RESEARCH REVIEW

FOURTH QUARTER 2022

INSIDE THIS ISSUE

FEG® investment advisors

Despite a strong rebound in the first two-thirds of the final quarter of 2022, during which most major asset classes and categories enjoyed positive performance, December saw a return to the same weakness that global asset allocators had endured throughout much of the first three quarters of 2022. Cooling inflationary data, moderating interest rates, a declining U.S. dollar (USD), and the potential for an incremental reduction in the pace of Federal Reserve (Fed) tightening all underpinned the rally across the financial markets during the quarter. However, concerns that the elevated inflationary backdrop may prove a persistent headwind weighed on performance in December, supported by evidence that the "stickiness" of the current inflationary regime may remain a concern. Global equity performance was predominantly negative in December. International developed stocks – as measured by the MSCI EAFE Index – materially outperformed U.S. equities for both the quarter and the year. This theme dominated the global equity performance tone of the fourth quarter. Emerging market equities also enjoyed a solid rally in the fourth quarter, outperforming domestic equities. Bond returns were positive in the fourth quarter, as increased interest rates were predominantly at the short end of the yield curve, and credit-sensitive sectors benefited from the risk rally. Performance across real assets was similarly positive for the quarter, although headwinds such as deteriorating global economic fundamentals and rising interest rates weighed on the asset category at the end of the year.

ECONOMIC UPDATE

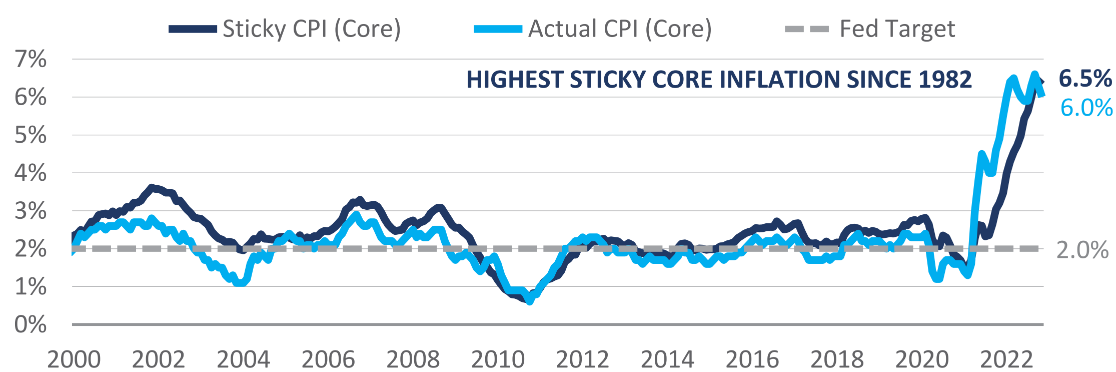
Financial Markets Regain Footing in the Fourth Quarter but Conclude 2022 on a Low Note

Signs emerged in the fourth quarter that the Fed's tightening measures deployed throughout 2022 are beginning to alleviate multi-decade high inflation, which supported the growing narrative that a "pause" in the Fed's tightening campaign may be on the horizon. Indeed, both headline and core measures of inflation moderated in both October and November, as headline consumer prices cooled to a 7.1% annual pace through November—versus a cyclical high of 9.1% in June—and core consumer price inflation declined to a 6.0% annual pace, slightly down from the cyclical high of 6.6% in September.

Key factors supporting the rebound across most major asset classes and categories in October and November were a potential peaking of inflation, which spooled to a 40-year high in 2022, and the related sentiment surrounding an incremental reduction in the pace of Fed tightening, with moderating interest rates and a cooling-off of the USD providing the necessary market conditions for a performance rebound.

While there is some evidence that the current inflationary episode may have run its course, it remains unclear whether the Fed's job is complete. Despite progress in recent months toward restoring price stability, some measures that seek to approximate the "stickiness" of inflation continue to trend higher. Through November, for example, the Federal Reserve Bank of Atlanta's Sticky core CPI data series advanced to a fresh cycle high of 6.5%, despite modest declines in the reported CPI rate since September. Notably, the 6.5% November print was the most elevated reading of this gauge since 1982.

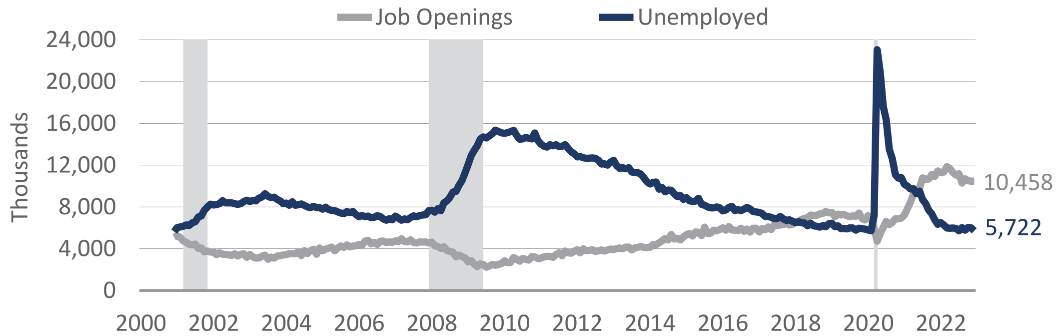
ACTUAL CORE CPI VS. STICKY CORE CPI



Data sources: Atlanta FED, Bloomberg, L.P.; Data as of November 2022

A persistent complicating factor is the surprising resilience of the U.S. labor market, which ended 2022 with an unemployment rate of 3.5%, the lowest rate in more than 50 years. Moreover, the number of job openings, which stood just shy of 10.5 million through November, continues to surpass the availability of labor capital, with less than six million unemployed individuals remaining sidelined through year-end. Consequently, nominal wages have been increasing at an elevated pace but still below the rate of inflation, which adds to inflationary pressures as employers attempt to add to and maintain their labor force. Until this labor market imbalance approaches a state of equilibrium, the Fed may find it challenging to engineer a soft landing, resulting in further financial market volatility and economic hardship for a broad swath of the general populace.

PERCENT OF UNEMPLOYED PERSONS vs. JOB OPENINGS

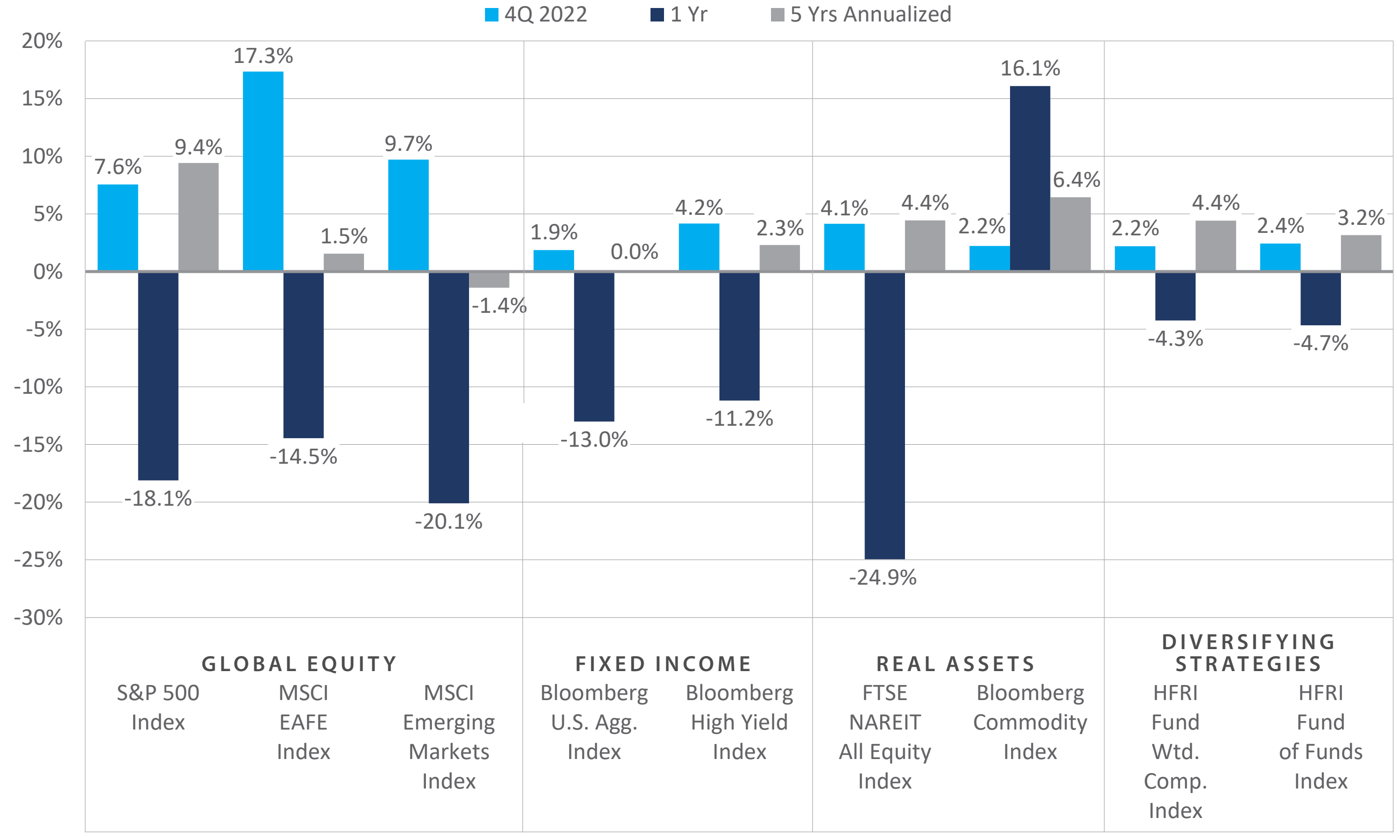


Data sources: BLS, Bloomberg, L.P.; Unemployed data as of December 2022 and job openings data as of November 2022
Note: Shaded areas represent recessionary periods.

To summarize, performance across the financial markets in December was decidedly negative, particularly among the rate-sensitive sectors of the marketplace, which suffered through one of the worst calendar years on record, as inflation angst and monetary tightening measures by the Fed negatively impacted performance. This recent trend may ultimately reverse, however, when the full effects of a broad economic slowdown become too difficult for global investors to ignore.

MARKET SUMMARY

FOURTH QUARTER 2022



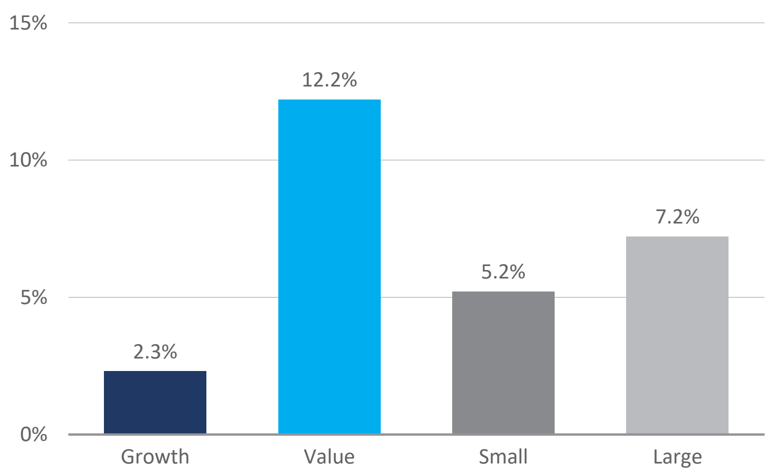
Data sources: Lipper, HedgeFund Research

GLOBAL EQUITY

- U.S. equities finished a volatile year with positive returns in the fourth quarter, yet still provided the worst calendar year performance since 2008. U.S. equities rallied to start the quarter but sold off in December in response to the Fed's steadfast positioning to curb inflation.
- A repricing of assets amid rising interest rates and inflation levels not witnessed in four decades drove the year's declines. Corporate earnings have been steady and have yet to reflect deterioration as economic indicators have weakened, although forward guidance has lowered earnings estimates for 2023.
- Value equity returns outperformed growth equity returns across all market capitalizations for the quarter and substantially for the entire year. Cyclical

VALUE STOCKS RALLIED IN THE FOURTH QUARTER

U.S. Style Returns



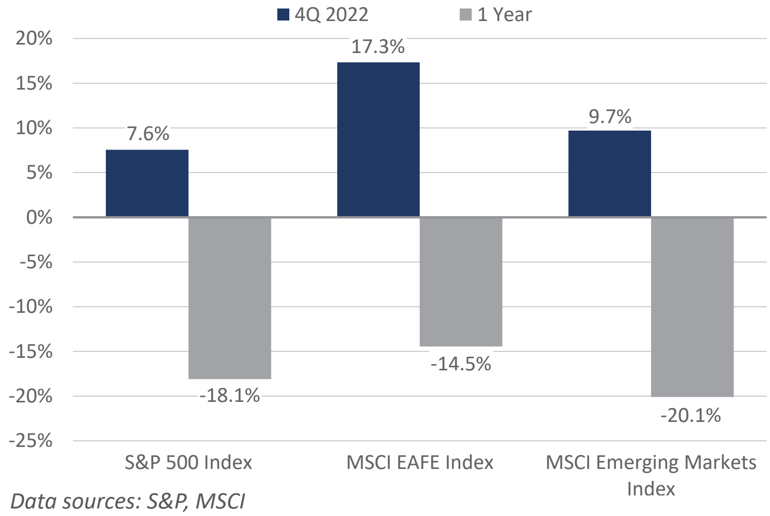
Data source: FTSE Russell

sectors like energy, industrials, materials, and financials led the market's fourth-quarter rally. Communication services and consumer discretionary sectors lagged in the quarter.

- European (ex-UK) equities, followed closely by Pacific (ex-Japan) equities, were the strongest-performing in local currency terms. The U.S. dollar sell-off augmented those returns and aided U.S. investors in all international equity markets. European markets benefited as cold weather subsided, partially alleviating consumers' burden of steep energy prices.
- Cyclical sectors, like energy and consumer discretionary, drove the European equity market in the year's final quarter. U.K. equities were the best-performing region in 2022, declining only 4.8% in U.S. dollar terms, driven by the significant weight of value industries like oil, gas, and pharmaceuticals.
- Japanese equities rallied in the fourth quarter as companies reported another round of solid earnings. Large exporting companies continue to benefit from the yen's weakness. The record level of share buybacks announced this year also helped to boost Japanese equities. In addition, equities and the yen responded favorably to the Bank of Japan's earlier-than-expected decision to widen the 10-year bond yield band.
- Emerging market equities posted positive returns aided by a weakening U.S. dollar. The region struggled throughout the year as China sold off and the Russia-Ukraine War wreaked havoc on the surrounding developing countries. However, Chinese equity returns rebounded in Q4 amid government plans to relax zero COVID policies. Energy exporters in the Middle East underperformed on the back of energy prices declining across the globe.

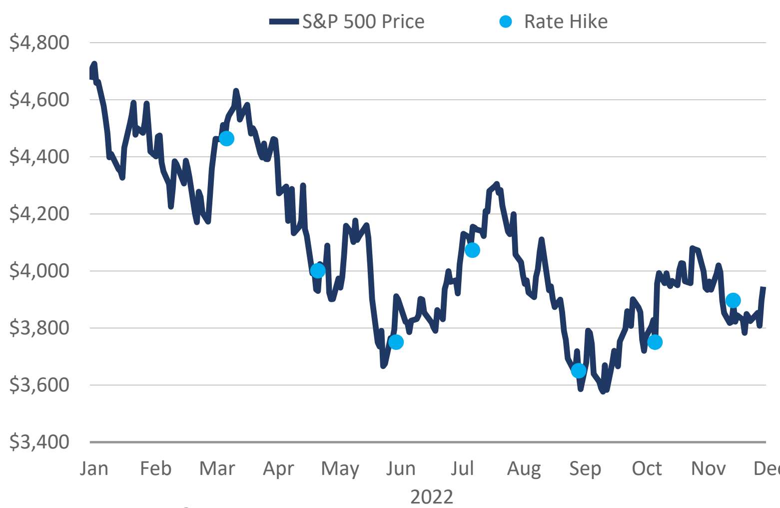
INTERNATIONAL EQUITIES OUTPERFORMED

Equity Indices Performance (Returns in U.S. Dollars)



Data sources: S&P, MSCI

FED TIGHTENING HAS BEEN KEY DRIVER IN THE MARKET'S DECLINE

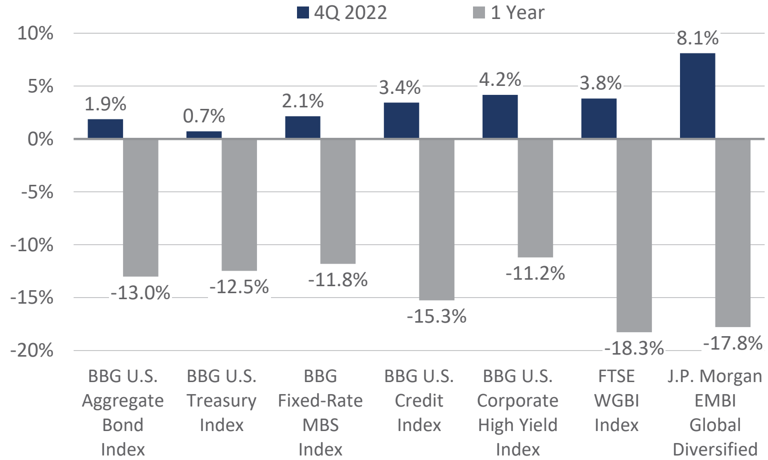


Data source: FactSet

FIXED INCOME

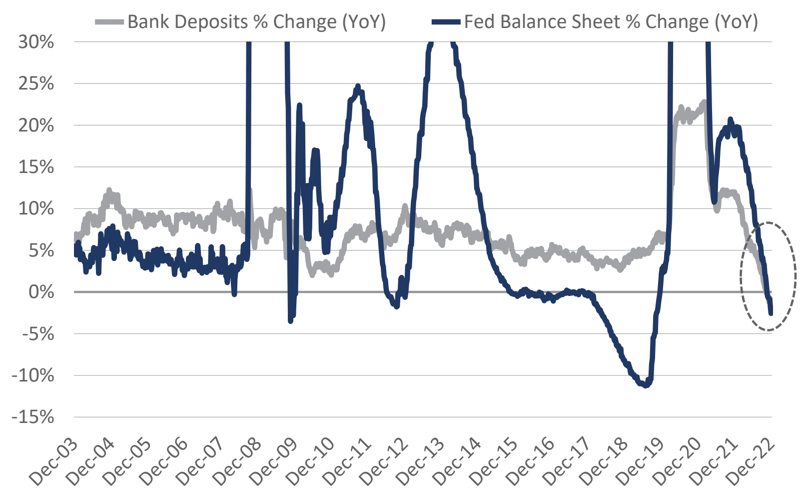
- The year ended with another volatile quarter for rates. Rate volatility persisted across the curve, resulting in a considerable range of 62 bps and 83 bps for the 2-year and 10-year Treasury yields, respectively. Ultimately, the 2-year Treasury yield ended the year at 4.4%, an increase of 19 bps from the end of the last quarter, while the 10-year Treasury rallied as yields declined off October highs but subsequently increased in December to end the year at 3.9%. As of year-end, the yield curve remained inverted across nearly all term structures as market participants digested hawkish Fed commentary and weakening forward economic indicators.
- The Fed kept its promise of prioritizing the battle against inflation, hiking the policy rate twice during the quarter to end the year at a targeted range of 4.25% to 4.5%. Despite the Summary of Economic Projections (SEP) indicating a terminal rate above 5%, cooling CPI prints during the quarter pushed market participants to lower their expectations for the path of interest rates for 2023. The USD simultaneously pulled back during the quarter with Treasury yields. Elsewhere in the SEP, Fed officials upwardly revised their outlook for the unemployment rate and core inflation as their mission to restore price stability continues.
- Credit saw positive quarter-to-date returns in the fourth quarter after consecutive negative quarters of rising rates and widening spreads. The quarter's risk rally benefited investment grade (IG) and high yield (HY) credit sectors as investor appetite for credit resumed. IG and HY option-adjusted spreads (OAS) fell 29 bps and 62 bps, respectively, during the fourth quarter. The Bloomberg U.S. Credit Index and Corporate High Yield Index returned 3.4% and 4.2%, respectively, while the S&P/LSTA Leverage Loan Index returned 2.7% for the quarter. Rounding out a challenging year for credit, high-yield issuance fell 80% versus 2021, with just $91 billion in issuance, the lowest annual tally since 2008.

CREDIT MARKETS GAINED IN THE RISK-ON RALLY
Fixed Income Index Returns



Data sources: Bloomberg, L.P., Lipper

FED'S BALANCE SHEET AND BANK DEPOSITS ARE BEGINNING TO CONTRACT



Data source: Federal Reserve of St. Louis; Data as of December 28, 2022

- Mortgage rates continued their push higher, ending the quarter at 6.4%, a jarring 3.2% higher than at the beginning of the year. Mortgage convexity returned to negative territory after spending October in positive territory for the first time this century. Steeply discounted dollar prices and near-maximum extension expectations have given rise to some of the most attractive convexity profiles within the sector in years. The Bloomberg U.S. MBS (30Y) index posted one of the strongest-performing months in the series' history in November as spreads compressed and interest rate volatility modestly fell.

REAL ASSETS

REAL ESTATE

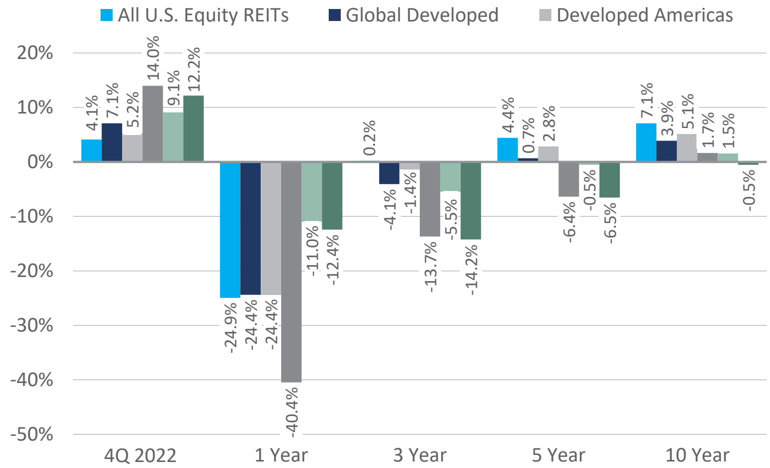
- Although real estate investment trusts (REITs) performance improved in the fourth quarter of 2022, U.S. REITs underperformed the broad equity market, with 2022 being the worst year for REITs since 2008. Underperformance was driven primarily by the rising interest rates, leading to higher borrowing costs and decreasing demand from investors.
- Developed Asia real estate outperformed for the year due to the relaxation of China's zero-COVID policy. Many economists and analysts believe policymakers will roll out more support to stimulate real estate demand in China, resulting in a performance recovery. Furthermore, private and public real estate performance diverged during the year, signaling potential write-downs for private real estate investments in the fourth quarter.
- Nearly all subsectors of U.S. real estate declined in value during December, and all subsectors' performance was negative for 2022. Office REITs underperformed all other property types, driven by a sharp decline in demand due to remote work trends following the pandemic. Conversely, specialty REITs, which include a variety of non-traditional properties such as casinos, movie theaters, and farmland, outperformed. Moreover, the dispersion between the performance of REIT property sectors was significant during 2022.

NATURAL RESOURCES

- The energy markets declined in the fourth quarter and were nearly flat for 2022. However, natural gas (Henry Hub) finished the year with a decline of more than 40% during December due to warmer winter weather, particularly in Europe, which has recently relied on the U.S. to replace its dependence on Russian natural gas. U.S. liquified natural gas (LNG) exports to Europe increased dramatically, with the continent accounting for roughly 70% of all U.S. LNG exports during 2022. This is up from 26% in 2021 before the Russian invasion of Ukraine, according to the U.S. Energy Information

REAL ESTATE'S WORST YEAR SINCE 2008

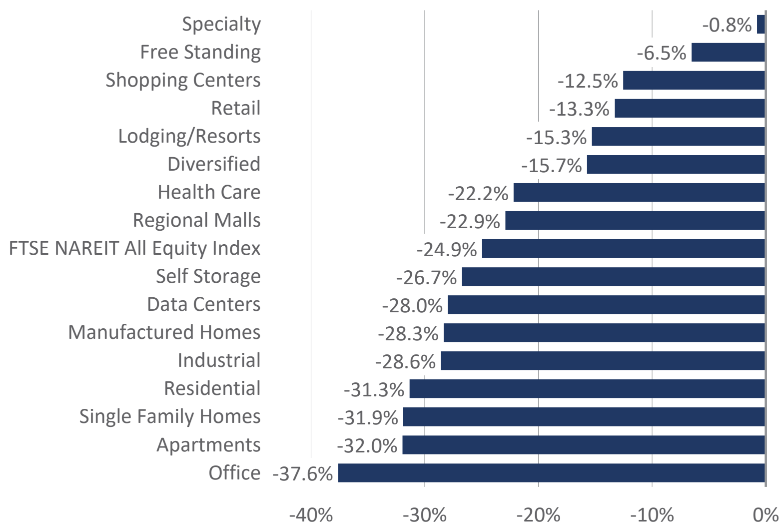
Trailing REIT Performance by Geography



Data source: FactSet

ALL REAL ESTATE SECTORS DECLINED IN 2022

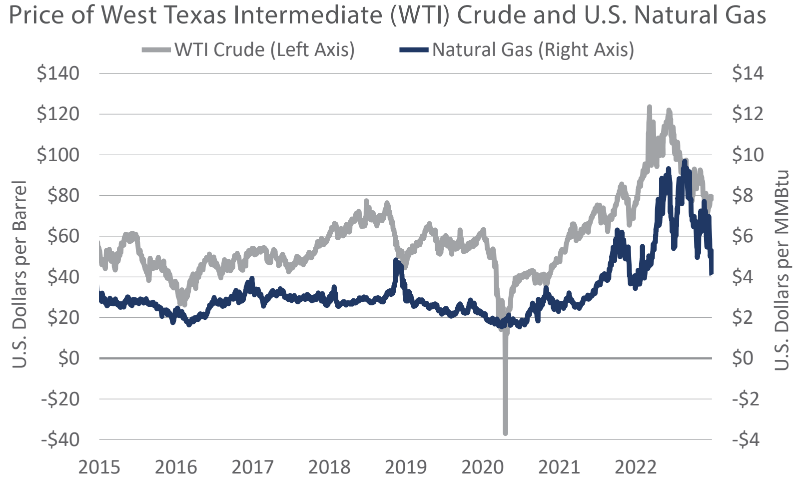
U.S. REIT Trailing Performance by Property Type (Year-to-Date)



Data source: FactSet

ENERGY MARKETS CALM AMID WARM WEATHER

Price of West Texas Intermediate (WTI) Crude and U.S. Natural Gas



Data source: FactSet

Administration (EIA). Furthermore, a rapid recovery in production combined with decreased demand has created a potential oversupply, adding to the deterioration of performance during the month.

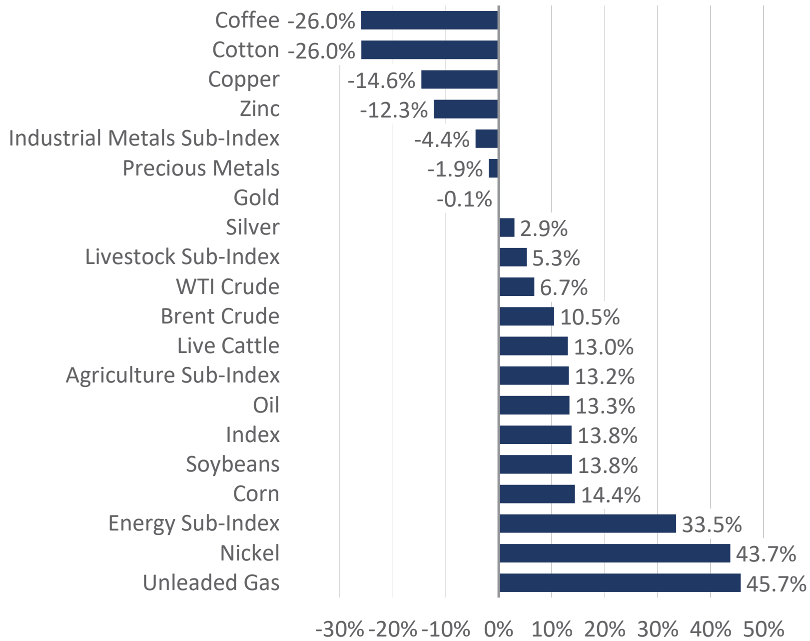
- Industrial metals ended the year in negative territory—with the exclusion of Nickel, a critical component of EV batteries. The underperformance of industrial metals was driven by slowing economic growth, particularly in China, which reduced industrial demand. Agricultural commodities outperformed other sectors, with the Agriculture Sub-Index up 13.2% for the year. However, cotton and coffee significantly underperformed, declining 26% in 2022. Underperformance for cotton was due to weaker demand and consumer resistance to higher prices driven by inflation. Additionally, precious metals—particularly gold—underperformed despite being considered a hedge against inflation.

INFRASTRUCTURE

- Infrastructure ended the quarter modestly positive after a strong performance in November gave way to negative performance in December. As a result, only energy-related infrastructure returned positive performance during 2022 as energy prices and strong balance sheets helped face the headwind of rising rates that pressured infrastructure broadly.
- Non-energy-related infrastructure remained flat for the year on an absolute basis, outperforming the broader equity markets due to the defensive characteristics of the asset class with the inclusion of less economically sensitive sectors such as utilities and midstream.

INDUSTRIAL METALS FELL WITH REDUCED DEMAND

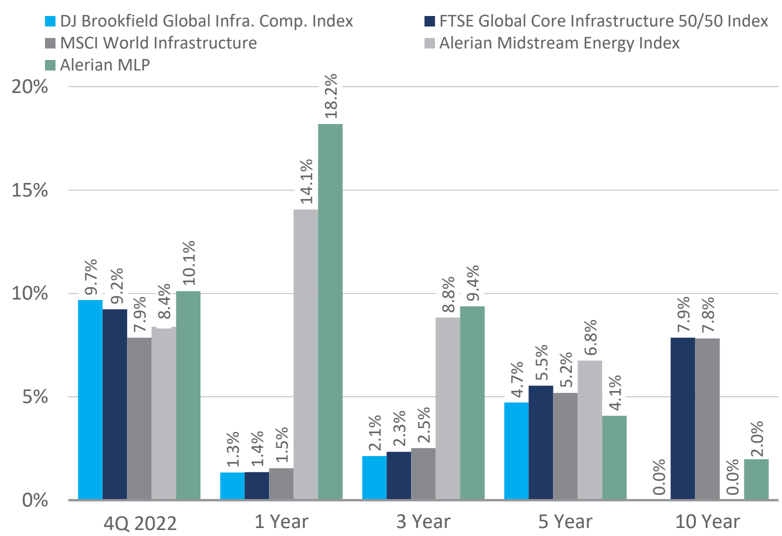
U.S. Commodity Trailing Performance



Data source: FactSet

INFRASTRUCTURE OUTPERFORMED FOR THE YEAR

Listed Infrastructure Trailing Returns

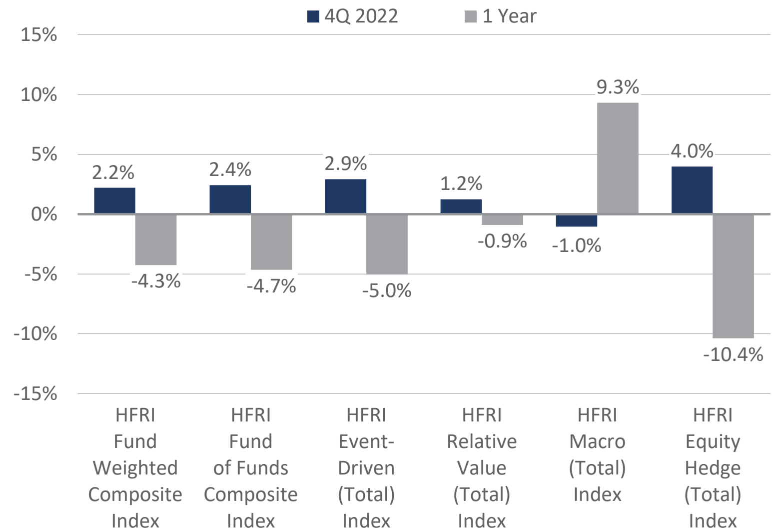


Data source: FactSet

DIVERSIFYING STRATEGIES

- Hedge funds slightly outperformed traditional equity and fixed-income markets, which continued to face headwinds and heightened volatility. The HFRI Fund Weighted Index was up 2.2% in the fourth quarter, the first positive quarter for the index since the first quarter of 2022. Global macro was the only strategy in negative territory over the quarter, following two consecutive quarters being the only strategy in positive territory.
- Hedged equity performed well in the last quarter of 2022 with an increase of 4%, rebounding from losses in previous quarters. Event-driven and relative value strategies also ended the quarter on a solid note, with gains of 2.9% and 1.2%, respectively. Fundamental value and energy/basic materials were the best-performing strategies within hedged equity. Equity market neutral and fundamental growth strategies finished 2022 with solid performance. Quantitative directional had a positive fourth quarter, up 2.3% overall despite a 4.2% decline in December.
- The common themes across hedged equity of de-levering portfolios and remaining bearishly positioned persisted throughout the fourth quarter. Changing themes included an increase in investment in China, decreases in long and increases in short positions in energy, and a sell-off in aerospace and defense. Many strategies also became net buyers of health care and staples.

HEDGE FUNDS WITNESS MORE SUBDUED GAINS
HFRI Indices Performance Returns (U.S. Dollars)



Data source: HedgeFund Research

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Research and Portfolio Management Team as of date of publication.

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All data is as of December 30, 2022 unless otherwise noted.

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