends on the correctness and completeness of data available as of the date of this memo. The future performance of the global, national, and local economy and real estate market, and other factors similarly outside our control may vary. Given the fluid and dynamic nature of the economy and real estate markets, as well as the uncertainty surrounding particularly the near-term future, it is critical to monitor the economy and markets continuously. Stable and moderate growth patterns are historically not sustainable over extended periods of time; the economy is cyclical; and real estate markets are typically highly sensitive to business cycles. Further, it is very difficult to predict when an economic and real estate upturn will end.

Our analysis cannot predict unusual economic shocks on the national and/or local economy, potential benefits from major "booms" that may occur, or the residual impact on the real estate market and the competitive environment of such a shock or boom. Also, it is important to note that it is difficult to predict changing consumer and market psychology.

As such, we recommend the close monitoring of the economy and the marketplace, and updating this analysis as appropriate.

General Limiting Conditions

Reasonable efforts have been made to ensure that the data contained in this study reflect accurate and timely information and are believed to be reliable and comprehensive. This study is based on estimates, assumptions, and other information developed by RCLCO Fund Advisors from its independent research effort and general knowledge of the industry. No responsibility is assumed for inaccuracies in reporting by any data source used in preparing or presenting this study. This memo is based on information that to our knowledge was current as of the date of this memo, and RCLCO Fund Advisors has not undertaken any update of its research effort since such date.



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