REVIEW OF MARKET PERFORMANCE

FISCAL YEAR 2022





Cross-asset performance was weak in FY 2022, with commodities the one bright spot

GLOBAL ASSET CLASS PERFORMANCE: FY 2022

As of June 30, 2022 • Total Return (%) • US Dollar



Sources: Bloomberg Index Services Limited, Bloomberg L.P., EPRA, Federal Reserve, FTSE Fixed Income LLC, FTSE International Limited, Hedge Fund Research, Inc., Intercontinental Exchange, Inc., J.P. Morgan Securities, Inc., MSCI Inc., National Association of Real Estate Investment Trusts, Standard & Poor's, and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Asset classes represented by: MSCI AC World Index ("Global"), MSCI World Index ("DM"), S&P 500 Index ("US"), MSCI UK Index ("UK"), MSCI Europe ex UK Index ("Europe ex UK"), MSCI Japan Index ("Japan"), MSCI Emerging Markets Index ("EM"), Bloomberg US Treasury Index ("US Treasury"), FTSE World Government Bond Index ("World Gvt"), Bloomberg US High Yield Bond Index ("US IN HY"), Bloomberg US Corporate Investment Grade Bond Index ("US IG Corp"), J.P. Morgan GBI-EM Global Diversified Index ("EM LC"), market cap-weighted Datastream World Energy Index and Datastream World Basic Resources Index blend ("NRE"), FTSE[®] EPRA/NAREIT Global Real Estate Index ("Global Real"), Bloomberg US Treasury The Weighted US Dollar Index ("Cmdty"), LBMA Gold Price ("Gold"), Hedge Fund Research Fund Weighted Composite Index ("Hedge Funds"), and Nominal Trade Weighted US Dollar Index: Broad ("USD"). Total return data for all MSCI indexes are net of dividend taxes. Hedge Fund Research data are preliminary for the preceding five months. Gold performance is based on spot price returns.

FY 2022 was a challenging one for public market investments. Rising levels of inflation across most developed and emerging markets saw central banks become more aggressive in their monetary tightening plans. This in turn saw correlations between bonds and equities become positive; bonds declined as a direct result of higher inflation and tighter policy, while equities weakened in response to the higher cost of capital. Tight supply and solid demand saw commodities and their associated equities become the year's stand out performers, with food and energy prices buttressed by the war in Ukraine. The dollar rallied against most currencies due to the Fed's tightening stance, in addition to some flight-tosafety flows.

Global equity markets reversed course in FY 2022

GLOBAL EQUITY PERFORMANCE: FY 2022 VS FY 2021

Total Return (%) • US Dollar



Global equities reversed course this fiscal year, posting negative returns across the board. Inflation fears, followed more recently by recession fears, drove the negative sentiment in markets. Inflation concerns became markedly more pronounced once the war in Ukraine began in February 2022. The impact from the war was felt hardest by Europe ex UK and emerging markets. Commensurately, those two regions also posted the worst returns. The UK enjoyed the best performance given the positive contribution from the energy sector, and relatively lower IT exposure.

Sources: MSCI Inc., Standard & Poor's, and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties. Notes: Asset classes represented by the following: MSCI All Country World Index ("Global"), MSCI World Index ("Developed Markets"), MSCI EAFE Index ("Dev Mkts ex US"), S&P 500 Index ("US"), MSCI UK Index ("UK"), MSCI Europe ex UK Index ("Europe ex UK"), MSCI Japan Index ("Japan"), and MSCI Emerging Markets Index ("Emerging Markets"). Total return data for all MSCI indexes are net of dividend taxes.

Performance swung from positive to negative extremes of historical ranges

AVERAGE ANNUAL COMPOUND RETURN RANGE FOR VARIOUS TIME PERIODS

Periods Ended June 30, 2022 • Total Return (%) • US Dollar



As inflation fears and ensuing central banks' responses to curb runaway inflation unfolded, market returns swung from extremely strong returns last year to the bottom-end of historical ranges this year. The US and developed markets returns of -10% and -14%, respectively, are a far cry from the +40%returns seen in FY 2021. When observing data starting in the 1970s, oneyear returns have only been worse six times and five times in the US and developed markets. respectively. Emerging markets have only had four other instances of poorer returns since the 1990s and are at the bottom-end of historical ranges across the one-, three-, five-, and ten-year ranges. US Treasuries (-8%), posted the worst returns experienced since the mid-1970s.

Sources: Bloomberg Index Services Limited, Global Financial Data, Inc., MSCI Inc., Standard & Poor's, and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: Ranges reflect the 5th and 95th percentile of fiscal year returns. Asset classes are represented by the following indexes: S&P 500 Index ("US Equities"), MSCI World Index ("Developed Markets Equities"), Bloomberg US Treasury Index ("US Treasury"), and MSCI Emerging Markets Index ("Emerging Markets Equities"). Total returns for all MSCI indexes are net of dividend taxes. Total returns for the MSCI Emerging Markets Index are gross of dividend taxes prior to fiscal year 2002. The first full fiscal year periods are 1901 for S&P 500, 1971 for MSCI World, 1974 for US Treasury, and 1989 for MSCI Emerging Markets. Data prior to 1969 for US Equities are from Global Financial Data, Inc.





The war in Ukraine disrupted the supply/demand fundamentals for oil and natural gas, resulting in energy being the bestperforming sector in FY 2022. As a result, energy played an important role in positively contributing to returns in regions with high energy exposure (i.e., the UK). Overall, given the uncertainty and expectations of higher interest rates, the market tilted more toward value and defensive sectors, as can be seen in the relative outperformance in consumer staples, energy, healthcare, and utilities. This rotation was funded by selling sectors that did well last year, notably the IT and consumer discretionary sectors.

Sources: FactSet Research Systems and MSCI Inc. MSCI data provided "as is" without any express or implied warranties. Note: Top chart shows each sector's contribution as a percentage of the full index return, with average sector weights during the year shown in parentheses.



Markets ditched growth and momentum for more defensive strategies

small-size factors were the largest detractors from performance this year. After years of being market darlings, growth stocks saw aggressive selling in FY 2022. Fear of higher interest rates and elevated valuations made these stocks easy targets for liquidation. Instead, the market favored a more defensive stance in FY 2022. In developed markets, high-dividend vielders, minimum volatility, and value stocks enjoyed the best performance. A similar tone was set in emerging markets, where minimum volatility stocks, equalweighted strategies, and value stocks were the best performers.

Sources: MSCI Inc. and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties. Notes: Factors are based on the MSCI World Index and MSCI Emerging Markets Index. Total return data for all MSCI indexes are net of dividend taxes.



Forward P/Es compressed in FY 2022, weighing on total returns

FY 2022 saw a marked change in contributions to returns. In the US and Europe, positive earnings per share (EPS) revisions were only modest when compared to last year. Japan saw impressive positive revisions on a relative basis, since inflation and monetary tightening played a less important role. Emerging markets, on the other hand, were more negatively impacted by inflation and experienced negative EPS revisions. Given the uncertainty in the macro backdrop, it was not surprising to see forward price earnings (P/Es) compress and serve as the largest drag on total returns. This contrasts with last year when forward P/Es contributed very little to the total return.

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Sources: I/B/E/S, MSCI Inc., and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties. Notes: Top chart uses weekly data. EPS growth numbers are based on I/B/E/S estimates. Data reflect EPS growth estimates for calendar year 2022, except for Japan, which reflect EPS growth estimates for fiscal year 2023 (March 2022–March 2023). EPS growth estimates are in local currency terms, except for Europe and EM, which are in USD terms. Bottom chart shows EPS growth as the percent change in aggregate 12-month forward earnings, multiple expansion as the percent change in 12-month forward price-earnings ratio, and dividend income as the compound difference between the 12-month total return and the 12-month price return. All three components of return geometrically compound to total return.



US equity market valuations remained historically elevated

Alongside compression in forward P/Es, cyclically adjusted price-to-cash earnings (CAPCE) in all regions compressed as well. Unlike last year, all regions now have CAPCEs that fall at or below the 90th percentile. Although the US experienced the largest drop in CAPCEs, the region's valuation remains elevated when compared to the rest of the world. The UK continues to have the lowest valuation relative to its historic range, in part attributed to having higher exposure to value stocks. Besides the UK, emerging markets are the only bloc where valuations are below the median. This region has particularly struggled with rapid increases in inflation.

Sources: MSCI Inc. and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: The cyclically adjusted price-to-cash earnings (CAPCE) ratio is calculated by dividing the inflation-adjusted index price by trailing ten-year average inflation-adjusted cash earnings. Cash earnings are defined as net income from continuing operations plus depreciation and amortization expense. MSCI does not publish cash earnings for banks and insurance companies and therefore excludes these two industry groups from index-level cash earnings. EM is cyclically adjusted by trailing five-year data.



Inflation returned with a vengeance, driving policy shifts and roiling markets

Sources: National Sources and Thomson Reuters Datastream.

Note: Ten-year average inflation reflects the annual fiscal year (i.e., periods ending June 30) headline inflation from 2012 to 2021.

The rise in inflation across many developed and emerging markets was the defining development for markets in FY 2022. Several factors have coalesced to drive inflation higher. Energy prices were supported by tight supply, including as a result of the war in Ukraine. Goods prices rose due to stressed supply chains, surging commodity prices, and a tightening labor market. Meanwhile, demand was buoyed by accommodative fiscal and monetary policy, and savings accumulated by consumers during COVID-19 lockdowns. GDP growth naturally slowed from the elevated levels witnessed early in the recovery from COVID-19, leaving most below their pre-COVID trends. US GDP declined in first quarter 2022 due to a soft export market, though domestic demand remained strong.

Fixed income performance was negative in the face of rising rates and inflation

GLOBAL BOND PERFORMANCE: FY 2022 VS FY 2021

Total Return (%) • US Dollar



Every major category of bonds delivered negative returns in FY 2022, deeply so in some cases. Duration, or interest rate sensitivity, was the major driver of this performance. Sovereign bond yields rose as central banks indicated increasingly aggressive tightening plans to tackle rising inflation. Credit spreads also widened as bondholders responded both to the nascent economic slowdown, as well as to the rising cost of capital faced by corporations. The additional yield available in developed markets attracted capital away from emerging markets, which were also battling elevated inflation levels. The appreciating US dollar was also a headwind for emerging markets, while it also meaningfully detracted from returns for unhedged USD investors.

Sources: Bloomberg Index Services Limited, FTSE Fixed Income LLC, J.P. Morgan Securities, Inc., and Thomson Reuters Datastream.

Notes: Asset classes represented by Bloomberg US Aggregate Bond Index ("US Agg"), Bloomberg US Treasury Index ("US Treasury"), Bloomberg US TIPS Index ("US TIPS"), Bloomberg US Corporate Investment Grade Bond Index ("US IG Corp"), Bloomberg US High Yield Bond Index ("US HY"), Bloomberg Global Aggregate Bond Index ("Dev Mkts Agg"), FTSE World Government Bond Index ("Dev Mkts Govt"), Bloomberg Global Inflation Linked Index ("Global ILBs"), Bloomberg Global Aggregate Corporate Bond Index ("Dev Mkts IG Corp"), Bloomberg Global High Yield Bond Index ("Dev Mkts HY"), J.P. Morgan Government Bond Index - Emerging Markets Global Diversified Index ("EM Local Currency"), and J.P. Morgan Emerging Markets Bond Index - Global Diversified Index ("EM Hard Currency").

Yield curves flattened as rate hikes were delivered and economic growth slowed

CHANGE IN YIELD VS JUNE 2021 FOR VARIOUS GOVERNMENT BOND MATURITIES

As of June 30, 2022 • Basis Points (bps)



10-YR/2-YR US TREASURY YIELD SPREAD



January 31, 1964 – June 30, 2022 • Basis Points (bps)

Government bond yields rose as markets priced in an ever-greater number of interest rate hikes by central banks that are attempting to tackle surging inflation. During FY 2022, the Fed raised rates by 150 bps, while the Bank of England raised rates by 115 bps. As is typical during hiking cycles, the yield curves of these countries flattened as longer-dated bonds must also reflect future economic and monetary cycles beyond just the current one. Indeed, the ten-year/twoyear US Treasury yield spread briefly inverted in early April and stood close to inversion at the end of the period. An inversion is often interpreted as a recessionary signal, with recessions having followed many prior inversions. Japan stood out for its commitment to maintaining an accommodative stance.

Sources: Federal Reserve, Global Financial Data, Inc., National Bureau of Economic Research (NBER), and Thomson Reuters Datastream. Note: Shaded bars on the bottom chart reflect periods of NBER-defined US recessions.



Monetary tightening was a global phenomenon with further tightening expected

Sources: Bank of International Settlements, Bloomberg L.P., National Sources, and Thomson Reuters Datastream.

Notes: Policy rate data are as of June 30, 2022. Policy rate data are estimated after June 30, 2022, and based on market implied rates on June 30, 2022. Federal Reserve data based on the effective federal funds rate. Net cutting represents the number of central banks cutting policy rates minus the number increasing policy rates over a trailing sixmonth period. Central bank data are based on 32 of the 38 central banks included in the Bank of International Settlements database; the central banks of Argentina, China, Croatia, Denmark, Iceland, and Turkey are excluded due to data availability.

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Japan and China bucked the trend of removing fiscal accommodation

Source: IMF Fiscal Monitor April 2022. Notes: Cyclically adjusted primary budget balance is defined as the cyclically adjusted balance plus net interest payable/paid (interest expense minus interest revenue). Data are based on the IMF's April 2022 Fiscal Monitor publication.

During the COVID-19 crisis, the primary economic challenge was a lack of demand. With interest rates already quite subdued, monetary policy was limited in terms of its ability to alleviate the problem. Therefore, fiscal policy stepped into the breach in a major way, with budget deficits ballooning out. Maintaining deficits that large was not a sustainable option, given the level of debt-to-GDP ratios in many nations. As a result, fiscal support has already started to retrench, and the International Money Fund projects that it will continue to do so. Still. the withdrawal of accommodation is not projected to be as swift as occurred after the GFC. Japan and China are also bucking the tightening trend in 2022 to meet domestic economic challenges.

Yields on corporate credit rose due both to rising rates and widening credit spreads

OPTION-ADJUSTED SPREADS ON US INVESTMENT-GRADE AND HIGH-YIELD CORPORATE BONDS December 31, 2019 - June 30, 2022 • Percent (%)

US Investment-Grade Bonds



As markets priced in an increasingly steep hiking cycle by the Fed during FY 2022, all high-quality bonds came under pressure. This interest-rate sensitivity, or duration, was the primary driver of the -14.2% return delivered by investmentgrade credit during the period. However, widening spreads, which rose by 0.75%, also contributed. At 4.7%, the all-in yield on the asset class now stands above its COVID-19 peak, albeit with a very different composition. Roles were reversed for high yield, which has a lower duration. Increasing Treasury yields still contributed meaningfully to the -12.8% return but took second place to spread widening. High-yield spreads rose by more than 3 ppts as the market priced in some slowing of the economy and a higher cost of capital.

* US Treasury yields are calculated by subtracting the IG and HY OAS from the IG and HY bond yields.

Sources: Bloomberg Index Services Limited and Thomson Reuters Datastream.

Notes: Data for US investment-grade (IG) bonds are represented by the Bloomberg US Corporate Investment Grade Bond Index, and data for US high-yield (HY) bonds are represented by the Bloomberg US High Yield Bond Index. Data are daily.



Real assets performed strongly as demand rebounded and inflation rose

Sources: Alerian, Bloomberg Index Services Limited, Bloomberg L.P., EPRA, FTSE International Limited, Intercontinental Exchange, Inc., MSCI Inc., National Association of Real Estate Investment Trusts, OECD, and Thomson Reuters Datastream. MSCI data provided "as is" without any express or implied warranties.

Notes: All returns are total returns, except those for gold, which are based on spot price returns. Asset classes represented by the following: Bloomberg Commodity TR Index ("Cmdty"), market cap-weighted Datastream World Energy Index and Datastream World Basic Resources Index blend ("NRE"), Alerian MLP Total Return Index ("MLPs"), LBMA Gold Price ("Gold"), MSCI World Infrastructure Index ("Infra"), Bloomberg US TIPS Index ("US TIPS"), FTSE® NAREIT All Equity REITs Index ("US REITs"), and FTSE® EPRA/NAREIT Developed Real Estate Index ("Dev REITs"). Total return data for all MSCI indexes are net of dividend taxes. Data for Euro Area inflation-linked swap rates are weekly and linked to the Harmonised Indices of Consumer Prices – All Items excluding Tobacco. G7 inflation rate and G7 breakeven inflation rate are calculated using country-level data weighted by 2021 nominal GDP.

Energy prices increased again in FY 2022; initially as a response to increasing demand as economies continued to reopen, but more recently prices rose due to supply constraints because of the war in Ukraine. This had a positive impact on the commodities complex and NREs. USbased MLPs are positive again this year, but benefited less than last year, as the strength in natural gas is primarily a European phenomenon. REITs, being sensitive to rising yields, have suffered in FY 2022 as central banks hike rates and fears of an economic slowdown take center stage. Inflation continued its sharp ascent in FY 2022, putting upward pressure on market-based inflation expectations. This was particularly true of expectations for one year ahead, though longer horizon expectations remained more moderate.

Most commodity prices surged in FY 2022

SELECT COMMODITY SPOT PERFORMANCE: FY 2022

As of June 30, 2022 • Percent (%) • US Dollar



Sanctions against Russian oil, as a result of the war in Ukraine, caused a supply shock in energy commodities, resulting in meaningful increases in energy prices. The oil market was already running strong because of increasing demand, exacerbated by underfunded capital programs, and supply curtailment by OPEC. Similarly, Russia and Ukraine are important production hubs for food and fertilizer, thus supply shocks led to increases in prices of agricultural commodities. This has stressed economies around the world, particularly emerging markets and Europe. Weakness in metals was a result of fears of economic slowdown curtailing future industrial demand.

Source: Bloomberg L.P. Note: Spot returns reflect changes in near-month futures contracts, as reported by Bloomberg L.P.



Sources: J.P. Morgan Securities, Inc. and Thomson Reuters Datastream. Note: Data are daily.



The small positive performance of gold was at odds with the rise in real yields

2013 2014 2015 2016 2017 2018 2019 2020 2021 Gold Bullion Price (LHS) -10-Yr US Real Yields (RHS) DLD HOLDINGS BY GOLD-BACKED ETFS May 31, 2022 • Tonnes 2013 2014 2015 2016 2017 2018 2019 2020 2021

Historically, gold trades in line with long-dated real yields, particularly those of the US. This relationship partially held up as we moved through FY 2022 but began to break down in the final quarter of the period. Gold's 2.3% return over the full period was a significant outperformance of its historical real yield relationship, as US tenyear real yields rose by more than 1.5 ppts. ETF data show an increase in gold holdings in recent months, suggesting there was an uptick in desire to hold gold for purely safehaven purposes. This is consistent with a rise in economic and geopolitical uncertainty, most notably with the continuation of the war in Ukraine.

2,400

2,200

2,000

1,800

1,600 1,400 1,200 1,000

2012

Sources: Federal Reserve, Intercontinental Exchange, Inc., Thomson Reuters Datastream, and World Gold Council. Notes: Real yields reflect the US ten-year TIPS yield. Top chart uses weekly data.

Bitcoin suffered a typically steep drawdown as policy tightening stung cryptocurrencies



The return of inflation saw central banks begin to tighten policy during FY 2022 in an attempt to tame it, with meaningful further tightening also priced in for the following year. This delivered and planned tightening impacted the valuations of all investments; however, it was those at the highest end of the risk spectrum that bore the most pain, none less than bitcoin. Bitcoin declined by 43% during the period and finished FY 2022 over 70% below its November 2021 peak. This represented bitcoin's fifth decline of more than 70% in the past decade. The experience of bitcoin was not atypical for the sector, with many cryptocurrencies experiencing steep drawdowns.

Source: Thomson Reuters Datastream. Note: Data are daily.





ALL PROPERTY CAP RATES

Second Quarter 1983 – Second Quarter 2022 • Percent (%)



Property price appreciation accelerated meaningfully in the past year. Industrials continued to be the stand-out category, rising by 48% in the trailing one-year period. Indeed, industrials have the strongest returns over all the horizons examined. The sector continued to profit from secular trends that have particularly benefited subsectors such as distribution facilities, telecom towers, and data centers. Apartments also performed strongly on a one-year horizon, gaining support from high affordability in the residential sector for much of the period, in addition to somewhat limited demand. Retail turned a corner of sorts with positive growth delivered each guarter since second quarter 2021.

Notes: AACR represents total returns. Cap-rate data represent a four-quarter moving average. All data are quarterly.

Source: National Council of Real Estate Investment Fiduciaries.

Private markets extended their outperformance against public markets with elevated returns

PERFORMANCE OF SELECT CAMBRIDGE ASSOCIATES PRIVATE INVESTMENT INDEXES VS PUBLIC EQUIVALENTS As of First Quarter 2022 • Percent (%)



Private markets posted strong returns over the latest trailing one-year period, returns that were mostly above the average posted over longer horizons. The latest trailing one-year period still captures much of the strong expansion that followed the trough of the pandemic. The strong one-year returns also meaningfully extended the outperformance of private markets over public markets on both a five- and ten-year horizon. Real estate was the one area where private markets had not outperformed public ones over every horizon presented, though they nonetheless outperformed over one-, five-, and ten-year horizons.

Sources: Cambridge Associates LLC, Frank Russell Company, FTSE International Limited, National Association of Real Estate Investment Trusts, and Thomson Reuters Datastream.

Notes: Private index returns are pooled horizon IRRs, net of fees, expenses, and carried interest. The CA Modified Public Market Equivalent (mPME) replicates private investment performance under public market conditions. The public index's shares are purchased and sold according to the private fund cash flow schedule, with distributions calculated in the same proportion as the private fund, and mPME net asset value is a function of mPME cash flows and public index returns.

Macro strategies delivered in a mixed year for hedge fund performance

HEDGE FUND PERFORMANCE: FY 2022

Total Return (%) • US Dollar



Preliminary data from Hedge Fund Research, Inc., shows a mixed performance picture across strategies in FY 2022, with negative returns for composite indexes. The weak performance of equity markets resulted in drawdowns for those categories that tended toward having net long equity exposure. Market neutral equity funds managed to eke out a small positive return. However, it was macro strategies that performed best. The shifting macro regime, driven by high inflation, provided a fertile opportunity set for discretionary macro managers who take views across asset classes. Likewise, the strong price trends seen particularly in commodities and fixed income drove strong performance in systematic macro strategies.

Source: Hedge Fund Research, Inc. Note: Hedge Fund Research data are preliminary for the preceding five months.



A fresh COVID-19 wave was less impactful, though China continued to implement lockdowns



COVID-19 cases surged to fresh highs in many regions during the middle of FY 2022. Nonetheless. this wave did not prove to be as destructive as prior instances, with hospitalizations and deaths not rising commensurately. The elevated level of vaccinations in the developed world was one reason behind this. Another was that more recent variants have proven less deadly despite being more transmissible. China continued attempts to implement a quasi-zero COVID-19 strategy, with the lower effectiveness of its domestic vaccines as one motivation. As a result, China implemented quarantines in many urban areas in 2022, with its GDP growth expectations consequently downgraded.

Note: Share of people who have received a booster shot is calculated as the total number of boosters administered in the region divided by the region's total population.



Sehr Dsani, Investment Director Thomas O'Mahony, Investment Director Vivian Gan, Senior Investment Associate

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