MEMORANDUM

TO: Members of the Investment Committee, CalPERS
FROM: Meketa Investment Group
DATE: September 19, 2022
RE: Semi-Annual Real Estate Performance Review as of June 30, 2022

In our role as the Board Real Estate Consultant, Meketa Investment Group ("Meketa") conducted a semi-annual performance review of the Real Estate Portfolio ("the Portfolio") based on data provided in Wilshire's California Public Employees' Retirement System ("CalPERS") Real Assets Performance Analysis Review for the period ended June 30, 2022, and selected CalPERS reports.[1] This memorandum provides the Portfolio performance data and information on key policy parameters, along with summary market commentary.

Performance[2]

Portfolio-Level Returns

CalPERS ("the System") assigns the goals of diversification from public securities, current income and inflation protection to its real assets portfolios, of which real estate comprises 82.1%. The Portfolio's diversification is serving the System, as different property sectors experience varying demand and supply dynamics. Similarly, CalPERS' focus on highest quality locations and materials that attract credit worthy tenants provides defensive characteristics. Across real estate markets, no property type or geographic region necessarily outperforms over the long-term, so diversification is critical.

This became more apparent during the quarter's results reported for March 31, 2022, which reflected property operations during the eighth full quarter of the COVID pandemic, January 1 through March 31, 2022.

It is also crucial to keep in mind that real estate is a long term, illiquid asset, and shorter term, quarter to quarter changes in value, based on third party appraisals, may not necessarily reflect long-term trends in either direction.

CalPERS' Real Estate Portfolio returns generally mirrored the benchmark, modestly outperforming the benchmark over the three-year period and modestly underperforming the benchmark over the one-, five-, and ten-year periods. Measured by a percentage of Loan to Value, CalPERS has historically used more leverage than the benchmark (29.6% versus the benchmark of 20.9%). When property values are

[1] Real Assets Program Allocation, Characteristics, and Leverage Reports (pdf) and Datasheets (Excel), Period Ending March 31, 2022, and Real Assets Quarterly Performance Report, Partnership Financial Statements as of March 31, 2022.
[2] Per Wilshire's CalPERS Real Assets Performance Analysis Review for the period ended June 30, 2022 reported with a 1-quarter lag, so effectively as of March 31, 2022.

rising, this accelerates returns. When values decline, this detracts from performance. Measured by the 3.3x multiple of Net Operating Income to debt service, (coverage ratio or "DSCR"), and the strength of the tenancies, this is nevertheless a prudent level of debt. Both LTV and DSRC are well within policy guidelines of <50% and >1.5, respectively.

Net Returns June 30, 2022	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)
Real Estate Returns	26.5	10.8	8.5	9.6
Real Estate Policy Benchmark[1]	27.1	10.2	8.8	9.9
Over (under) Performance	-0.6	0.6	-0.3	-0.3

Performance Attribution

The portfolio posted a positive 26.5% net return for the one-year period, split between 3.4% current income and positive appreciation of 23.1%. Among core holdings, industrial buildings and residential properties posted very strong performance during the one-year time period. Indeed, industrial and multifamily outperformed the benchmark for all periods. Industrial buildings are benefitting from increased demand during COVID as a result of greater e-commerce volume and work-from-home conditions, and residential properties are benefitting from improving property level fundamentals. CalPERS' industrial portfolio, representing 31.6% of the core portfolio, posted returns for the one-year time period of 58.3%. CalPERS' residential portfolio, representing 24.9% of the core portfolio, posted returns for the one-year time period of 36.3%.

Mall retail property investments, to which CalPERS has a material overweight compared to the benchmark, and which account for 11.9% of the core portfolio, posted performance of 13.1% for the one-year time period. These investments have produced an 8.9% total net return since inception. While malls were hit particularly hard during the pandemic, sales have rebounded dramatically and are now at all-time highs. Interestingly, these sales levels are being achieved despite still lagging visitor traffic numbers, reflecting a trend of fewer "browsers" and more active shoppers. The dispersion of returns is particularly observable in the mall sector, with Class A+ properties dramatically outperforming everything else.

The other portion of CalPERS' retail holdings, grocery anchored shopping centers, which amount to 11.2% of the core portfolio, posted performance of 13.4% for the one-year time period. The grocery-anchored shopping centers were impacted during COVID by the temporary closure of the small businesses, including restaurants, which lease in-line stores, but have since experienced strong tailwinds with the shift in consumer habits to shopping closer to home. Shorter average lease terms, relative to big box retailers, and little new development have given owners of grocery anchored shopping centers the ability to more proactively push rents, especially given historically low vacancy within the sector.

[1] CalPERS Real Estate Policy Benchmark, with historical composition as follows: As of July 1, 2018 is the MSCI/PREA US ACOE Quarterly Property Fund Index (Unfrozen), Net of Fees. From July 1, 2011 through June 30, 2018, the Policy Benchmark was the NCREIF Fund Index Open-End Diversified Core Equity, Net of Fees. The. Policy Benchmark results are shown on a blended basis during the relevant trailing periods.

As of this reporting period, the core risk portfolio, comprised of completed, leased and cash flowing assets, and representing 89.8% of the Real Estate Portfolio, produced strong longer term returns of 9.2% for the five-year return against MSCI/PREA benchmark returns of 8.8%. Ten-year returns of 12.0% also handily exceeded the 9.9% benchmark return. Virtually all core properties are held directly in lower cost separate accounts (as opposed to investing in open-end commingled pools). These long-term strategic partnerships anchor the Portfolio, and efforts continue to transition the Portfolio away from legacy, non-strategic risks towards higher quality, stabilized assets that serve the role of the asset class.

Net Returns As of June 30, 2022[1]	NAV ($B)	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)
Core	48.4	29.3	11.8	9.2	12.0
Value Add	3.3	8.3	4.9	5.1	5.9
Opportunistic	1.9	14.7	5.3	4.4	4.8
Real Estate Policy Benchmark	NA	27.1	10.2	8.8	9.9

Key Policy Parameters

The Real Estate Portfolio is compliant with all key parameters related to diversification and other limits applicable at the Portfolio level, as demonstrated in the following table.

Key Portfolio Parameter	Policy Range/Limit	NAV 6/30/22 Exposure[1]
Risk Classification	(%)	(%)[2]
Core	75-100	89.8
Value Add	0-25	6.5
Opportunistic-All Strategies	0-25	3.7
Geographic Region	(%)	(%)[3]
United States	75-100	94.3
International Developed	0-25	2.5
International Developing	0-15	3.2
International Frontier	0-5	0.0
Manager Exposure[4]	(%)	(%)
Largest Partner Relationship	20 max	19.4
Investments with No External Manager	20 max	0.0
Leverage [5]		
Loan to Value	50% max	29.6%
Debt Service Coverage Ratio	1.5x min	3.29x

[1] Private investment data are one quarter lagged, so effectively as of March 31, 2022.
[2] Real Assets Quarterly Performance Report as of March 31, 2022; and Real Assets 2022.3.31 Characteristics Report (pdf), based on asset-level risk.
[3] Real Assets Quarterly Performance Report as of March 31, 2022; and Real Assets 2022.3.31 Characteristics Report (pdf), based on asset-level geography.
[4] CalPERS Real Assets Portfolio Allocation Report (Excel), Period Ending March 31, 2022: calculated based on manager- and account-level NAV. Percent calculated using relevant NAV plus total unfunded commitments for relationships/investments and same for the Real Assets Program ($78.3 billion).
[5] CalPERS Real Assets Portfolio Leverage Report (pdf), Quarter Ending March 31, 2022.

Implementation

The Real Estate Portfolio had a market value of $57.2 billion at the end of the current reporting period, representing 82.1% of the Real Assets program and 13.0% of the total portfolio. Including Forestland and Infrastructure, the Real Assets program currently comprises 15.8% of the total portfolio against a long-term target allocation of 13%, within the policy range of 8% to 18%. Note that a new long-term target allocation to Real Assets of 15% was presented and approved by the Investment Committee in November 2021 and became effective July 1, 2022. CalPERS has a very small exposure to overseas properties, and almost no exposure to the hospitality industry in its private real estate holdings.

The CalPERS business model for real estate emphasizes control, transparency, alignment and governance. CalPERS' market advantages are its size, scale and ability to hold assets for longer periods. The implementation of this business model is primarily through direct investing with separately managed accounts, in which CalPERS has effectively complete control. Cancellable separate accounts are created with expert, aligned fiduciary managers/partners. These relationships are overseen by Staff with the benefit of independent fiduciary consultants' prudent person opinions, and monitored on behalf of the Trustees by the Board Consultant. This provides a replicable, scalable model that can grow as the Total Fund size grows and invest within the strategic ranges based on market conditions and alternative investments available to the Total Fund. As the System grows and markets evolve, this method of investing helps control risk and reduce costs.

In addition, CalPERS recently adopted a new asset allocation mix and increased the Real Asset target to 15% of the Total Fund. In order to deploy the amounts of capital necessary to achieve the target allocation, CalPERS will likely need to invest through a broader array of investment vehicles, including commingled funds and co-investments. These vehicles will provide additional access to geographies and property types for which CalPERS has capacity and appetite.

CalPERS continues to be an industry leader in creating and embracing Responsible Contractor Policies and ESG best practices at its properties. Additionally, during the last five years, the Staff has made progress harmonizing several of the private asset classes under the Real Assets Unit. This has improved continuity of research, decision-making, risk mitigation and reporting, as well as providing increased knowledge across INVO. This is consistent with a System wide, Total Fund approach rather than a collection of independent asset "silos."

Real Estate Market Commentary

This report measures results two years after the inception of the pandemic. The impact of the shutdown of the economy in March 2020 is still working its way through the commercial real estate sector, though many properties have experienced full recoveries and strong growth in both rental rates and valuations. COVID's impact varied greatly by market and property type, with some (data centers, life sciences, industrial, nearly all housing, suburban locations) being clear winners and others (hospitality, retail, gateway central business districts locations) suffering lower occupancies and collections. In sectors with less consistent demand (e.g. office), newer assets that are well located, highly amenitized and focused on tenant well-being are markedly outperforming older assets with dated designs and fewer amenities. We expect to see greater dispersion in performance among individual assets within the same property type and within the same market as people continue to evolve the way they interact with the built environment.

Core investors have been actively rebalancing their portfolios in light of this dispersion in returns. Within the core NCREIF ODCE Fund universe, office investments have decreased as a proportion of total investments from 35.5% in 2020 to 28.2% today, due to increased disposition activity within the office sector and redeployment of capital into the residential and industrial sectors.

Inflation is once again a material market phenomenon. While “hard assets” such as real estate offer protection from inflation over the mid to longer term because of their ability to raise rents, the timing and amount of correlation vary depending on the individual rent roll (weighted average lease terms), market supply and demand for competing space (also affected by changing usage needs), legislation, and other factors. Conventional wisdom suggests that increased inflation will result in higher interest rates, prices/rents, less demand and slowing of the economy. These elements traditionally translate to the slower to flat growth of commercial real estate asset prices. Since most real estate purchases are partially funded with material amounts of third-party debt, this equals fewer trades crossing. Sectors with shorter lease terms, lower operating cost structures, and tenants tolerant of rising rents are attracting increased attention from investors.

While there remains significant dry powder equity capital (nearly $400 billion) raised and sitting on the sidelines ready to invest, institutional capital appears to be observing and adapting to the re-pricing that is currently occurring in the private real estate market. Many participants are unwilling to continue to underwrite the same high levels of rental growth and value increases that have been recorded over the last 18 months, and they are stress-testing based on inflationary environment, future rate increases and the potential for economic slowdown. Transaction volume is slowing and we are starting to see investors who have flexibility in their investment mandates pivot to originating credit or waiting for distress in equity investment opportunities.

Increasing input costs (labor and materials) and a slowing economy may foreshadow a reduction in construction starts and, therefore, new supply. Supply chain disruptions are also affecting construction and delivery of new inventory. This represents an opportunity for investors like CalPERS with high-quality, well-located assets to maintain long-term resilient income streams, and also for those with quality development projects far enough along in the development pipeline with certainty around execution pricing and timing. Meketa believes that CalPERS’ strategic, long-term tilt to the historic centers of population and employment growth is sound. However, as a result of the virus, work from home appears to be a permanent condition, at least for some part of the population, and investors have also turned their attention to less dense (read, suburban and low rise) assets and locations.

Interest rates have risen considerably since the beginning of the year and financing costs for nearly all types of commercial real estate have increased as a result. While debt markets for commercial real estate remain liquid, they are currently volatile. For the first time in more than a decade, these conditions are resulting in “negative” or non-accretive leverage, meaning the cost of new debt financing exceeds the going-in yield of the real estate acquisition. While demand continues to support strong occupancies in most properties, growth of effective rental rates is expected to slow, as the recent remarkable growth rates inevitably subside and broader market growth also moderates.

Conclusion

CalPERS' continued discipline, long-term investment horizon in this illiquid asset class, and focus on the role of the asset class should continue to serve the needs of the System. Adhering to the Strategic Plan, particularly in times of market uncertainty and disruption, will ensure the real estate program continues to scale in an appropriate manner and contribute to the Investment Office Mission.

Please do not hesitate to contact us if you have questions or require additional information.

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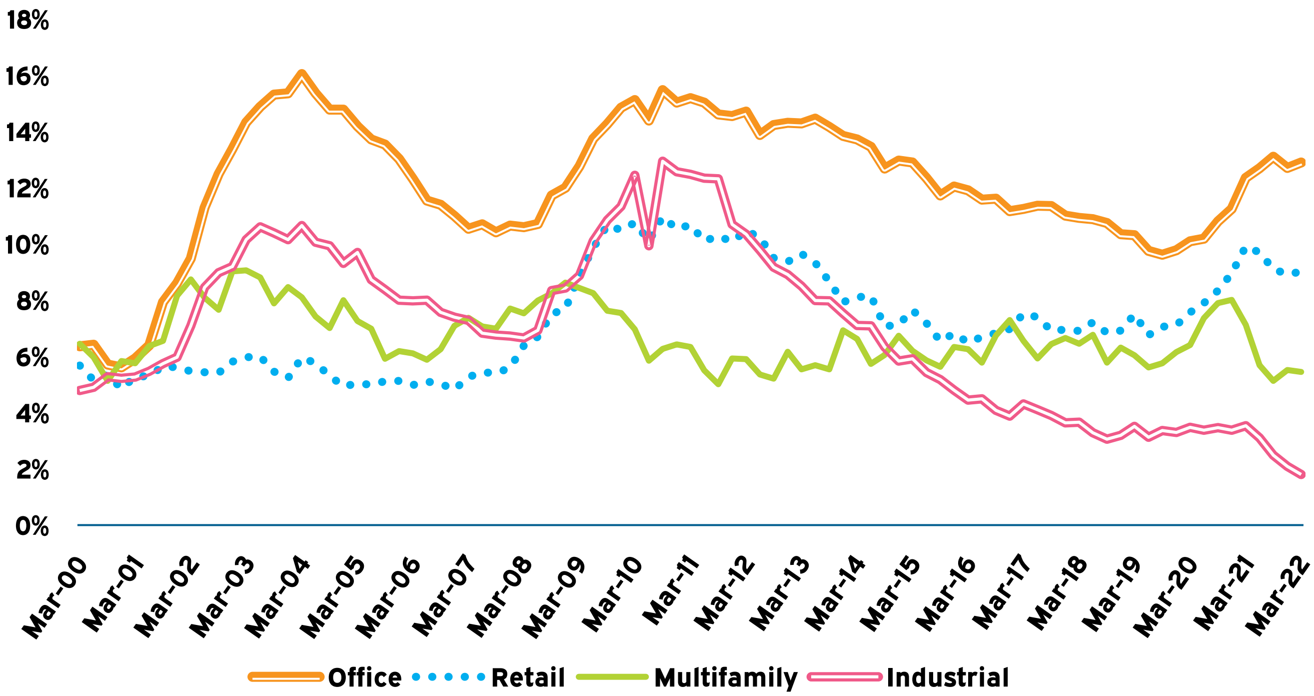
Attachment

Real Estate Market Views

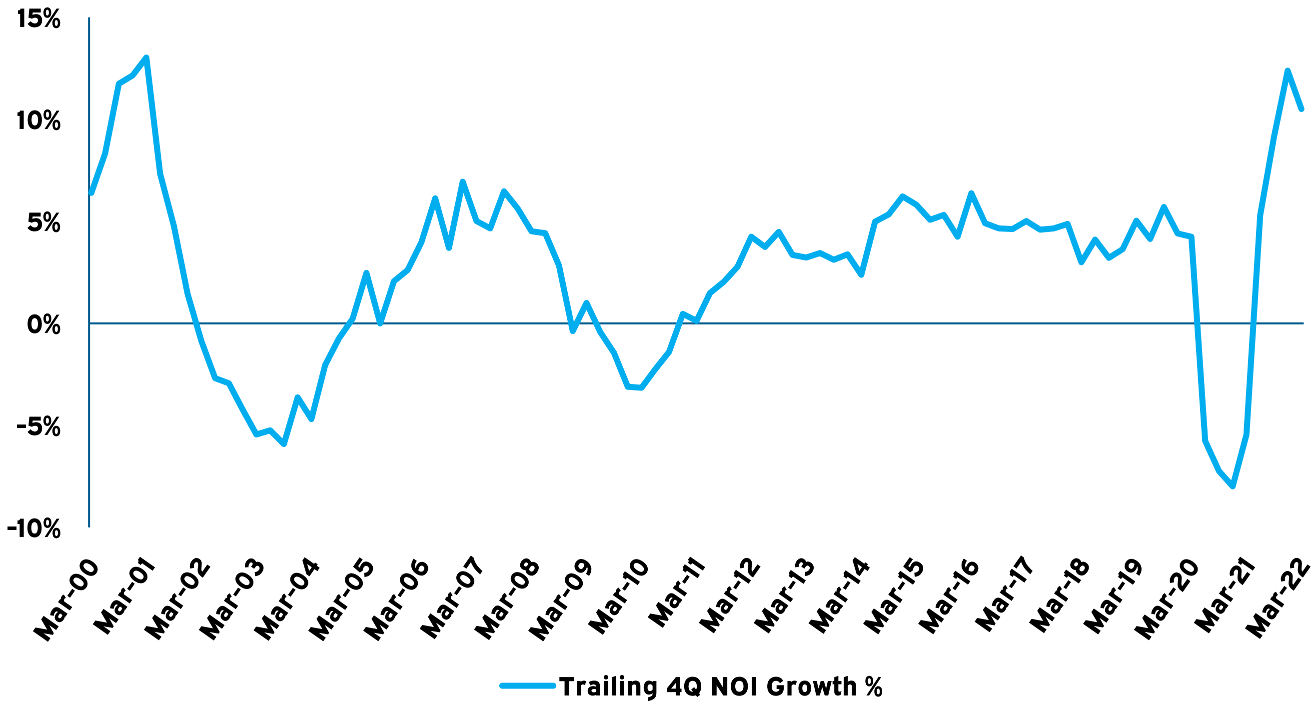
Real Estate Fundamentals – Vacancy by Property Type[1]



In the first quarter of 2022, vacancy rates increased for office and retail, while vacancy rates for multifamily and industrial decreased. Multifamily vacancies decreased slightly by 7 basis points in Q1 2022. Industrial vacancies set a new all-time low at 1.8%. Retail vacancies increased slightly by 9 basis points in Q1 2022. Office vacancies increased in Q1 2022 to 12.9%. Compared to one year ago, vacancy rates in multifamily decreased 167 basis points, industrial decreased 173 basis points, retail decreased 90 basis points., and office increased 54 basis points. Overall, the vacancy rate across all property types decreased 153 basis point from Q1 2021.

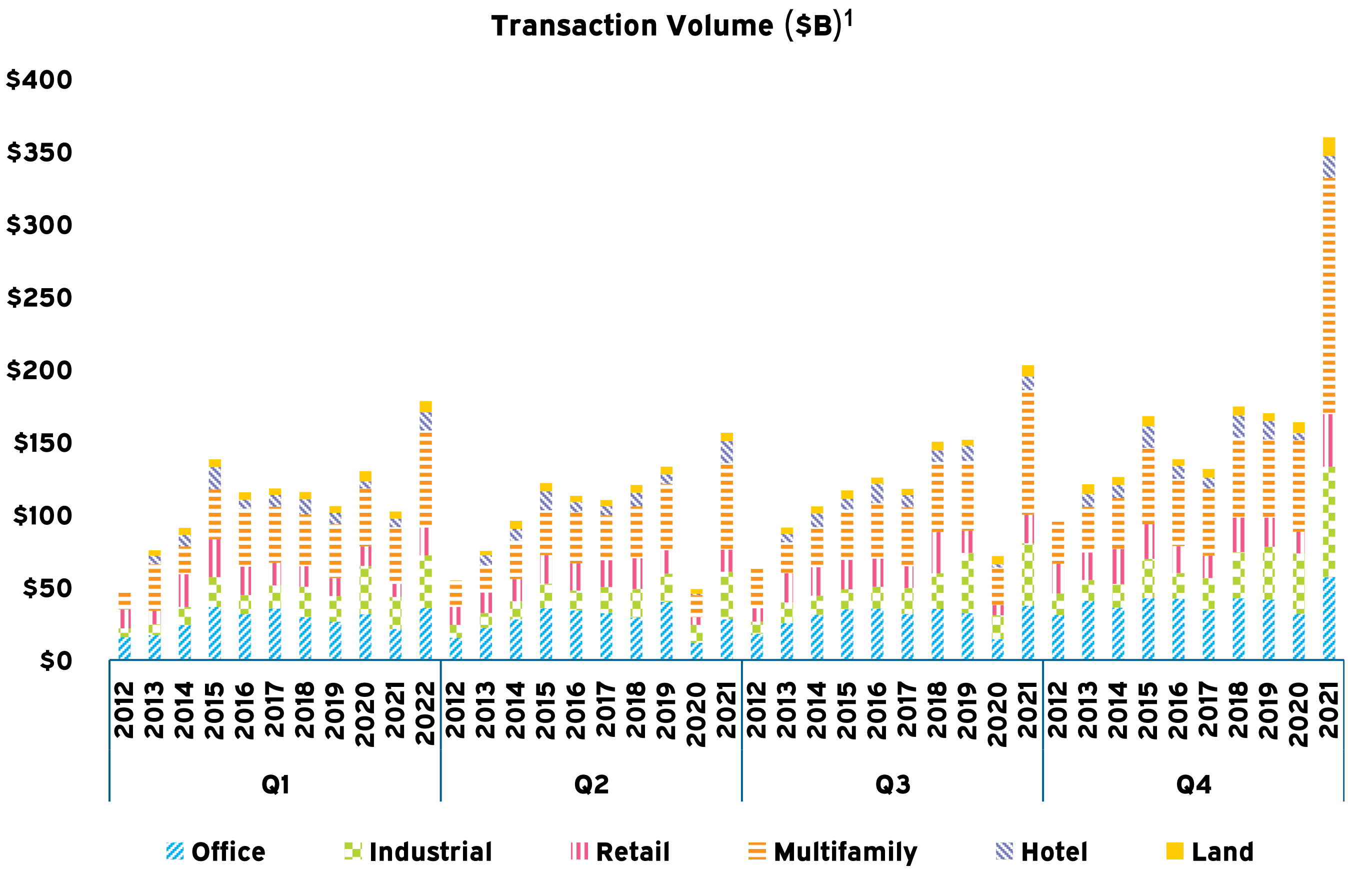
[1] Source: NCREIF.

NOI Growth[1]



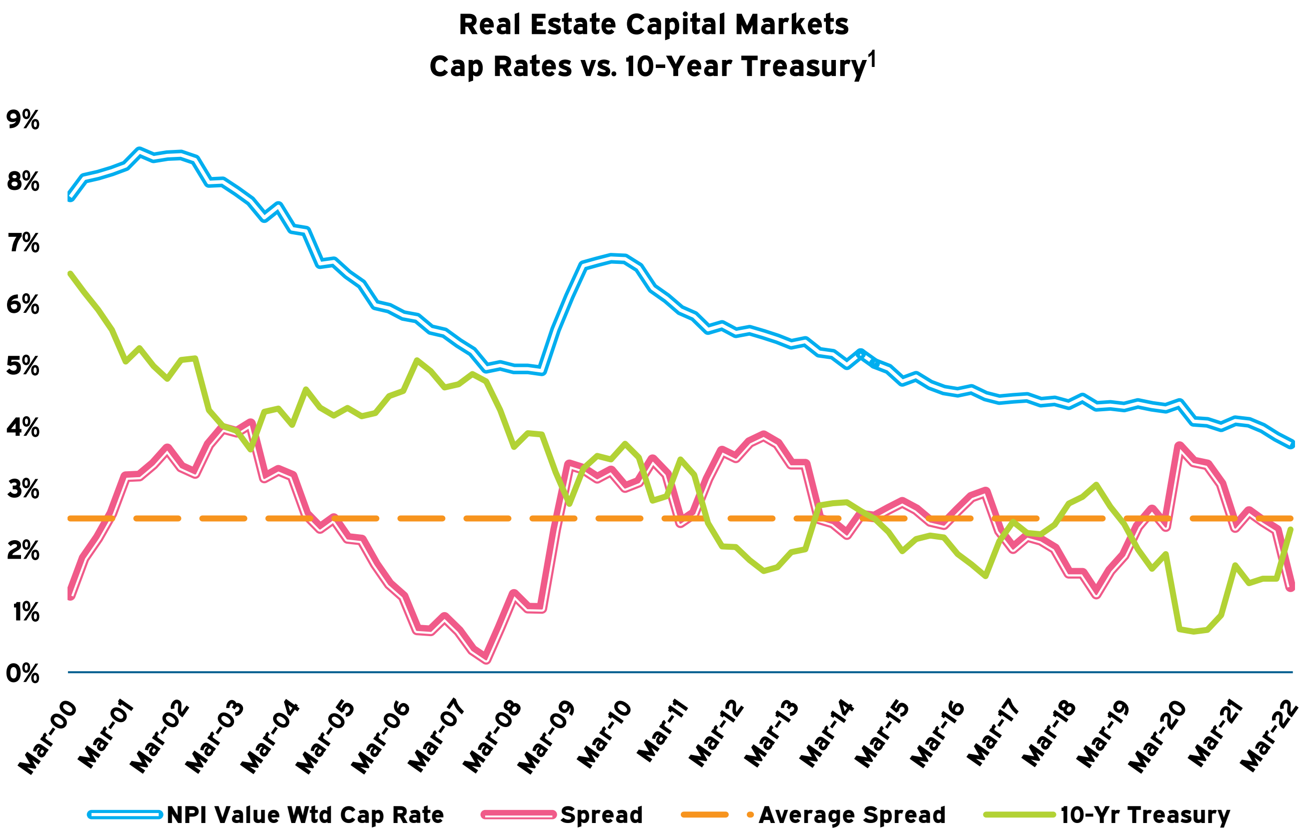
The trailing twelve-month rate of NOI growth decreased slightly in Q1 2022 to 10.5%. This growth rate continues to be supported by improved rent collections and the expiry of pandemic-related delinquencies/deferrals. Industrial NOI growth is trending above 11.0% for the trailing year ending Q1 2022. Office NOI growth has gone negative to -1.2% year-over-year, and Apartment NOI (a sector with "gross" rents, compared to "net" rents in other property types) experienced positive NOI growth at 23.5% year-over-year as occupancy levels and rental rate growth improved. Retail NOI growth has improved significantly from the previous four quarters, now at 15.6% year-over-year.

[1] Source: NCREIF.



Private real estate transaction volume for properties valued over $2.5 million for Q1 2022 was up significantly from Q1 2021 to $178 billion, representing the highest transaction volume in the first quarter of a year since the Global Financial Crisis. Compared to a year ago, all property types saw major increases in transaction volume: office (+69%), industrial (+64%), retail (+111%), multifamily (+71%), hotel (+110%) and land (+57%). Multifamily and industrial properties made up the largest percentages of total transaction volume during the quarter, at 38% and 20%, respectively.

[1] Source: PREA.



The NPI Value Weighted Cap Rate decreased 12 basis points in Q1 2022 to 3.7%. The 10-year Treasury yield increased by 80 basis points in Q1 2022 to 2.3%. The spread between cap rates and treasury yields (139 basis points) is now well below the long-term average spread of 251 basis points.

[1] Source: NCREIF and US Department of the Treasury.

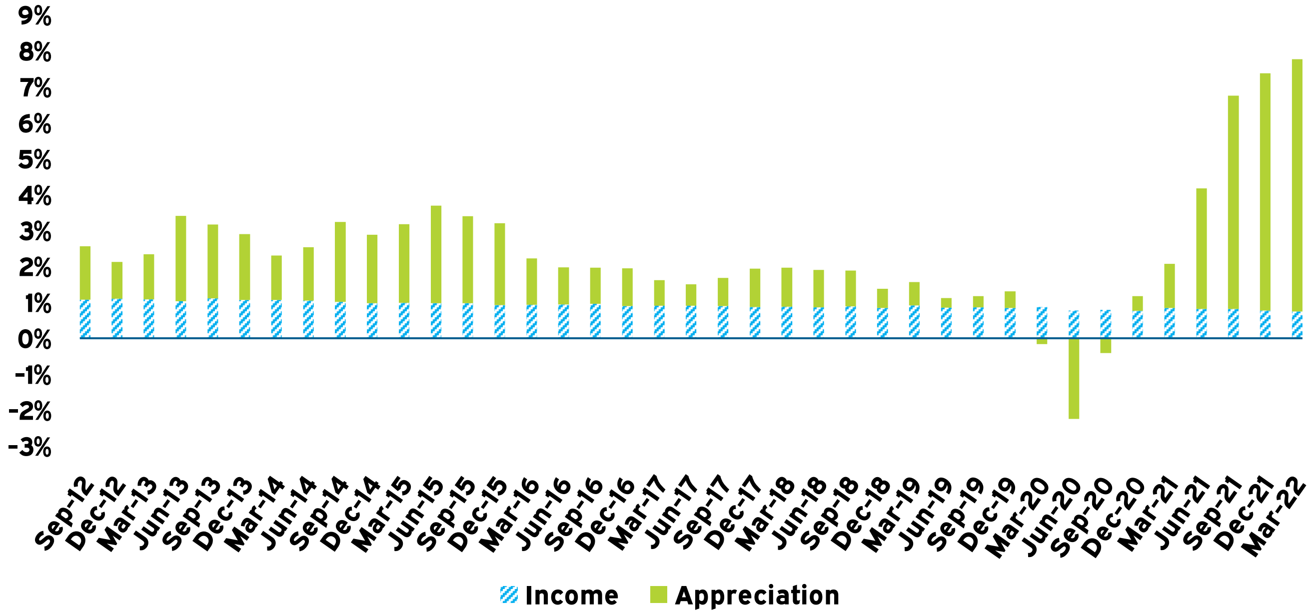
Trailing Period Returns[1]

As of March 31, 2022	1 Year (%)	3 Years (%)	5 Years (%)	10 Years (%)
NFI-ODCE (EW, net)	28.7	11.1	9.5	10.2
NFI-ODCE (VW, net)	27.3	10.3	8.9	9.9
NCREIF Property Index	21.9	9.6	8.5	9.6
NAREIT Equity REIT Index	23.6	11.7	10.6	10.5

Private real estate indices were positive in Q1 2022 and continue to be positive over the 1-year, 3-year, 5-year, and 10-year time horizons. The NFI-ODCE Equal Weight Index posted another strong quarter in Q1 2022 and private core real estate outperformed the public index over the trailing one-year period. Public real estate performance in 2020 and into 2021 has been volatile, returning -5.3% in Q1 2022, after posting a 16.2% return in the prior quarter.

[1] Source: NCREIF.

ODCE Return Components[1]
(Equal Weight, Net)



The NFI-ODCE Equal Weight return for Q1 2022 was strong at 7.8%, beating the prior quarter's return and posting the highest quarterly return in the history of the index. The income component of the quarterly return has been fairly consistent around 0.7%, while the appreciation for the quarter was very high at 7.0%.

[1] Source: NCREIF.