



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**

JUNE 2024
Real Assets Outlook

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Key themes

Key themes for 2024

Observations driving our outlook

Inflation concerns fade, but other concerns emerge

U.S. inflation has moderated significantly, partly due to pandemic issues normalizing and partly due to higher interest rates, though recent price data suggests inflation may be flattening out around 3-4% rather than near the Fed's stated 2% target. Markets have priced in a *soft landing*, with a couple rate cuts expected in the second half of the year. The Federal Reserve hopes to hold rates steady for long enough to help inflation fall to 2%, but not so long as to choke off growth. If that can be achieved, the Fed then plans to normalize rates toward a more neutral level. Any unexpected deviations from this path would likely bring volatility and drive higher risk premiums. Most risk assets, outside of real estate, have seemingly not repriced to higher interest rates. As a firm, we have become less bearish since last year, especially in real estate, given more positive signs that a *soft landing* is possible. However, generally rich asset valuations temper our enthusiasm.

2024 is setting up to be a compelling vintage for real estate

The commercial real estate market has spent the last several years dealing with challenges caused by a pandemic, economic uncertainty, and perhaps most problematic, a sharply rising interest rate environment. Valuations have been adjusting downward to reflect the new environment, but at a slow pace. Decreased transaction levels have made it difficult to accurately appraise assets, and new capital has been patient in waiting out declines. While fundamental challenges remain in the office sector, as well as an oversupply of new inventory slowing rental growth in some markets, we believe the investment environment for new capital should be more favorable. Assets will need refinancing or will need to be sold at lower valuations, with tighter credit standards creating buying opportunities with more attractive entry pricing. We expect more pain in 2024 but believe we are much closer to a bottom than where we sat one year ago.

Private infrastructure was up modestly in 2023...what lies ahead?

Our outlook for infrastructure in 2023 was notably bearish, particularly for core infrastructure. We anticipated that the sector would begin taking valuation write-downs on assets with fixed pricing and weak inflation passthroughs, but with few exceptions, asset values stayed elevated. The transaction market slowed but held up better than other sectors and underlying company fundamentals held firm. We struggle with the value proposition of core infrastructure equity returns when debt costs are in the same neighborhood, but write-downs do not appear to be imminent, especially with the prospect of rate cuts in late 2024. For real asset investors, infrastructure has been a bright spot, delivering positive performance when rates spiked and likely seeing some debt cost relief if rate cuts come through. We prefer to invest fresh capital in non-core infrastructure in today's market rather than invest in core funds where returns appear muted.

What is next for oil & gas after a strong year for M&A?

If you have followed our outlooks in the past, we raised the issue of liquidity within oil & gas as being a deterrent to investing in the sector, among other concerns. The last few years of strong commodity prices have allowed funds to generate distributions from operations but return of capital remained elusive. In 2023, we saw an uptick in sponsor-backed M&A that provided some high-profile exits (e.g., Rockcliff, Earthstone, CrownRock) and much-needed liquidity to investors. Permian Basin assets remain the most liquid, but sponsors are finding creative ways to generate liquidity in a challenging market to attract capital. We anticipate liquidity will remain a significant risk factor in an industry with long-term demand risk, but for now, the opportunity looks better than it has in years.

Outlook summary

Outlook summary

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
Core real estate	Core real estate has experienced six straight quarters of negative total returns as valuations have been steadily adjusting downward. The NFI ODCE was down 12% in 2023 and is down over 18% over the last six quarters (through 1Q'24). The primary reason has been adjusting to the higher interest rate environment; however, fundamentals have softened with rising vacancy rates, declining growth rates, higher costs of debt, and an over-supply in certain markets and property types.	<ul style="list-style-type: none"> Cap rates have not yet fully adjusted to the new higher interest rate environment, and we expect more to come in 2024, especially in the office sector. Core real estate returns tend to have high correlation to overall GDP growth. There are risks to weakening fundamentals if a recession materializes. 	<p>We recommend clients continue to rebalance/ take liquidity from core ODCE funds where possible, although redemption exit queues continue to pay only modest liquidity.</p> <p>We recommend continued diversification into alternative property types to reduce existing exposures to office, which may face longer-term challenges.</p>	Negative
Value-add real estate	The costs of leverage remains elevated, making it difficult for strategies historically reliant upon leverage to make deals pencil out. Transaction levels remain subdued for value-add investments as some sellers remain reluctant to trade at deeply discounted pricing. Some deals are getting done where a catalyst exists, such as the need to refinance/ restructure and we are seeing some transactions completed where there are opportunities to add value, such as mark to market leases. Entry pricing is more favorable on a go-forward basis.	<ul style="list-style-type: none"> Higher interest rates and borrowing costs have challenged high leverage value-add strategies, pressuring total returns. Slowing rent growth in a cooling economy has the potential to further reduce forecasted returns 	We continue to favor strategies with limited focus on high leverage and those with strong asset management and internal operating capabilities to add value as cap rate compression and market growth will be less reliable sources of return.	Neutral
Opportunistic real estate	The steep rise in interest rates that began in 2022 has created pockets of stress and distress in the real estate market. Many asset owners in need of refinancing face a gap in their capital stack as values have declined and credit standards have tightened. Borrowers will be forced to get creative with financing as they often lack fresh equity capital and want to minimize their dilution. Preferred equity financing, structured solutions, and investments in debt may see attractive opportunities.	<ul style="list-style-type: none"> Higher interest rates and borrowing costs have challenged high leverage opportunistic strategies, pressuring total returns. Competition could be a challenge as large sums of capital have been raised waiting for this opportunity to emerge. Increasing construction costs due to materials and labor may pressure development strategies. 	<p>Non-core funds with vintage years during periods of economic stress tend to be some of the best performing vintages. The impact from higher rates will likely create more attractive entry points.</p> <p>Loans coming due at higher borrowing costs and at higher loan-to-values sets the stage for opportunities to provide rescue capital.</p> <p>GPs with experience in distressed situations and those able to be flexible up and down the cap stack are viewed favorably.</p>	Positive
Real estate debt	Lending rates have increased, both from floating rate base rates as well as spreads. Traditional lending sources (banks and insurance companies) are retreating from writing loans as they continue to reduce risk across their balance sheets. Loan maturities coming due over the next few years will need refinancing and private lenders are well positioned to take advantage of the opportunity.	<ul style="list-style-type: none"> Rising rates, while generally positive for lending strategies, could also decrease transaction volumes and therefore increase competition for deals. Loan defaults are also on the horizon so having capabilities to structure workouts will be important. 	Levered whole loan strategies look attractive as borrowing costs have risen, both in base rates and spreads. Private capital providers look attractive as there will be less competition from traditional lending sources. Construction financing is also receiving a premium due to lack of competition in the market.	Positive

Outlook summary (continued)

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
REITs	REITs have continued to lag the broader equity market in 1Q'24 (0% vs 10.6%), 2023 (16% vs 26%), and 2022 (-27% vs -18%). Valuations have been adjusting to the higher interest rate environment, much faster than the private market real estate appraisal process. REITs appear to have a more favorable valuation profile when viewed from an implied cap rate perspective, although fundamentals continue to show some weakness overall.	<ul style="list-style-type: none"> REITs have higher leverage than core real estate. Rising interest rates can have a negative effect on REITs and all yield-sensitive assets over short periods. REITs are sensitive to economic decline and general equity market volatility. 	Verus believes REITs can provide liquid exposure to real estate with the following caveats: high sensitivity to equity market volatility over shorter holding periods, higher leverage, and higher exposures to non-core sectors. Active management is preferred. REIT valuations are currently at a discount; however, this has been volatile and difficult to time.	Neutral
Commodities	Commodities retreated lower in 2023 as central bank policy, intent on tamping down on inflation, created headwinds to the asset class. Our bearish view on commodities going into 2023 was in part predicated on the belief that we did not want to fight the Fed. Commodities have started 2024 in positive territory with inflation remaining stickier than markets anticipated. 2024 may be a better year for commodities but there remains countervailing forces from central banks.	<ul style="list-style-type: none"> Central banks have signaled their primary goal is to keep inflation contained, which would be a headwind for commodities. Geopolitics often contributes to higher commodity prices, but a cooling of tensions globally could have the opposite effect. 	Verus does not view commodity futures as an attractive asset class to hold long term. As an inflation hedge, commodities can often be one of the best exposures to own in the early stages of inflation. We are less bearish on commodities this year and would not be surprised if the asset class is up modestly, but we would still recommend investors allocate capital elsewhere.	Negative
TIPS	TIPS were up modestly in 2023, roughly in line with nominal bonds. Though inflation remains stickier than the market anticipated, TIPS returns have not been notably better than nominal treasuries, highlighting what we have long found problematic about the securities, they do not offer a compelling hedge to inflation and lack a high enough carry to merit an allocation for most investors. Inflation, even if slow to fall, is unlikely to surprise on the upside high enough to warrant an allocation to TIPS.	<ul style="list-style-type: none"> Decreasing inflation expectations or rising nominal interest rates would be a headwind to TIPS. Continued low rates creates a high cost of carry. 	Low absolute current yields and uncertain inflation expectations has led to low total return expectations for TIPS, especially relative to other real asset investment opportunities. If inflation were to surprise to the upside in a material way, TIPS would likely outperform nominal treasuries.	Neutral

Outlook summary (continued)

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
Core Infrastructure	Performance within infrastructure moderated in 2023 relative to longer-term historical returns, though they were still positive. The valuation adjustment from higher rates did not materialize in private infrastructure as we had anticipated. A mix of abundant dry power, anticipated rate cuts, and generally healthy company fundamentals kept valuations elevated. As the specter of near-term rate cuts diminishes, core infrastructure funds may come under pressure to raise discount rates. Whether that happens or not, we see lower returns ahead for the asset class as financing costs pressure returns.	<ul style="list-style-type: none"> — Valuations remain disconnected from public company values and where private infrastructure funds trade. The biggest risk we see to the asset class is the potential for material write-downs as rates stay elevated for longer. — There are some asset specific challenges like Fiber-to-the-home (FTTH), UK water utilities and underperforming energy transition assets. — Many GPs that have been successful in the sector have grown rapidly, raising \$15+ billion funds. Deploying this amount of capital while still delivering alpha becomes a challenge. 	Entry today is less attractive, given rich valuations and an elevated interest rate environment. We prefer allocations to non-core, although core can still maintain defensive characteristics from sectors less exposed to GDP risk. We recommend waiting on new commitments to core open-end infrastructure funds until we get a better sense of the path of interest rates and/or we begin to see funds adjust valuations lower to account for the higher cost of capital environment.	Neutral
Non-Core Infrastructure	Transaction activity finally slowed in 2023 to its lowest level in over eight years as bid-ask spreads widened. Fundraising in 2023 across infrastructure was around half of the levels reached in 2022. Despite that, a large amount of dry powder sits on the sideline. Performance has moderated but top quartile performance has stretched higher, a product of the asset classes' evolving strategy. The blurring line between buyouts and infrastructure is a troubling trend for an asset class that is meant to offer stable returns. There remains a significant capital need for more modern infrastructure to keep up with the digital economy and electrification of the grid.	<ul style="list-style-type: none"> — We would be cautious about strategies that expose investors to technology risk and/or commercialization risk in growing sectors like digital and electrification. — "Core" is defined by long-term contractual payments with the ability to pass on costs, often including forms of inflation protection. The further you move up on the risk spectrum, the less inflation protection investors will receive. — Fundraising is the slowest in years, and while dry powder remains robust, consecutive years of slow fundraising could make exiting existing assets challenging. 	The asset class offers a compelling return profile that aligns well with long-duration pools of capital. Non-core infrastructure comes with higher operational/execution risk than core, therefore investors should expect a broader range of outcomes and greater emphasis on manager selection. We prefer a rifle-shot approach with managers who have a robust track record and deep experience in a market niche. Strategies targeting assets in the middle market, building the infrastructure of tomorrow remain our highest conviction.	Positive
Energy Transition	A few years ago, wind and solar renewables were the only way to invest in this theme. Higher rates has been a headwind for the industry and low barriers of entry in the form of new development have led to pricing compression that we believe will continue. There are potentially higher returning opportunities for newer technologies such as battery storage and distributed energy. Tailwinds to the theme still persist in the form of policy support and growing demand for energy from transitioning sectors like transportation.	<ul style="list-style-type: none"> — Several approaches that reduce carbon emissions such as green hydrogen and carbon capture technology are commercially unproven. Investments in this space will take venture-like risk and rely on significant cost reductions as well as favorable policy regimes to be successful. — The market continues to become more competitive with managers investing from diversified strategies and energy transition funds. 	Energy demand will increase opportunities related to this theme, but achieving an attractive return remains difficult given the competition. Solving grid stability and providing utility power generation and services is an area we find compelling with less technology adoption risk. We are seeing risk underpriced in the marketplace so backing the right manager will be critical.	Neutral

Outlook summary (continued)

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
Upstream Energy	The environment for oil & gas investments looks more attractive today than it has in many years. Last year, we saw a notable uptick in transaction activity among sponsor-backed oil & gas companies, which was sorely needed. We still maintain that liquidity is going to remain a real risk to investors in private energy funds, along with regulatory and demand risk, but seeing buyers return to the market has given us confidence to consider new allocations to the industry. On a relative basis, valuations are compelling, supply/demand metrics look favorable, and capital is scarce. All characteristics that we do not see elsewhere.	<ul style="list-style-type: none"> — Liquidity could be episodic/cyclical which private investors will have to accept going into the asset class. — Longer-term, oil demand is expected to decline as non-carbon sources of power outcompete hydrocarbons. — Regulatory risk remains an existential threat to oil/gas but one we see as small given the larger geopolitical issues surrounding energy security. 	We believe there is an interesting window to invest in upstream oil/gas with an experienced sponsor. There are a small handful of oil/gas sponsors with a decade or more of experience that have viable track records to raise capital around. We would look for a fund in market that has seasoned investments already accruing value and less blind pool risk.	Neutral
Midstream Energy	Public midstream indices were up around 14% in 2023, capping off an impressive 3-year run of double-digit returns. The last three Outlooks highlighted the challenges that private midstream funds would face in deploying capital to traditional gathering and processing deals and that remains largely accurate. Public midstream companies are outcompeting private funds with a lower cost of capital and the opportunity set is narrower today than it was 10 years ago. The opportunity within oil and gas looks more attractive on the upstream side for private investors. Public midstream stocks are benefiting from growing volumes in oil production and LNG export activity. The asset class is notoriously volatile, and sentiment can shift abruptly, making allocations challenging to merit for institutional portfolios	<ul style="list-style-type: none"> — Public midstream stocks are highly correlated to movements in commodity price so any movement lower in oil prices is going to be a headwind to performance. — Tactical trades into the asset class have been incredibly challenging to time given the unpredictable movement in oil and gas prices. — Private midstream faces an existential problem of finding enough development opportunities within oil & gas infrastructure to build a diversified portfolio of companies. 	We retain a negative outlook for midstream energy, despite the positive tailwinds that higher oil prices could bring to this sector in the near-term. Low natural gas prices have led to declining volumes which is likely to be headwind to gas-oriented assets, but oil volumes remain robust. The challenges in capital deployment and long-term demand risks remain too high for our comfort.	Negative

Outlook summary (continued)

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
Mining	<p>Long-term demand growth continues to be a dominant narrative as metals like copper, zinc, lithium, and nickel (among others) are increasingly viewed as undersupplied for global decarbonization goals.</p> <p>Commodity prices for metals have increased in 2024 on expectations of interest rate cuts and increased demand from China. While major mining companies are flush with cash from a half-decade of discipline and elevated commodity pricing, the current price of commodities has not been enough to finance new greenfield mines, and older mines in service are beginning to diminish in quality.</p>	<ul style="list-style-type: none"> — Metal prices have run up in 2024 on expectations of rate cuts in the latter half of the year. However, as we have seen, inflation can be sticky and may result in higher rates for longer periods and, as a result, pressure prices downward on commodities. — The sector continues to be troubled by persistent cost inflation from labor, equipment parts, diesel, and explosives, which results in margin erosion. — Global GDP growth and China's economy are the two biggest demand drivers in the sector. China is a disproportionately large buyer of industrial metals, so its economy and industrial output have a large impact on metal prices. 	<p>While the long-term demand for energy transition metals is a compelling thesis, the reality of investing in mining is that many risks must be overcome: operational, political, and environmental. Even when executed, returns can be hampered by weak commodity prices. We prefer to implement mining investments on an opportunistic basis, especially when commodity pricing is lower.</p>	Neutral
Timberland	<p>Timberland was up 9.5% in 2023, most of which was appreciation-driven. Income, as a component of the NCREIF Timberland return, was again lower than the previous two years. Land values continued to increase, albeit more modestly than in 2022. We remain skeptical about the sustainability of returns within the asset class if cash flows are flat to negative YoY. Housing starts have been weak since plunging in spring 2022 when mortgage rates soared, though they have started to recover recently as rates eased. Excess supply of pine inventory in the South remains a headwind to sawtimber pricing and ultimately returns for timberland funds.</p>	<ul style="list-style-type: none"> — Flat sawtimber pricing for pine and higher input costs are just some of the issues creating headwinds for the asset class. — With weaker expected returns for the asset class, TIMOs have turned to Latin America for restoration opportunities that generate carbon credit in addition to traditional return drivers. We view the risks of investing in emerging markets as not commensurate with the returns. — Liquidity has been an issue for the asset class for the better part of a decade, and fundraising trends have yet to improve to the point where we see transactions becoming robust. 	<p>Despite above average returns over the last 3 years, we would continue to avoid allocations to timberland. There are more attractive options available in real assets, and many have cash flows that justify the higher valuation. Fundraising has been slow to non-existent for closed-end timber funds for several years, which has resulted in a weak transaction market.</p>	Negative

Outlook summary (continued)

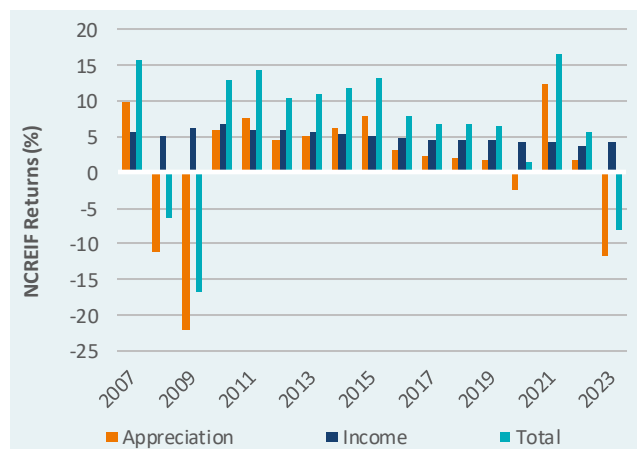
Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
Agriculture	<p>Supply disruptions related to COVID and global conflict sent grain prices to multi-decade highs that continue to stabilize at lower prices in 2024. Land values for some crops have appreciated, driven by higher commodity prices. Despite this, rental yields continue to shrink as farmers struggle to keep up with cost increases.</p> <p>Fundraising has been slow in the last few years as income returns remained unattractive and investors favored other asset classes. Structural drivers should make agriculture more attractive as global demand rises and the amount of arable land remains relatively stable, but we have yet to see this affect investors returns.</p>	<ul style="list-style-type: none"> — Agriculture is a highly illiquid asset class that is not suited to tactical investment opportunities. — Anecdotally, we have seen many managers affected by natural disasters, and this seems to be becoming increasingly prevalent. We recommend diversifying across crop types and geography within the U.S. to reduce risk. — Permanent crops have not performed well in the last few years as prices have fallen for several perennial crops. Tariffs, excess supply, and consumer demand all contributed to lower permanent crop prices and highlight just a few of the additional risks that come with Ag investing. 	<p>For investors seeking pure-play cropland investments, we recommend diversifying across row and permanent crops focused on the U.S. market. The fragmented nature of farmland in the U.S. has made scaling a challenge so we would be weary of strategies seeking to deploy large pools of capital (>\$1B). We also view agriculture investments where crop and land are a component of a broader value-add investment strategy as more attractive than core farmland funds, but operational complexity brings its own set of challenges.</p>	Negative

Current conditions and outlooks

Real estate performance – Recent history

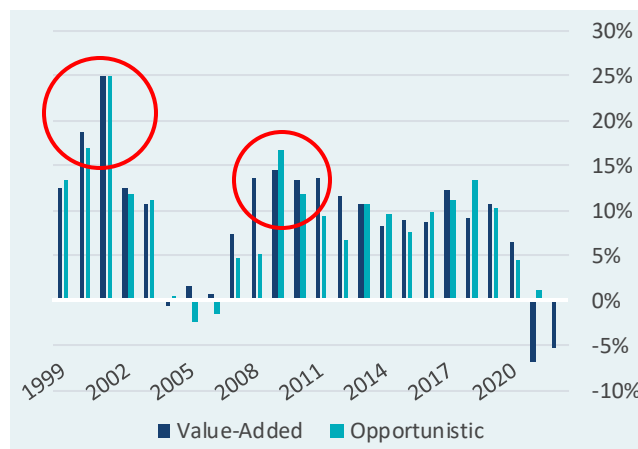
- Core real estate was negative in 2023. The unlevered NPI Index was down 7.9%, with the levered NFI-ODCE Index down 12.0%. 1st quarter of 2024 was also negative for both indices at -1.0% and -2.4%, respectively.
- Since late 2022, core real estate has experienced six consecutive quarters of write-downs, totaling negative 11.3% for the unlevered NPI Index and negative 18.4% for the levered NFI-ODCE Index.
- In 2023, every core sector was negative, ranging from office at -17.6% to retail at -0.9%. After years of performance headwinds and capital flight, retail assets that survived obsolescence are experiencing renewed interest.
- Non-core real estate vintage funds have historically outperformed during recessionary years and early recovery periods (e.g., 2000-2003 and 2009-2011) as market dislocations created attractive entry valuations. Given the recent stress in the market, current non-core vintages could be attractive, especially opportunistic strategies with a focus on distress.

NCREIF PROPERTY INDEX RETURNS (CORE)



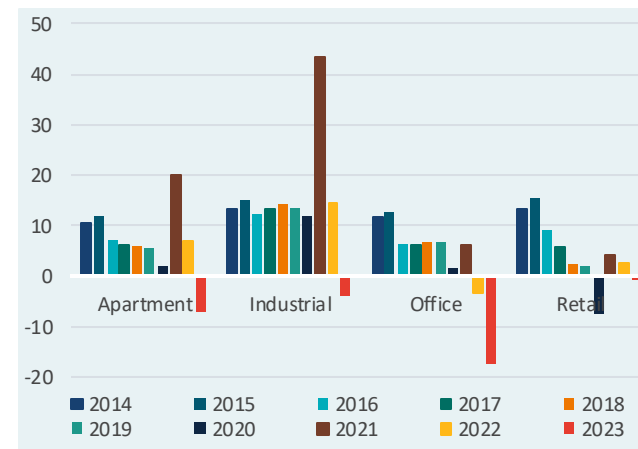
Source: NCREIF, as of 12/31/23

**VINTAGE YEAR MEDIAN RETURN (%)
NON-CORE REAL ESTATE**



Source: Refinitiv, as of 9/30/23

CORE SECTOR ANNUAL RETURNS (%)

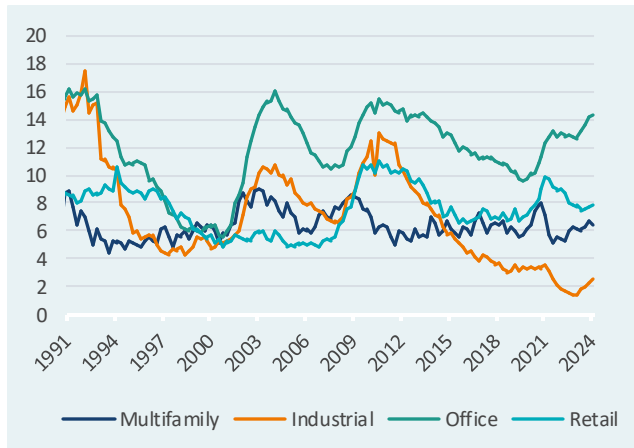


Source: NCREIF, as of 12/31/23

Real estate fundamentals

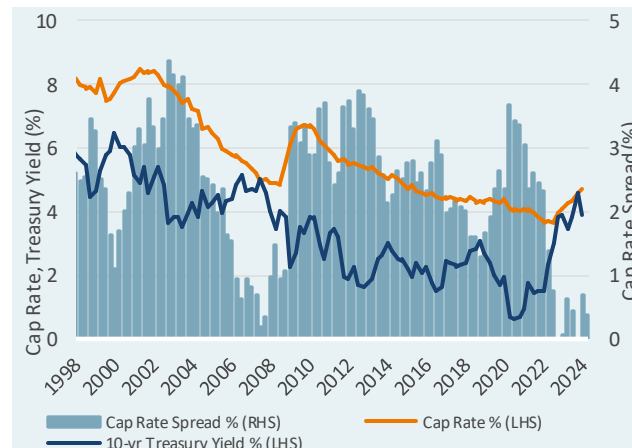
- Private real estate fundamentals have generally weakened over the last year with vacancy rates ticking upward and net operating income trending downward.
- Cap rates spreads however, have bounced around zero as they have been adjusting to the higher interest rate environment. While cap rates and interest rates do not trade in lockstep over shorter time periods, they generally correlate with each other over the long run. Since mid 2022, interest rates have climbed 3%, while appraisal cap rates have climbed 1%. The valuation process lags, and we expect continued pressure on cap rates, likely through 2024.
- Vacancy rates have been ticking upward for all sectors, with the exception of retail, which has trended down recently due to lack of new supply from years of underinvestment.
- NOI growth has come down from the highs of 2021 and early 2022 but remain positive for all sectors including office, although office has been bouncing around zero.

VACANCY BY PROPERTY TYPE



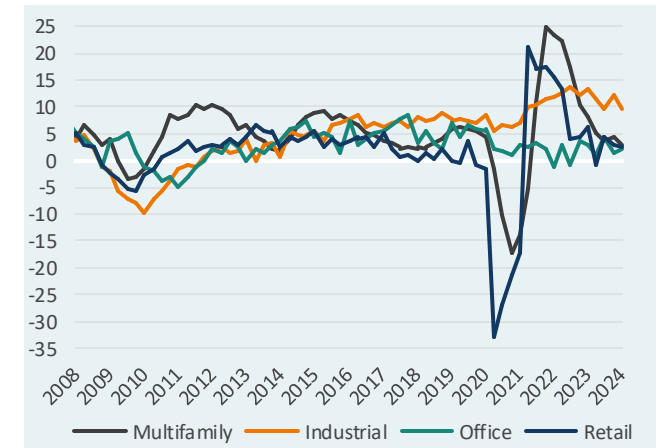
Source: NCREIF, as of 3/31/24

CAP RATE SPREADS



Source: FRED, NCREIF, as of 3/31/24

4-QTR ROLLING NOI GROWTH (%) BY PROPERTY TYPE

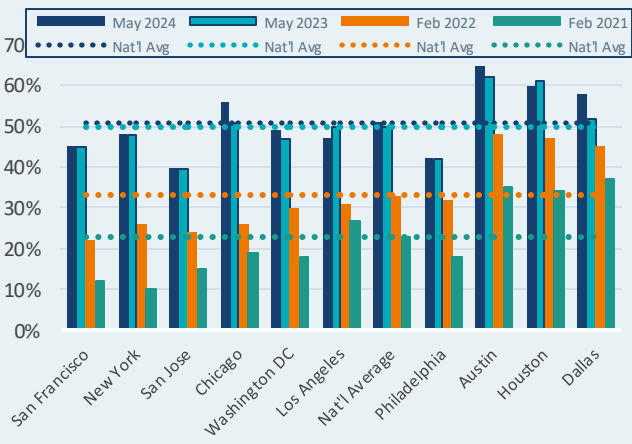


Source: NCREIF, as of 3/31/24

Office – challenges persist

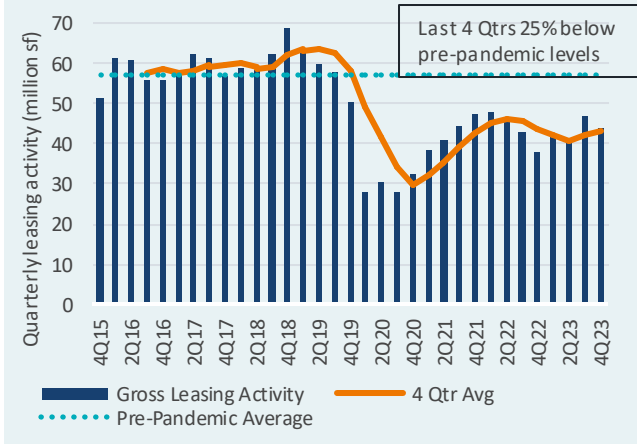
- Physical occupancy remains at 51% of pre-covid levels (nationally) and has not seen any significant improvement over the last 12 months. Structural shifts remain with most companies embracing a hybrid work environment.
- Peak office usage on a given week is modestly higher as peak Tuesday office usage is averaging 60%, leaving room for employers to continue to shrink their office footprints.
- New leasing activity is trending slightly upward, however is still down 25% relative to pre-pandemic levels.
- We continue to see a bifurcation in demand with new leasing activity gravitating towards newer office buildings with more attractive amenities. Office buildings delivered since 2015 have experienced positive net absorption since Covid while all other buildings are facing net tenant outflows.
- The leasing cycle for office tends to average 5-7 years, so many leases are still at pre-pandemic levels. Values remain uncertain and will likely take several years to work through the system and fully reset. Capital is scarce for office assets, leading to few transactions and financing is a challenge as lenders are reducing exposures to the sector.

OFFICE PHYSICAL USAGE TRENDS



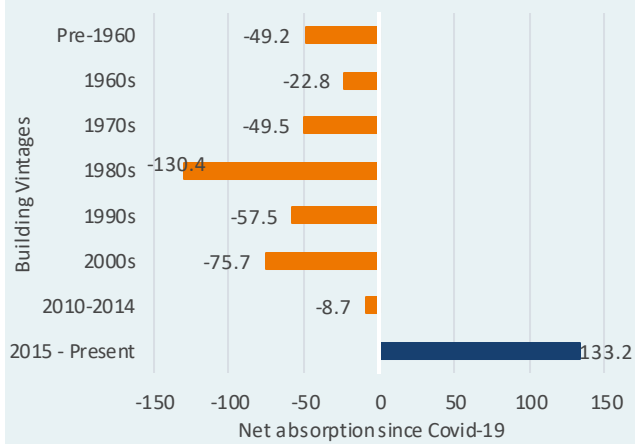
Source: Kastle, 5/13/24

OFFICE LEASING ACTIVITY (QUARTERLY)



Source: JLL, March 2024

FLIGHT TO QUALITY – NET LEASING ACTIVITY

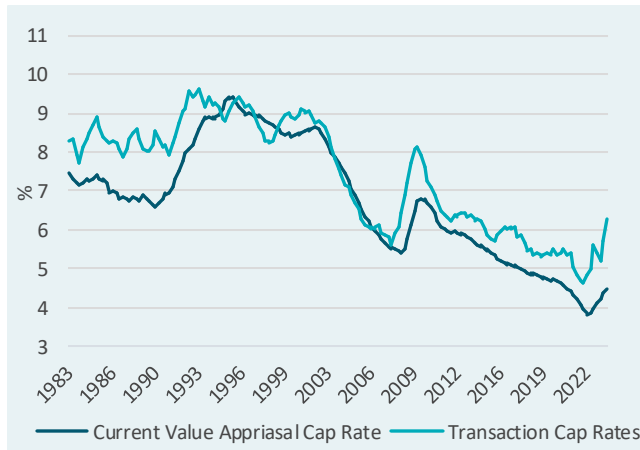


Source: JLL, March 2024

Cap rates

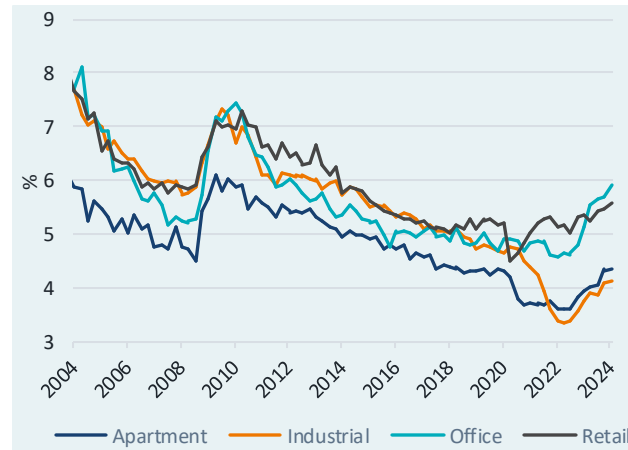
- Private real estate appraisal cap rates have been slower to react to the rising interest rate environment. This is not atypical, as the appraisal process generally lags when there is a decline in transaction volumes and fewer comparable sales or “comps” for appraisers to use as a data set.
- Where transactions are taking place, there is a continued widening gap with appraised values, indicating there is more downside to come in private valuations as they adjust to “market”.
- We have also seen a widening gap over the last several years between property types as industrial and multifamily have been in favor with investors, versus office and retail. Private market cap rates have come up 0.7% over the last 2 years (through the end of ‘23).
- We can also look to the public real estate markets for an idea of where cap rates are heading. Implied cap rates in the REIT market have moved up quickly as indicated in the chart on the bottom right. Implied cap rates are more volatile but can be a leading indicator directionally as they are quicker to respond than the appraisal process.

PRIVATE CAP RATES (4-QTR MOVING AVERAGES)



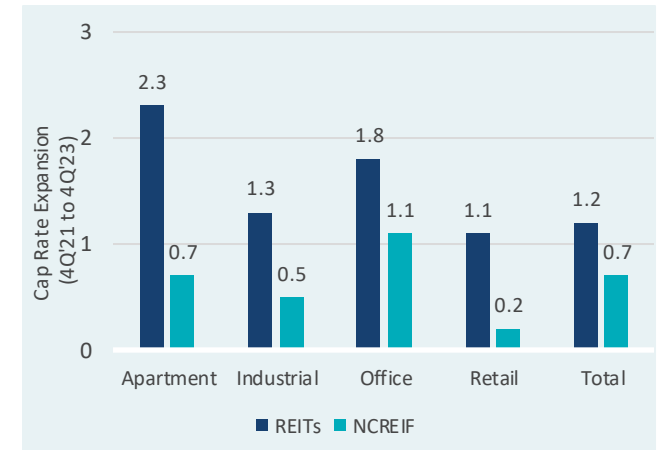
Source: NCREIF, 3/31/2024

CURRENT VALUE CAP RATES BY PROPERTY TYPE



Source: NCREIF, 3/31/2024

PRIVATE CAP RATES VS REIT IMPLIED CAP RATES



Source: NCREIF, NAREIT, 12/31/23

Real estate – New supply and absorption

Demand has declined recently while new completions remains elevated.

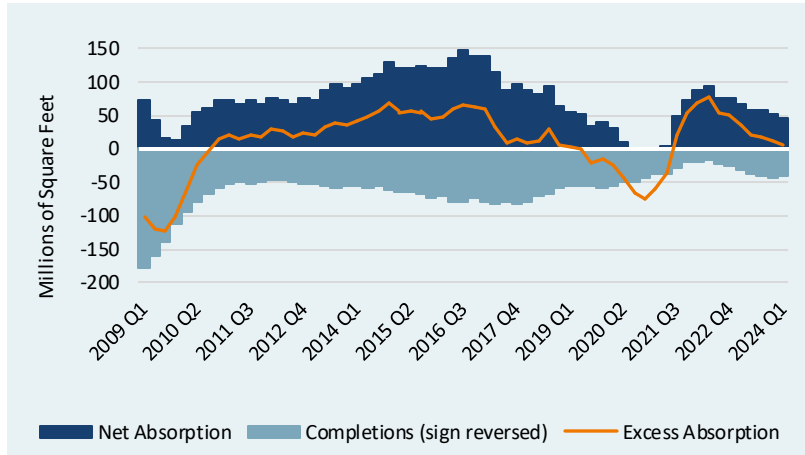
Demand has been declining across most segments of CRE markets.

Excess net absorption has been negative (with the exception of retail) as higher levels of new construction from years prior are hitting the market.

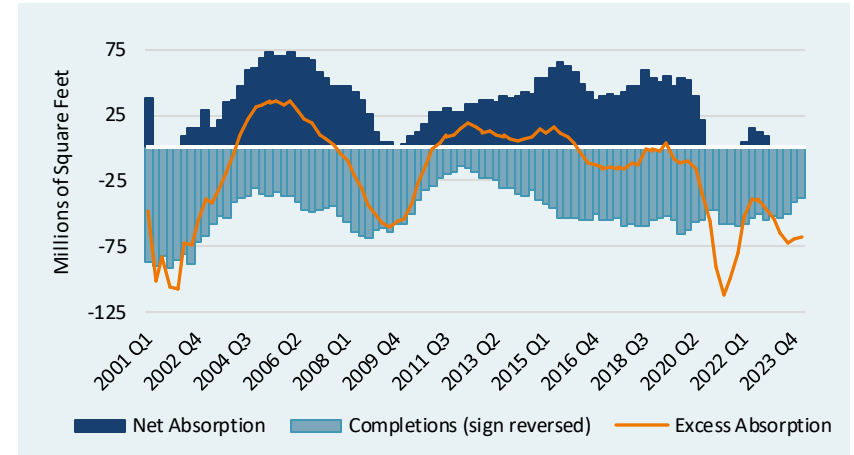
Given higher construction costs and availability of debt, new permitting has declined, indicating new supply may begin to trend back down.

Retail is the one bright spot for this metric, as new completions remain muted.

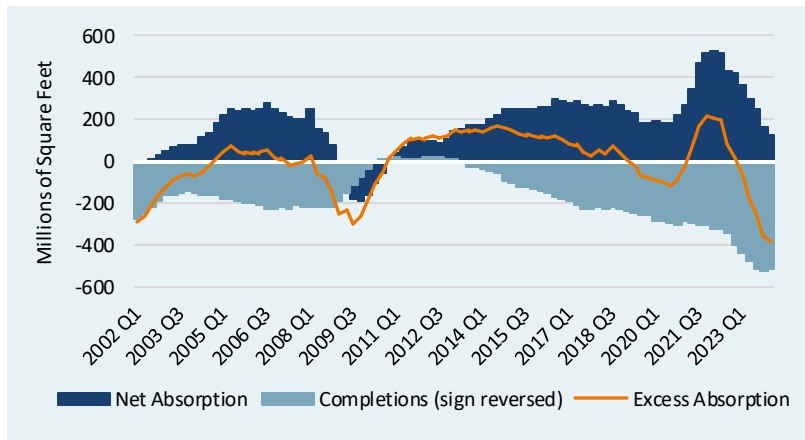
RETAIL



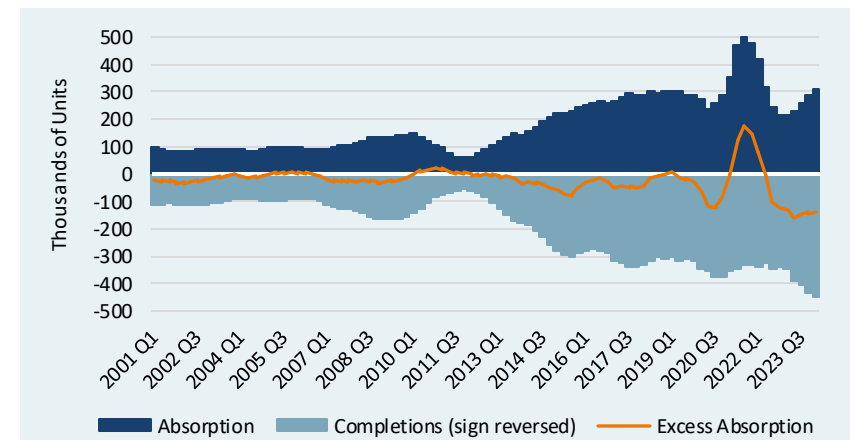
OFFICE



INDUSTRIAL



MULTIFAMILY

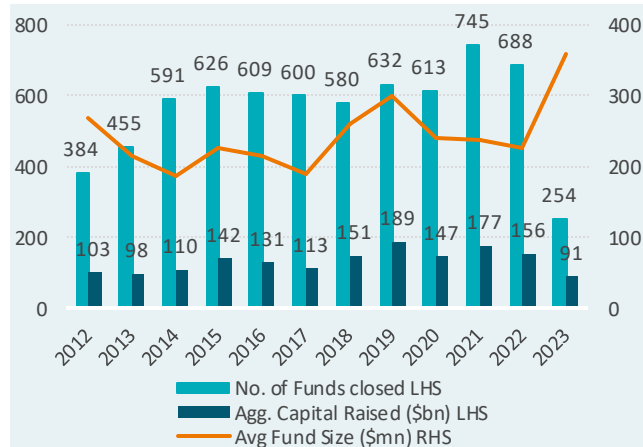


Source: American Realty Advisors utilizing CoStar data as of 12/31/23

Real estate fundraising

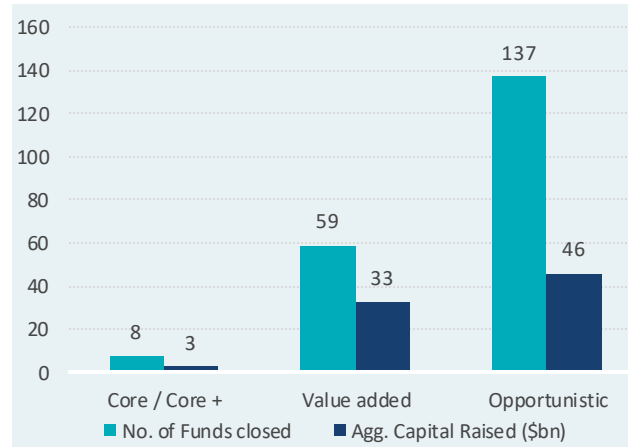
- The number of funds closed declined substantially over the last year with the total amount of capital raised coming down as well. The average fund size was higher overall. Many funds are staying in market much longer, extending final closes into 2024.
- Dry powder in the closed-end fund space has come down slightly, off record highs. Transaction volumes have continued to be depressed in 2023 and early 2024.
- The majority of funds that closed the last couple of years were targeting opportunistic and distressed strategies, a shift from prior years where value-add was relatively higher. Investor preference appears to be for funds that can take advantage of stressed market opportunities and/or investing through the capital structure.
- Current core real estate open-end fund redemption queues total over \$39 billion (averaging 17% of NAV) from 21 core funds that Verus recently surveyed. This has grown from \$33 billion a year prior, and most funds expect to take well over a year to satisfy redemption queues. As core funds continue to re-price, delivering negative returns, redemptions have hit levels not seen since the GFC.

HISTORICAL PRIVATE REAL ESTATE CLOSED-END FUNDRAISING (\$B)



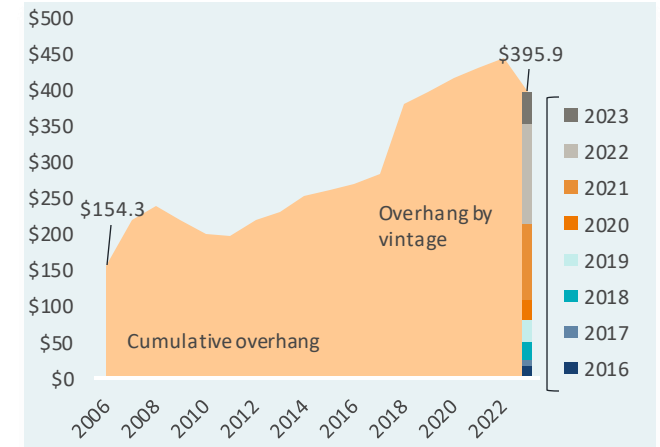
Source: Pitchbook, as of 12/31/23

2023 PRIVATE REAL ESTATE CLOSED-END FUNDRAISING (\$B) BY STRATEGY



Source: Pitchbook, as of 12/31/23 (Opportunistic includes Distressed)

DRY POWDER (\$B) – CLOSED-END FUNDS



Source: Pitchbook, 12/31/2023

Real estate debt

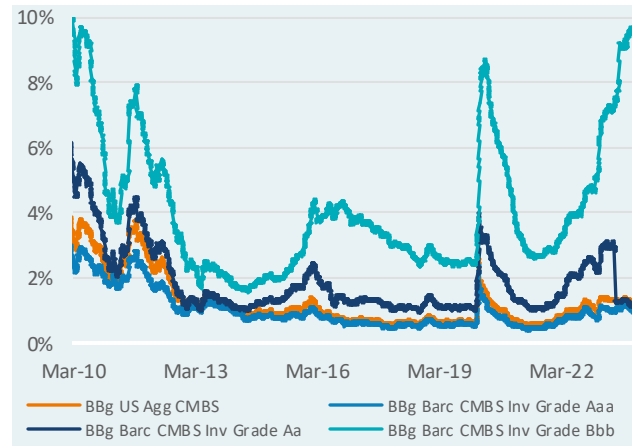
- Spreads within commercial real estate lending have come down slightly from one year ago. With base rates moving from 0 to 5% in two years and CRE spreads at a premium to corporate loans, we still see an attractive risk-adjusted return for lending strategies.
- CMBS spreads have widened dramatically between higher-quality and lower-quality rated bonds. Higher-quality bonds are trading at relatively tight spreads while BBBs are trading at near-record highs. Exposure to office assets within CMBS has contributed to spread volatility.
- We would caution that some evergreen CRE debt strategies have continued to experience defaults/write-downs with additional valuation pressures possible, especially from office loans.
- Transaction volumes have fallen off over the last two years, though private capital is facing less competition from traditional lenders (banks and insurance companies) as many are de-risking their portfolios.
- Lending standards have tightened up for all loan types but particularly for construction and development loans.

PRIVATE MARKET LENDING SPREADS

	Stable Asset Whole Loans	Transitional Asset Whole Loans	Lower Risk Mezz LTV	Transitional Asset Mezz & Pref Equity	Development Loan Mezz & Pref Equity
Capital Stack	0 - 65% LTV	0 - 80% LTV	50-65% LTV	65-80% LTC	65 - 80% LTC
Duration	2-5 Years	2-5 Years	2-7 Years	2-4 Years	2-4 Years
Typical Lending Spreads	SOFR + 1.5-1.75%	SOFR + 2.65 – 4.25%	SOFR + 4.0-5.5%	SOFR + 6.0 - 8.0%	SOFR + 11-14%

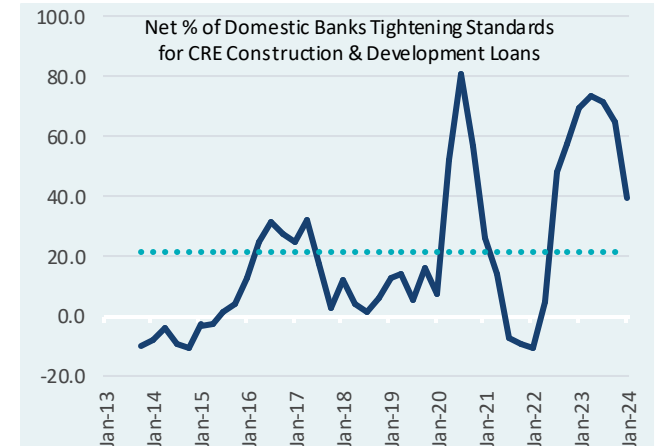
Source: PGIM, as of 5/28/24

CMBS SPREADS



Source: Bloomberg, as of 5/6/24

DECLINE IN CONSTRUCTION FINANCING

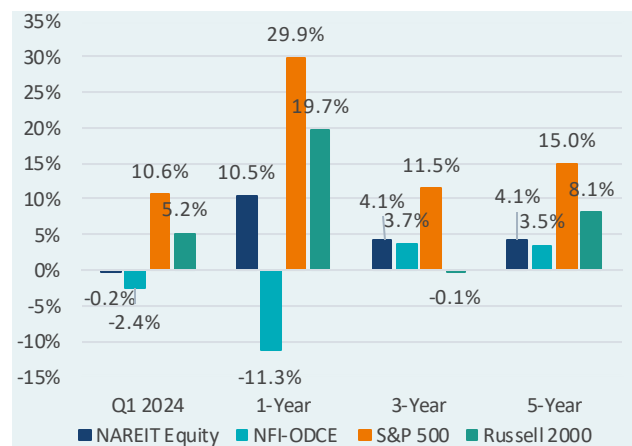


Source: CenterSquare, The Federal Reserve, as of January 2024

REITs

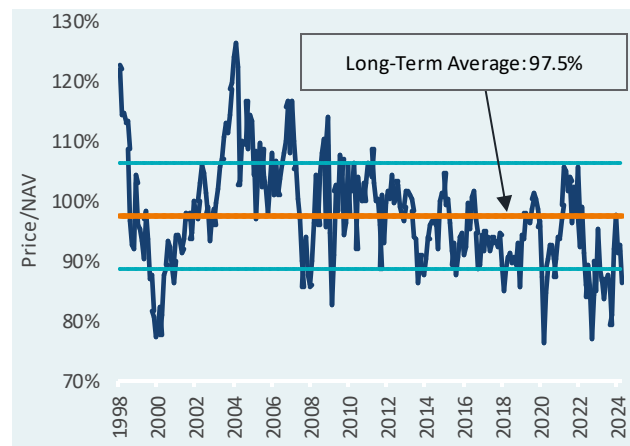
- REITs were flat in 1Q'24, underperforming the S&P 500 by 10% in the quarter. REITs also underperformed broader equities in calendar year 2023 (16.1% vs 26.3% for S&P 500) and in 2022 (-26.8% vs -18.1% for the S&P 500).
- REITs have outperformed private core real estate over the last year by over 20% (+10.5% vs -11.3% for NFI-ODCE Index) and now have similar returns to private core real estate over 3- and 5-year trailing periods.
- REITs are currently trading at a discount of approximately 12% of NAV through April 2024, a reasonable entry point for those looking to get into the asset class.
- We are neutral on REITs; while there are moderate discounts to NAV, the volatility in the asset class make it difficult to be tactical and the NAVs themselves are going to be volatile given the valuation uncertainty in real estate more broadly.
- REITs do offer differentiated exposures vs private core real estate. Outside of the four main property types, core real estate exposure to other property types is 8-10%, while REIT exposure to those same non-core sectors is greater than 50% and has been increasing over the last two decades as shown below.

REIT PERFORMANCE



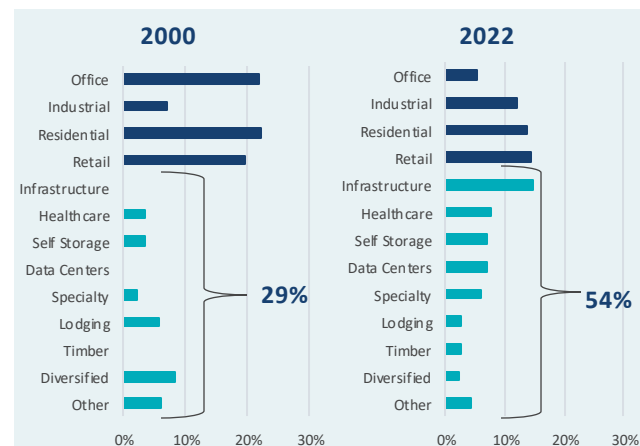
Source: Bloomberg, NAREIT, NCREIF, as of 3/31/24

REIT PRICE TO NAV



Source: CenterSquare, as of 4/30/24

GROWTH IN ALTERNATIVE PROPERTY TYPES



Source: NAREIT

Commodities

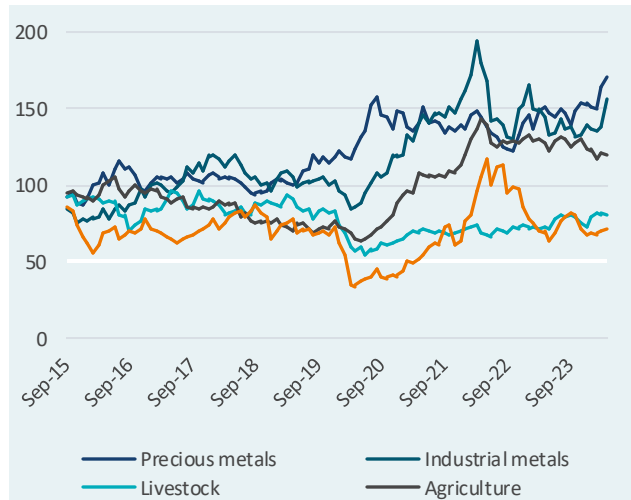
- Commodities experienced a pullback in 2023, falling around 8.0%, led by declines in the energy commodity sector. Year to date, the asset class is up mid-single digits as oil-related commodities have moved higher.
- The roll return component of the index is modestly positive, though that has seen a sharp reversal from peaks set in late 2022. Oil is still trading in contango but has flattened out from levels seen in 2022 and 2023.
- Our outlook for commodities shifted to negative in last year's report and we remain negative for 2024. Inflation has been stickier than the market and Fed anticipated but we see a resurgence in inflation as an unlikely outcome. We would recommend investors avoid allocations to commodity futures.

INDEX AND SECTOR PERFORMANCE

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg Commodity	3.3	2.2	2.2	(0.6)	9.1	6.4	(1.6)
Bloomberg Agriculture	2.5	(3.0)	(3.0)	(7.3)	8.3	10.7	(1.5)
Bloomberg Energy	2.4	4.8	4.8	1.0	13.2	(1.2)	(9.3)
Bloomberg Grains	2.5	(8.0)	(8.0)	(18.0)	1.8	7.4	(3.9)
Bloomberg Industrial Metals	1.8	(0.7)	(0.7)	(7.9)	2.2	4.8	2.4
Bloomberg Livestock	(0.8)	11.0	11.0	13.7	4.8	(2.7)	(3.5)
Bloomberg Petroleum	6.2	16.7	16.7	24.0	31.1	11.9	(2.4)
Bloomberg Precious Metals	8.6	6.6	6.6	9.9	6.6	10.0	3.9
Bloomberg Softs	0.7	9.6	9.6	18.9	22.4	14.1	(0.3)

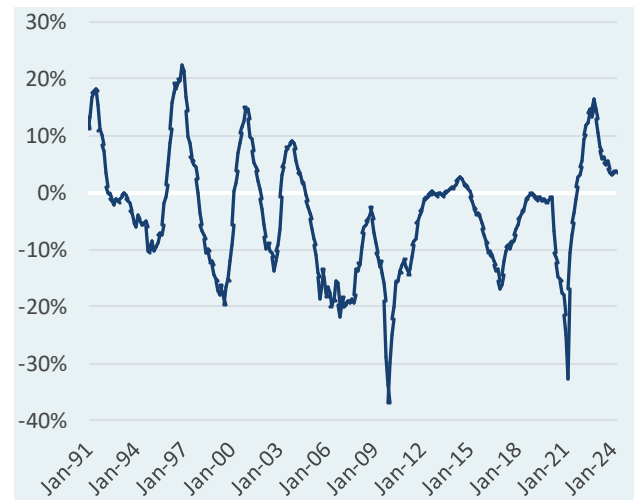
Source: Morningstar, as of 3/31/24

SECTOR PERFORMANCE



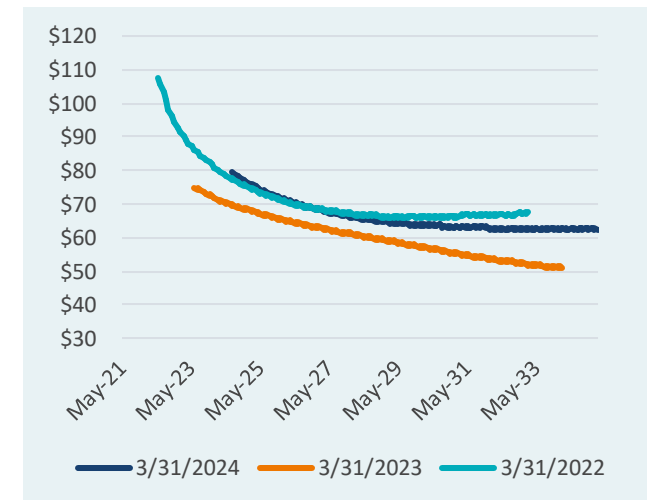
Source: Bloomberg, as of 3/31/2024

ROLL RETURN



Source: Bloomberg, as of 3/31/2024

CURVE SHAPE (WTI)

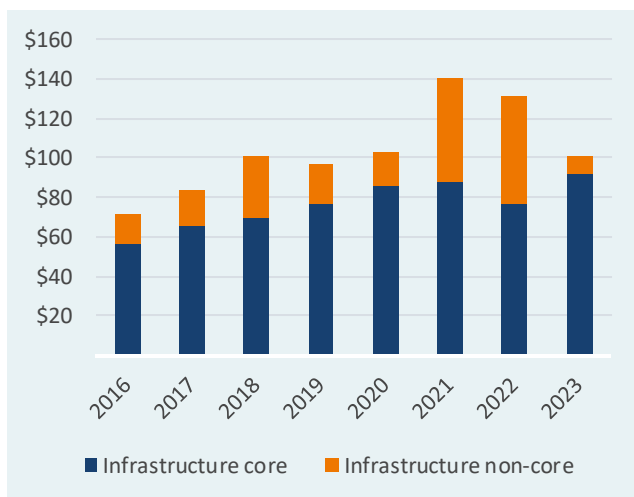


Source: Bloomberg, as of 3/31/24

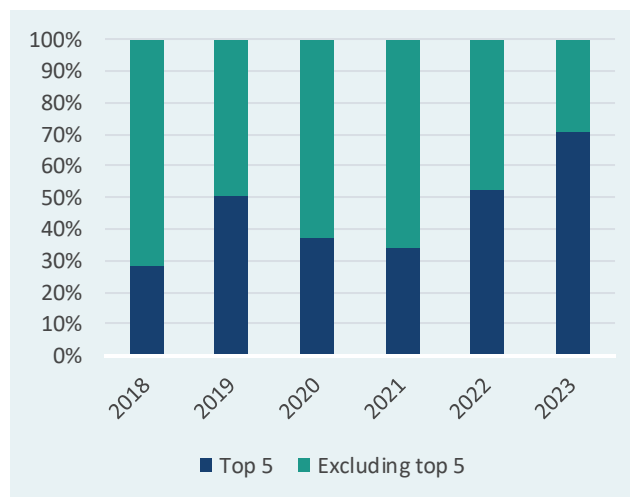
Private infrastructure

- Infrastructure fundraising continued its downward trajectory after a high watermark in 2021. More than 80% of the capital raised was in core or core-related funds, and extending a trend that emerged out of COVID, capital continued to be raised predominately by large managers. The five largest funds in 2023 accounted for ~70% of all capital raised in the space. For many institutions, large infrastructure managers are a foundation of an infrastructure portfolio, but the ability to build satellite positions with potentially higher returning funds is a challenge if the industry continues to concentrate around a handful of large GPs.
- Following the last two years of slower fundraises, dry powder has been depleted proportionally, down to an estimated \$244 billion. While liquidity in the sector is not an immediate concern, given the amount of capital on the sidelines, pent-up demand has the potential to quickly burn through asset classes' overhang if fundraising trends were to continue.
- Particularly, for pensions and sovereign capital, we believe infrastructure will remain in favor with allocators given strong performance. Slowing fundraising is all relative given the post-Covid boom in capital raising for the asset class. The trend we find more concerning is the manager concentration and lack of attractive middle market opportunities.

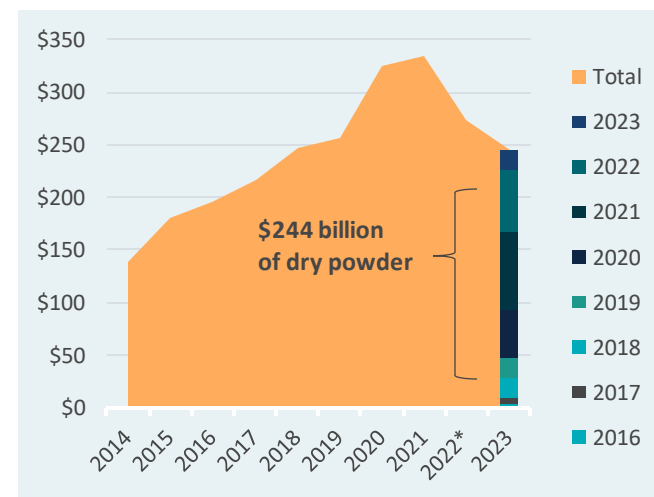
INFRASTRUCTURE FUNDRAISE BY FUND TYPE



% RAISED BY TOP 5 INFRASTRUCTURE MANAGERS



CAPITAL OVERHANG



Source: Pitchbook, as of 12/31/2023

Private infrastructure (continued)

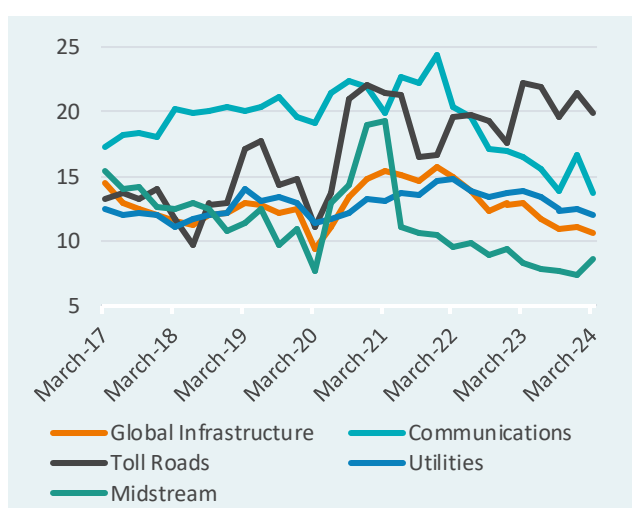
- Infrastructure returns have remained resilient in contrast to downward price pressure in other asset classes from higher interest rates. Quarterly returns have come down in 2023, but they still outperformed other private asset classes, notably private equity and real estate. Subsectors like Fiber-to-the-Home (FTTH) have recently come under pressure, but infrastructure as an asset class continues to deliver a stable return and inflation protection.
- While performance has remained strong, we have concerns about elevated asset prices. In public markets, the pricing of publicly listed assets has fallen dramatically, some sectors as much as 25% from their peak. Transaction volumes have declined as buyers and sellers fail to agree on a fair price. Headwinds for the asset class, such as higher financing costs, slowing inflation, and slowing GDP growth, have yet to be priced into valuations. The availability of debt financing and record levels of dry powder were thought to contribute to the asset classes resilience the last two years, we are eager to see if that can continue in 2024.
- Along with a higher interest rate environment, the prospect of GDP growth slowing could present another headwind. We would expect some sector dispersion as transportation will likely struggle with slowing global trade. Digital infrastructure has some secular tailwinds but is highly dependent on the spending habits of a small group of technology companies. Highly regulated/contracted sectors with limited GDP risk (e.g., utilities) would be expected to remain resilient.

INFRA DEAL VOLUME & VALUE



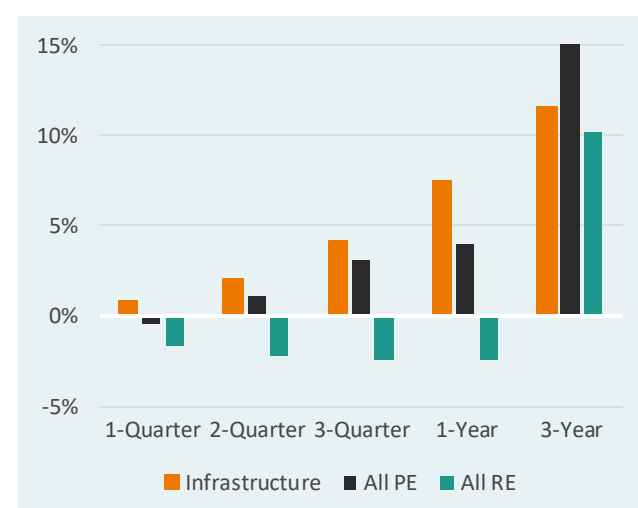
Source: Preqin, as of 9/30/2023

INFRASTRUCTURE VALUATIONS – EV/EBITDA



Source: Bloomberg; ICE BofA Indices, as of 3/31/2024

Q3 '23 TRAILING POOLED TWR

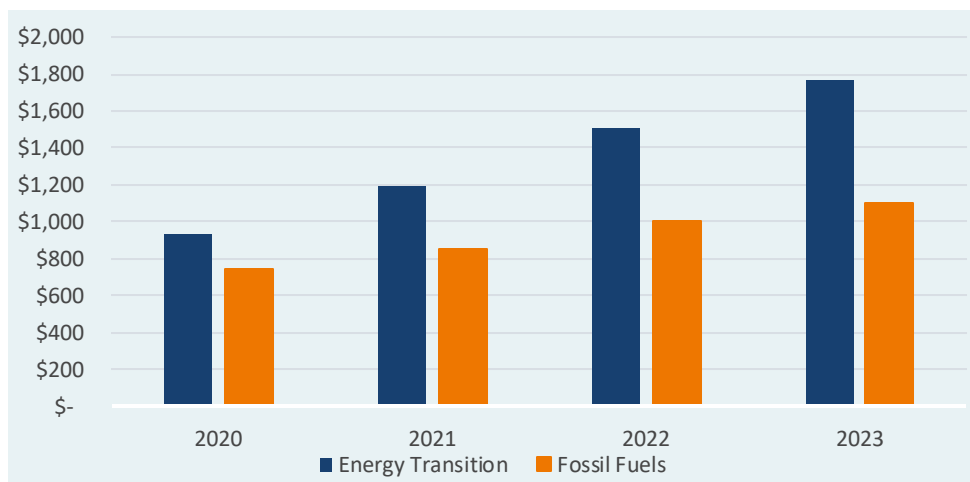


Source: REFINTIV C|A, as of 9/30/2023

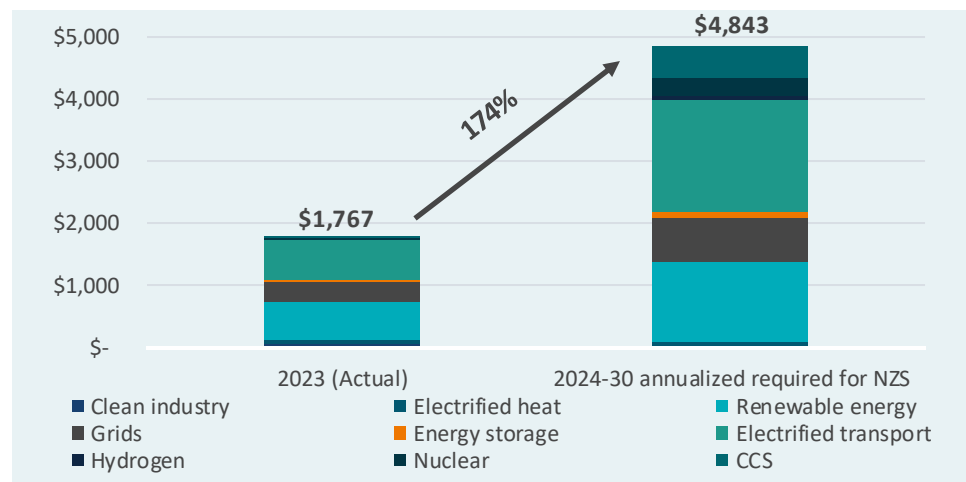
Infrastructure – Energy transition

- Data on fundraising within energy transition is opaque, as funding comes from several sources including venture capital, buyouts, infrastructure, and natural resources. Within real assets, we know that many infrastructure managers are allocating portions of their funds to investments in renewable energy generation, electrified transportation, and distributed energy resources (DER). More broadly, we have seen a flurry of new strategies in the last 5 years that invest around themes in renewables, critical minerals, energy transition, and decarbonization.
- Global investment in energy transition reached and exceeded that of fossil fuels, according to a study from Bloomberg. Historically, the largest segment, renewable energy, continued its growth, making up just over \$600 billion in 2023. A new leader, electrified transportation, has now taken the title as the largest sector by capital invested, growing some 36% year over year.
- Global investment, at \$1.8 trillion, is up 17% from the previous year. China accounted for 38% of global investment alone. The US, EU, and UK combined were able to edge out China’s investment at an estimated \$725 billion. Moreover, Bloomberg estimates that reaching net zero by 2050 would require \$4.8 trillion of investment a year for the next 6 years (2024-2030), a 174% increase from 2023. We believe private capital is in a unique position to capitalize on the opportunity. Our enthusiasm is tempered by a market that consistently misprices technology and/or commercialization risk and a habit of oversaturating a market opportunity.

GLOBAL INVESTMENT: ENERGY TRANSITION V. FOSSIL FUELS (\$B)



ANNUALIZED INVESTMENT REQUIRED TO REACH 2050 NET ZERO (\$B)

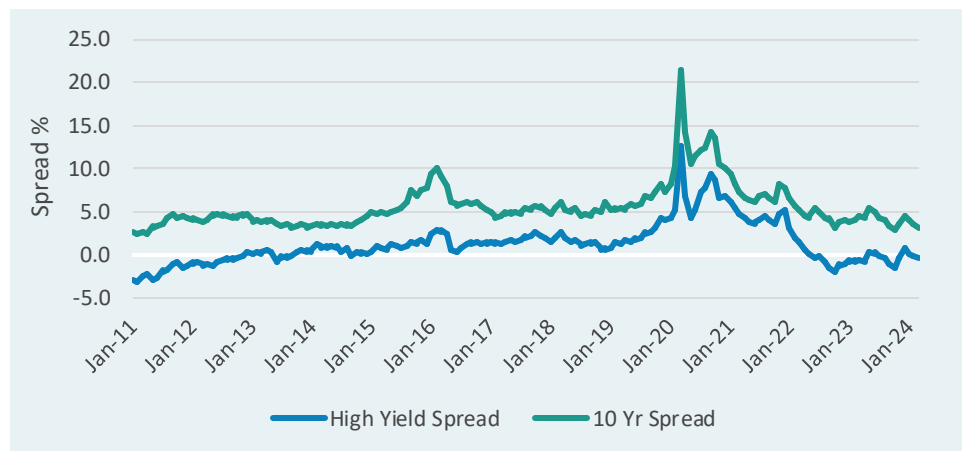


Source: Bloomberg NEF, as of 12/31/2023

Midstream energy/MLPs

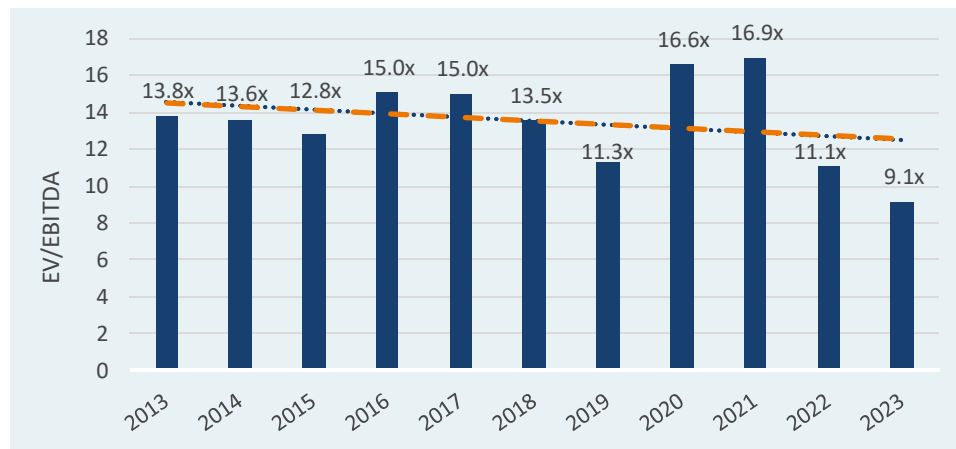
- Midstream energy stocks were up again in 2023, continuing an impressive 3-year run that has delivered annualized returns over 30% for the asset class. Yields for listed midstream companies now trade slightly below high-yield bonds but at a premium to Treasuries.
- Private midstream funds face similar fundraising challenges as their upstream counterparts, and similarly had trouble finding portfolio exits. More concerning for private midstream has been the challenge in deploying capital. Several midstream funds that we track are behind on investment deployment and we suspect a mix of fewer infrastructure projects being greenlit and lower cost of capital from the public midstream companies are the culprit.
- Valuations for the asset class appear cheap, relative to history, trading at around 9x EV/EBITDA. Record EBITDA figures certainly play a role in falling valuations, but oil/gas assets have been out of favor among investors, putting pressure on multiples. The U.S. is now producing record volumes of oil which has been a nice tailwind to the sector. Low natural gas prices are causing producers to reduce output which is likely to present a near-term headwind to gas-heavy basins and infrastructure.
- One interesting storyline to watch is the consolidation among oil/gas producers and how that concentration in producer volumes impacts pricing on midstream contracts in the future. Fewer producers competing for capacity could present a headwind to the pipeline owners.

MLP SPREADS VS HIGH YIELD & TREASURIES



Source: Bloomberg, as of 3/31/2023

MIDSTREAM VALUATIONS (EV/EBITDA)

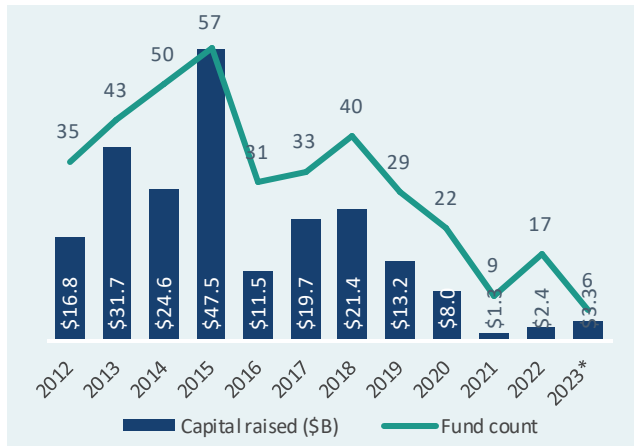


Source: Bloomberg; Alerian MLP Index, as of 3/31/2023

Energy – Oil/gas

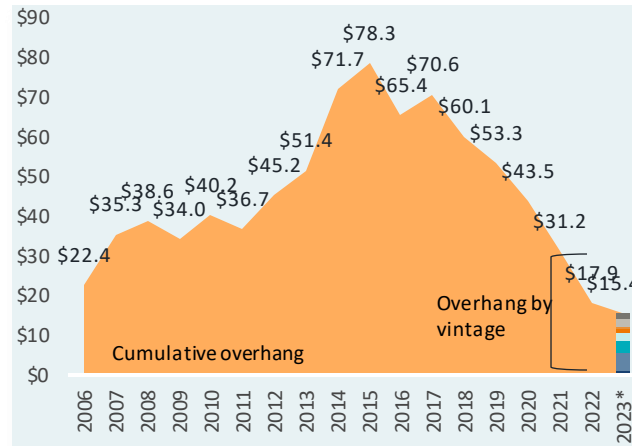
- Fundraising remains challenging as evidenced by the paltry fundraising figures from Pitchbook. The spike in commodity prices and subsequent move higher in portfolio valuations has given confidence to the industry that some LPs will revisit allocating to oil and gas upstream funds. We expect that the top 4 or 5 GPs in the sector will find investors, though fundraising is slow and could be challenged further if oil prices move lower from here.
- Dry powder figures provide some insight into just how little capital is available from sponsors in oil and gas. This does present an interesting contrarian opportunity as valuations remain low for oil/gas assets (3-5x EV/EBITDA for onshore U.S.), especially when you see where multiples are for private equity (11-13x EV/EBITDA). High oil prices are contributing to record profits among the E&P companies, but investors' apathy to the sector has not resulted in a willingness to pay up for cash flows.
- The problem of liquidity and the transition away from hydrocarbons remain existential threats to the private oil/gas sector. We think demand for oil and gas will be stable for the next decade, but the picture becomes cloudy beyond that time horizon. EV sales have underwhelmed here in the U.S. but are dominant in China and parts of Europe. The question of who will buy these oil/gas assets in 7-10 years' time remains a chief concern. There is also the issue of new regulations harming the value of oil/gas investments, though we think in the current environment, U.S. regulations are unlikely to result in material impairment.

FUNDRAISING IN OIL/GAS



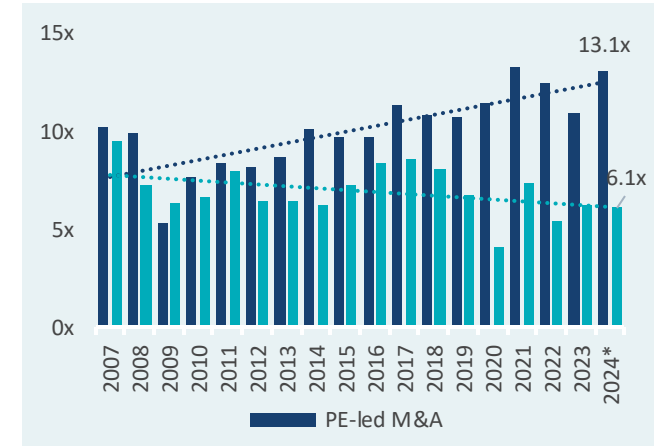
Source: Pitchbook, as of 9/30/2023

DRY POWDER IN THE OIL/GAS SECTOR



Source: Pitchbook, as of 9/30/2023

EV/EBITDA MULTIPLES (PE VS ENERGY M&A)

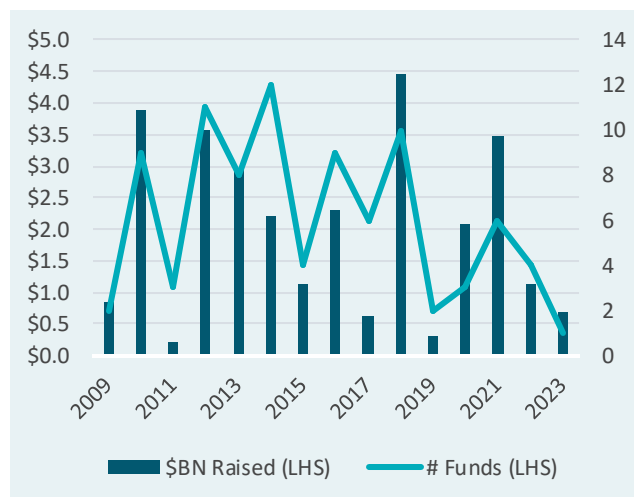


Source: Pitchbook, as of 3/31/2024

Metals and mining

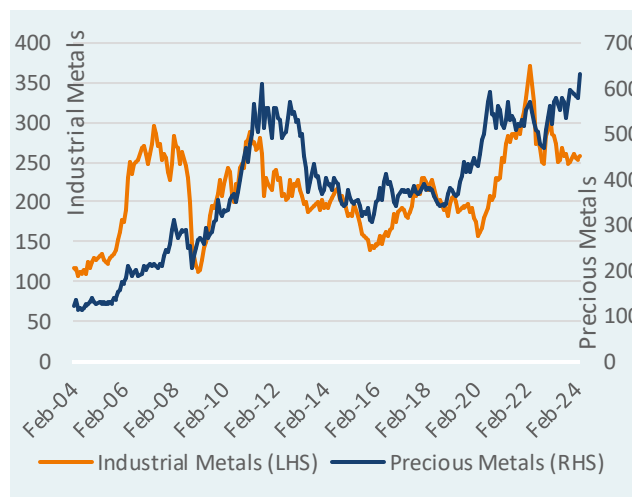
- Fundraising in the private equity mining segment continued its downward trend in 2023. Raising equity capital in metals and mining has been a challenge since the global financial crisis, but that has worsened in the last seven years. Despite a strong demand outlook and an increasingly positive narrative, capital remained constrained in the segment from both fundraising and capital markets (debt/financing).
- Mining exploration budgets have continued their upswing since the low of 2016, and as anticipated, 2023 was lower than the recent high of 2022. The consensus is that more spending will be needed to meet future demand for metals/minerals important to clean energy. We have already seen exploration spending double over the last decade for metals critical to batteries (nickel, lithium, and cobalt).
- Prices for industrial metals have settled lower than the all-time highs of 2022, although historically speaking, prices remain high. Precious metals, on the other hand, have continued to rally over the last couple of years as various financial or geopolitical concerns fueled the buying of safe-haven assets.
- Like others, we see tailwinds in the industrial/base metals that supply critical minerals to decarbonization investments. That being said, the sector is often defined by cyclical over- and under-supply from pricing dynamics and investing at higher relative commodity prices offers a less-attractive entry.

FUNDRAISING IN MINING



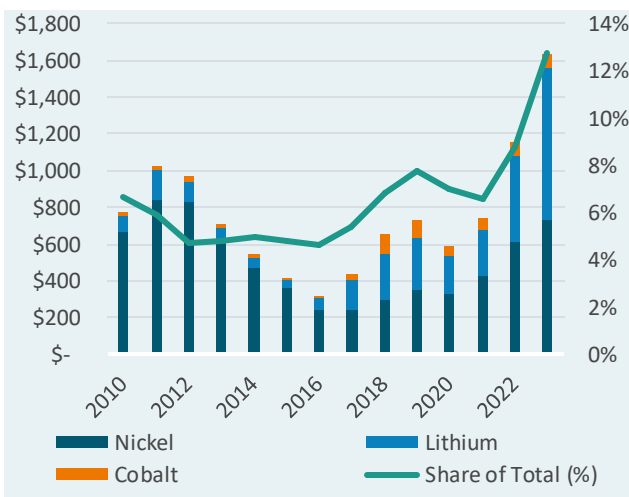
Source: Pitchbook, as of 12/31/2023

METAL PRICES



Source: Bloomberg, as of 3/31/2024

BATTERY METAL EXPLORATION (\$B)

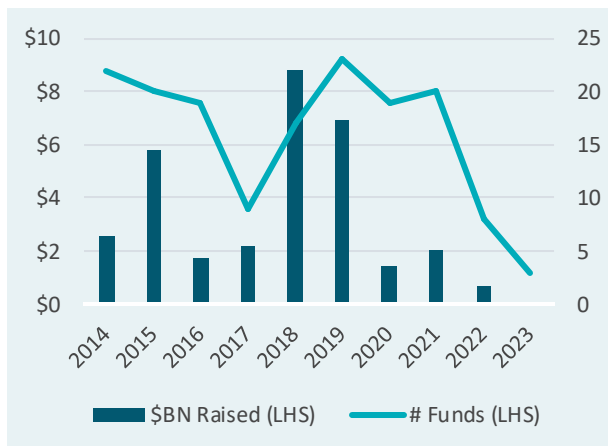


Source: S&P 500, as of 12/31/2024

Agriculture

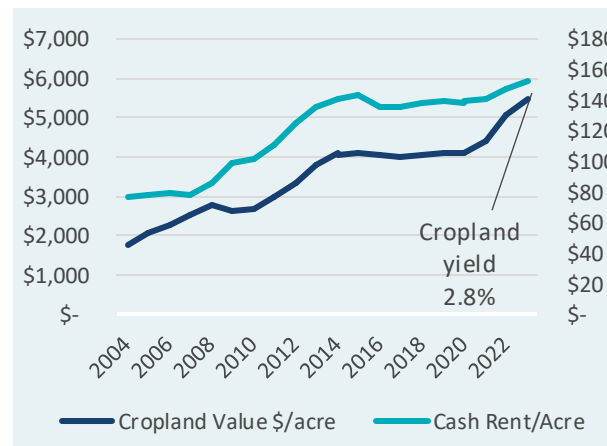
- Cropland values continued to rise for the fourth year in a row, ending the year at \$5,460/acre, according to the USDA. Yields dropped to 2.8%, the lowest level in at least the last two decades. Achieving an attractive yield (income) from farmland has been a challenge for much of the asset class' history as appreciation drove returns. Especially with interest rates at their current levels, we struggle with current farmland values given the income levels they generate.
- We believe cash flows will continue to fall as farmers' margins tighten due to higher costs and falling crop prices. Appreciation growth will likely come down from recent highs, but farmland values tend to be sticky.
- Agriculture's long-term investment thesis is unchanged: a growing population and food needs, combined with a highly fragmented and constrained market. Roughly 3% of farmland in the U.S. is owned by investment firms, and 93% is owned and operated by legacy families, some of which are aging out. What investors can earn from the asset class, especially given the risks, has not matched the opportunity.
- We maintain that the asset class is not overly compelling relative to other real assets. For investors that are eager to invest in agriculture, we recommend diversifying across crop types and looking for strategies that can invest in post-farmgate assets as the best way to mitigate idiosyncratic events and capture a higher return.

FUNDRAISING IN AGRICULTURE



Source: Pitchbook, as of 12/31/2023

NATIONAL CROPLAND VALUES VS RENTS



Source: USDA, as of 12/31/2023

BLOOMBERG AGRICULTURE PRICES



Source: Bloomberg, as of 3/31/2024

Appendix

Detailed returns by asset class

Pooled Returns by asset class	1 Year	3 Year	5 Year	10 Year
NCREIF ODCE	-12.0%	4.9%	4.3%	7.3%
Refinitiv Real Estate – Value-Add	-5.3%	7.8%	6.8%	10.0%
Pitchbook Real Estate - Value-Add	-8.4%	4.6%	4.4%	8.2%
Refinitiv Global Infrastructure	9.5%	11.5%	10.3%	10.5%
Refinitiv Global Natural Resources	7.5%	22.2%	4.5%	3.7%
Pitchbook Oil/Gas	3.7%	26.0%	4.7%	4.1%
Pitchbook Mining	8.2%	7.0%	3.4%	2.8%
NCREIF Timberland	9.5%	10.5%	6.6%	5.8%
NCREIF Farmland	5.0%	7.5%	6.0%	7.3%
Public Index (as of 12/31/23)				
Russell 3000	26.0%	8.5%	15.2%	11.5%
MSCI ACWI	22.2%	5.7%	11.7%	7.9%
S&P Global Infrastructure	6.8%	6.0%	7.4%	5.7%
S&P Global Natural Resources	4.1%	12.9%	11.2%	5.2%
FTSE NAREIT Composite	11.5%	5.4%	7.1%	7.7%
DJ US Select REIT	14.0%	7.2%	6.1%	7.0%

Source: Refinitiv C/A as of September 30, 2023; Pitchbook as of December 31, 2023; NCREIF as of December 31, 2023

The role of real assets

	Strategy	GDP sensitivity	Inflation sensitivity	Income orientation	Return enhancing	Risk reducing	Liquidity
Privately-traded real assets	Private real estate core	High	Moderate	High	Moderate	Moderate	Moderate
	Private real estate value added	High	Low	Moderate	High	Low	Low
	Private real estate opportunistic	High	Low	Low	High	Low	Low
	Private infrastructure	Moderate	Moderate	High	Moderate	Moderate	Low
	Timber	Low	Low	Low	Moderate	High	Low
	Farmland / agriculture	Low	Moderate	Moderate	High	High	Low
Publicly-traded real assets	TIPS	Low	Moderate	Low	Low	High	High
	Commodity futures	Moderate	High	Low	Low	Moderate	High
	REITs	Moderate	Low	Moderate	High	Low	High
	MLPs	Moderate	Moderate	High	High	Moderate	High
	Listed infrastructure	Moderate	Moderate	Moderate	High	Low	High
	Natural resources equity	Moderate	High	Low	High	Low	High

Note: the summary above was determined using historical averages and correlations on a relative basis within each category. It is important to note that investments within these asset classes are often heterogeneous and may possess different qualities and sensitivities (see Appendix for further details).

Magnitude	Low/None	Moderate	High

Glossary of terms

Adjusted Funds From Operations (AFFO): A measurement which is helpful in analyzing real estate investment trusts (REITs). The AFFO typically equals the trust's funds from operations (FFO) but is adjusted for ongoing capital expenditures which are necessary for upkeep of the REIT's assets.

Backwardation: Also, sometimes called normal backwardation, is the market condition where the price of a commodities forward or futures contract is trading below the expected spot price at maturity.

Capitalization Rates: The rate of return of a real estate investment, which is calculated by dividing the property's net operating income by the property's purchase price.

Core Real Estate: This category of real estate will include a preponderance of stabilized properties. Core real estate should achieve relatively high income returns and exhibit relatively low volatility. Core real estate funds tend to use less leverage.

Consumer Price Index (CPI): A measure of purchasing power and inflation that takes the average prices of a basket of consumer goods and services, such as food, medical care, and transportation, and compares the same basket of goods in terms of prices to the same period in a previous year. Changes in CPI are used to assess price changes associated with the cost of living.

Contango: When the futures price of a commodity is above the expected future spot price. A futures or forward curve is upward sloping when the market is in contango.

Double Promote: A joint venture private equity structure is considered to have a "double promote" if the sponsor of a project is in fact comprised of two separate parties who each have a profit waterfall agreement or cash flow disbursements.

Dry Powder: Investment reserves raised by investment funds to cover future obligations or to purchase assets in the future.

GDP: The total value of all services and goods produced within a country's borders, for a given time period. This calculation includes both private and public consumption, government expenditures, investments, along with total exports net of total imports.

Internal Rate of Return (IRR): The IRR is the discount rate that equates the present value of cash outflows (investment) with the present value of cash inflows (return of capital). IRR is often referred to as a dollar-weighted rate of return that accounts for the timing of cash inflows and outflows.

LIBOR: LIBOR is a benchmark rate that some of the world's largest banks charge each other for short-term loans. It stands for London Interbank Offered Rate and serves as the first step in calculating interest rates on various loans throughout the world.

Master Limited Partnerships (MLPs): A limited partnership structure which is publicly traded on an exchange. MLPs combine the tax benefits of a limited partnership with the liquidity of publicly traded securities. To qualify as an MLP, the entity must generate 90% of its income from the production, processing and transportation of oil, natural gas and coal.

Net Operating Income (NOI): A calculation which is used to analyze real estate investments that generate income. NOI is the property's annual income generated by operations after deducting all expenses incurred from those operations. The growth rate in NOI is a common metric used in determining the health of a property.

OPEC: The Organization of Petroleum Exporting Countries (OPEC) is a group consisting of 12 of the world's major oil-exporting nations. OPEC is a cartel that aims to manage the supply of oil in an effort to influence the price of oil on the world market.

Opportunistic Real Estate: An opportunistic fund is one that includes preponderantly non-core assets. The fund as a whole is expected to derive most of its return from property appreciation which may result in volatile returns. These funds may employ a variety of tools such as development, significant leasing risk and potentially high leverage.

Real Estate Investment Trusts (REITs): A REIT is a company that owns and operates commercial real estate properties. REITs can be publicly traded or privately held. There are two main type of REITs: Equity REITs which generate income from the operation of properties, and Mortgage REITs, which invest in mortgages or mortgage securities.

Glossary of terms (continued)

Timber Investment Management Organizations (TIMOs): A management group that invests in timberland assets for institutional investors. TIMOs will purchase, manage, and sell various timberland properties on behalf of investors.

Treasury Inflation Protected Securities (TIPS): A treasury bond that is adjusted to eliminate the effects of inflation on interest and principal payments, as measured by the Consumer Price Index (CPI). TIPS are issued in terms of five, ten, and twenty years and are auctioned twice per year.

Value-Added Real Estate: A value-added real estate fund often holds a combination of core assets and other assets characterized by less dependable cash flows. These strategies are likely to have moderate lease exposure and employ moderate leverage. Consequentially, these strategies seek significant returns from property appreciation and typically exhibit moderate volatility.

Vacancy Rates: The vacancy rate is calculated as the total number of unoccupied units of a property divided by the total units of the property, at a particular point in time.

Vintage Year: Represents the year the first capital call or portfolio company investment was made.

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