

Market commentary

U.S. ECONOMICS

- U.S. GDP declined at a quarterly annualized rate of -0.9% in Q2 and marked a second consecutive quarter of negative GDP growth. Two consecutive quarters of negative real GDP growth is often viewed as a simple technical definition of recession. However, the official definition is more broad, and many believe the U.S. is not in recession due to continued strength in certain aspects of the economy such as the labor market. This debate will likely continue as investors watch for a positive Q3 GDP figure and monitor trends in employment.
- The U.S. July jobs report more than doubled expectations as non-farm payrolls rose 528,000 over the month and the unemployment rate fell to 3.5%. While payrolls climbed higher, the labor force participation rate (62.1%) weakened to the lowest level of the year.
- U.S. headline inflation registered +0.0% month-over-month in July as falling gasoline prices offset rising prices in the food and shelter components. Year-over-year headline inflation measured +8.5%, cooler than the expected +8.7% print, and represented a substantial decrease from June's +9.1% print. This surprisingly weak inflation print fueled optimism that inflation may have peaked and could begin falling from elevated levels.

U.S. EQUITIES

- The S&P 500 Index rallied +9.2% in July and reversed June losses as growth equities regained ground alongside falling bond yields.
- More than half of S&P 500 companies had released Q2 earnings by month end, 73% of which reported actual EPS in excess of estimates.
 Through July, all 11 GICS sectors had reported year-over-year revenue growth and six sectors reported year-over-year increases in EPS.

U.S. FIXED INCOME

- The Federal Reserve enacted a second consecutive 75-basis point rate hike – bringing the policy rate into what Fed Chair Powell noted as a neutral range – and reiterated its commitment to bring inflation back in line with the long-term 2% target. Powell noted that the Fed sees a period of growth below potential as necessary to successfully lower inflation.
- As market participants weighed the potential for a recession, investors priced in an increasing likelihood that the Fed would have to pivot its policy stance in 2023 and begin cutting rates. At month end, as implied by Fed Funds Futures, investors priced in a full rate cut by June 2023 and two cuts by year end 2023.
- The Bloomberg U.S. Treasury Index rose +1.6% as expectations for a future pivot in Fed policy helped the Index recoup some losses.
 The Index has declined -19.2% year-to-date.

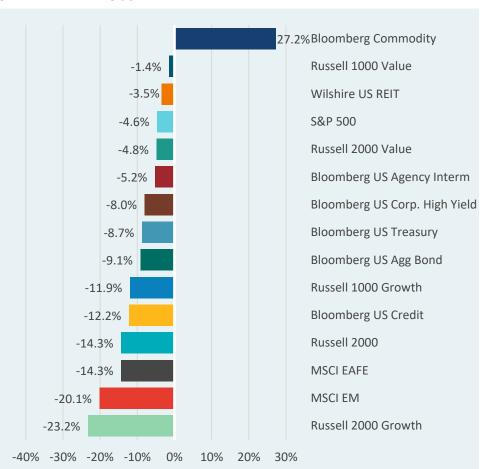
INTERNATIONAL MARKETS

- Chinese GDP grew at a quarterly annualized real rate of +0.4%, missing analyst expectations of +1.0%, as 'zero-covid' lockdowns weighed heavily on economic activity. Shanghai's economy contracted at a quarterly annualized rate of -13.7%.
- The Yen (+1.6%) rallied to end the month after reaching intramonth lows not seen since 1998. The currency has seen weakness year-to-date (-13.8%) as the Bank of Japan remained committed to maintaining a low-rate environment.
- Italian Sovereign Bonds sold off in July as Prime Minister Mario
 Draghi resigned in the wake of a no confidence vote. Draghi the
 former president of the ECB is a proponent of reforms widely
 seen as positive for the periphery eurozone country.

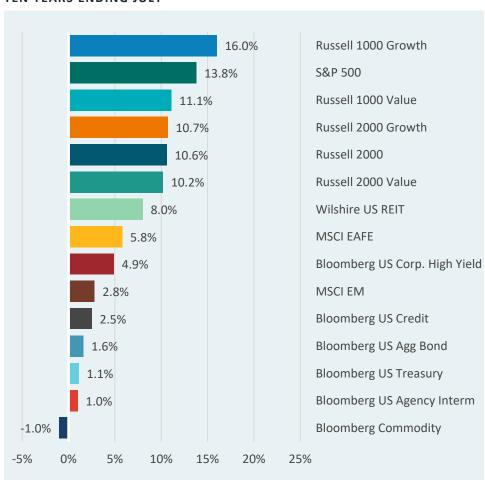


Major asset class returns

ONE YEAR ENDING JULY



TEN YEARS ENDING JULY



*Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.

Source: Morningstar, as of 7/31/22

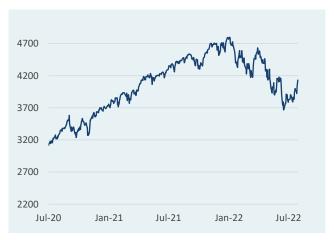
Source: Morningstar, as of 7/31/22



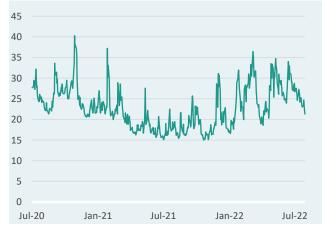
U.S. large cap equities

- The S&P 500 Index rallied +9.2% in July and pared year-to-date declines to -12.6%. Investors likely gained confidence from a slough of corporate earnings data which broadly beat expectations in addition to comments from Fed Chairman Jerome Powell which suggested a "data-dependent" rate hike in September.
- All 11 S&P GICS Sectors ended the month higher with Consumer Discretionary (+18.4%), Information Technology (+13.5%), and Energy (+9.7%) posting the largest gains. Defensive sectors including Health Care (+3.3%) and Consumer Staples (+3.3%) were the worst performers despite multiple recession indicators.
- Congress passed the CHIPS and Science Act late in the month. The bill is intended to support domestic semiconductor manufacturers by providing \$52 billion in subsidies for research and domestic fabrication plant construction. The PHLX Semiconductor Sector Index (SOX) climbed +16.2% over the month.
- The Cboe VIX Index of implied S&P 500 volatility declined from 28.7 to 21.3 to end the month. While volatility has fallen from recent highs, it remains above the five-year average level of 20.1 as uncertainty lingers regarding the path of interest rates, inflation, and economic growth.

S&P 500 PRICE INDEX

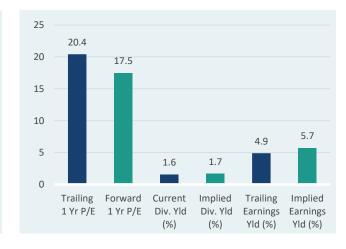


IMPLIED VOLATILITY (VIX INDEX)



Source: Choe, as of 7/31/22

S&P 500 VALUATION SNAPSHOT



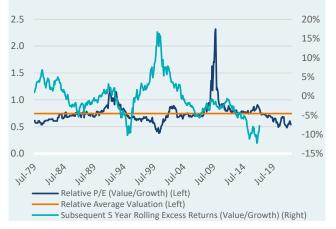
Source: Bloomberg, as of 7/31/22



Domestic equity size and style

- Growth stocks (Russell 3000 Growth +12.0%) largely outperformed value stocks (Russell 3000 Value +6.8%) as market expectations for rate cuts in 2023 helped drive a sharp decline in yields. Growth stocks – whose earnings are anticipated further in the future than value peers – benefited from declining U.S. Treasury yields that pulled discount rates lower.
- Small-cap equities (Russell 2000 Index +10.4%)
 outperformed large-cap equities (Russell 1000 Index +9.3%) for a third consecutive month. Small-cap equities tend to utilize more debt, causing higher exposure to interest rates.
- Breadth was strong within the S&P 500 as 88% of members advanced over the month. On average, advancing members climbed +10.4% as markets partially bounced back from year-to-date declines.
- Despite the backdrop of a rising rate environment, growth equities remain expensive relative to value peers. The Russell 1000 Growth Index traded at a P/E of 29.9 in July, which represents a P/E 1.9 times higher than that of the Russell 1000 Value. This relative P/E ranked in the 6th percentile over the past 40 years of measurement.

VALUE VS. GROWTH RELATIVE VALUATIONS



Source: FTSE, Bloomberg, as of 7/31/22

VALUE VS. GROWTH 1-YR ROLLING RELATIVE PERFORMANCE



Source: FTSE, Bloomberg, as of 7/31/22

SMALL VS. LARGE 1-YR ROLLING RELATIVE PERFORMANCE





Fixed income

- The 10-Year Treasury yield fell -31 basis points over the month and the 10-2 spread inverted for the first time since April. The inverted 10-2 spread, which is widely recognized as a leading indicator of recession, widened to -22 basis points by month-end.
- The 10-Year Breakeven Inflation rate fell to 2.4% intramonth which marked the lowest level since September 2021. Despite the early month decline in the wake of hawkish Fed action, the measure of expected inflation ended the month 20 basis points higher, potentially indicating that investors anticipate inflation to be more persistent.
- U.S. high yield spreads fell more than -100 basis points over the month and ended at 4.8%. The Bloomberg U.S. Corp High Yield Index gained +5.9% over the month as yields fell sharply and reversed a trend of increases that had persisted since the beginning of the year.
- The U.S. Dollar hit parity with the Euro for the first time since 2002 intra-month and remained strong against foreign peers in July. The U.S. Dollar has appreciated +11.4% against the Euro year-to-date as prompt central bank action in the U.S. combined with global recession fears has increased global demand for Dollar safety.

U.S. TREASURY YIELD CURVE



NOMINAL YIELDS



BREAKEVEN INFLATION RATES



Source: Morningstar, as of 7/31/22

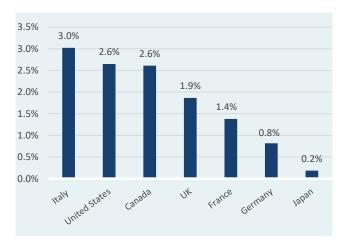
Source: Bloomberg, as of 7/31/22



Global markets

- International Equities (MSCI ACWI ex USA +3.4%) increased over the month as developed markets (MSCI EAFE +5.0%) helped buoy weak performance from emerging markets (MSCI EM -0.4%).
- Emerging market equities (MSCI EM Index -0.4%) fell over the month as declines in Chinese equities (MSCI China Index -9.4%) weighed heavily on the index. The Chinese Real Estate sector fell -19.6% as a growing number of Chinese homebuyers boycotted mortgage payments. Home sales and payments in China are often made in advance of construction and long backlogs have led to years of payment prior to completion.
- The European Central Bank raised its key policy rate by 50 basis points in the first rate hike in over a decade.
 The move – which followed an +8.6% eurozone inflation print for June – brought rates in the eurozone into positive territory for the first time in 8 years.
- In conjunction with the ECB rate announcement, the central bank released details on a new tool coined the Transmission Protection Instrument, or TPI. The TPI is designed to help the ECB maintain even transmission of policy to address price stability across all eurozone countries through purchases in secondary markets.

GLOBAL SOVEREIGN 10-YEAR YIELDS



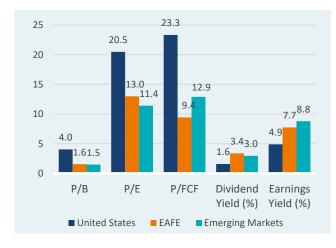
Source: Bloomberg, as of 7/31/22

U.S. DOLLAR MAJOR CURRENCY INDEX



Source: Federal Reserve, as of 7/31/22

MSCI VALUATION METRICS (3-MONTH AVG)





Commodities

- The Bloomberg Commodity Index (+4.3%) climbed higher in July following a steep decline in the prior month.
 Upward movements in the broad index were driven heavily by a sharp increase in the price of natural gas, which constitutes 8.0% of the overall Commodity Index.
- The Bloomberg Energy Sub-Index (+12.4%) rallied over the month as natural gas prices rose +51.7% to near record highs. Gazprom, Russia's state-owned energy corporation, decreased natural gas flows to Europe through the Nord Stream 1 pipeline mid-month which put further strains on global supply and sparked concerns that Russia may halt flows entirely.
- The Bloomberg Grains Sub-Index declined -2.9% in July. Ukraine and Russia reached an agreement to allow the export of grain through the Black Sea, though the pace of exports is expected to be choppy. More than 20 million tons of grain have accumulated in Ukrainian silos and the absence of Ukraine from the global marketplace has put upward pressure on grain prices globally.
- The Bloomberg Livestock Sub-Index (+6.9%) recorded its highest monthly gain of the year as U.S. cattle inventories fell year-over-year. Extreme temperatures across the U.S. Midwest stoked fears of higher input costs which led producers to trim their herd sizes.

INDEX AND SECTOR PERFORMANCE

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg Commodity	4.3	4.3	23.5	27.2	16.2	8.8	(1.0)
Bloomberg Agriculture	(2.1)	(2.1)	10.7	17.6	20.1	6.2	(2.7)
Bloomberg Energy	12.4	12.4	77.9	80.3	16.1	11.6	(4.3)
Bloomberg Grains	(2.9)	(2.9)	12.8	17.6	18.7	6.0	(4.1)
Bloomberg Industrial Metals	1.6	1.6	(8.1)	(2.1)	12.0	7.0	1.6
Bloomberg Livestock	6.9	6.9	3.2	3.3	(5.6)	(4.4)	(3.5)
Bloomberg Petroleum	(3.4)	(3.4)	58.0	69.4	17.9	15.3	(2.0)
Bloomberg Precious Metals	(2.0)	(2.0)	(6.3)	(7.8)	5.7	4.8	(1.1)
Bloomberg Softs	(4.6)	(4.6)	(1.5)	14.2	17.1	2.9	(4.0)

Source: Morningstar, as of 7/31/22

COMMODITY PERFORMANCE





Appendix



Periodic table of returns

Small Cap Value

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	YTD	5-Year	10-Year
Commodities	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.7	36.4	38.5	28.3	23.5	16.3	16.0
Real Estate	22.8	8.4	10.3	48.5	22.2	21.4	26.9	16.2	1.4	37.2	26.9	7.8	18.1	38.8	13.2	5.7	21.3	30.2	1.9	31.4	34.6	27.6	8.7	12.6	13.7
Cash	12.2	7.3	6.7	47.3	20.7	20.1	23.5	15.8	-6.5	34.5	24.5	2.6	17.9	34.5	13.0	0.9	17.3	25.0	0.0	28.5	21.0	27.1	0.2	8.9	11.1
Hedge Funds of Funds	11.6	3.3	1.6	46.0	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	0.6	12.1	22.2	-1.5	26.5	20.0	26.5	-6.1	8.8	10.7
Large Cap Value	7.0	2.8	1.0	39.2	16.5	7.5	18.4	11.6	-25.9	28.4	16.8	0.4	16.4	33.1	6.0	0.0	11.8	21.7	-3.5	25.5	18.3	25.2	-7.1	8.3	10.6
US Bonds	4.1	-2.4	-6.0	29.9	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-0.8	11.2	14.6	-6.0	22.4	14.0	17.7	-8.2	7.1	10.2
Small Cap Value	6.0	2.5	-5.9	30.0	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	-4.8	22.0	10.3	14.8	-9.3	6.9	9.7
60/40 Global Portfolio	-3.0	-5.6	-11.4	29.7	12.9	5.3	15.1	7.0	-35.6	20.6	15.5	-2.9	14.6	12.1	4.2	-1.4	8.0	13.7	-8.3	18.6	7.8	11.3	-13.5	6.7	5.8
Large Cap Equity	-7.3	-9.1	-15.5	25.2	11.4	4.7	13.3	7.0	-36.8	19.7	13.1	-4.2	11.5	11.0	3.4	-2.5	7.1	7.8	-9.3	18.4	7.5	8.9	-13.6	4.8	5.8
Small Cap Equity	-7.8	-9.2	-15.7	23.9	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-3.8	5.7	7.7	-11.0	8.7	4.6	6.5	-15.4	3.5	3.7
International Equity	-14.0	-12.4	-20.5	11.6	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	7.0	-11.2	7.8	2.8	2.8	-15.6	2.6	2.8
Emerging Markets Equity	-22.4	-19.5	-21.7	9.0	6.3	4.2	4.8	-0.2	-38.5	5.9	6.5	-11.7	4.2	-2.0	-1.8	-7.5	1.0	3.5	-12.9	7.7	0.5	0.0	-17.8	1.3	1.6
Large Cap Growth	-22.4	-20.4	-27.9	4.1	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	-13.8	6.4	0.5	-1.5	-19.4	1.0	0.6
Small Cap Growth	-30.6	-21.2	-30.3	1.0	1.4	2.4	2.1	-9.8	-53.2	-16.9	0.1	-18.2	-1.1	-9.5	-17.0	-24.7	0.3	0.9	-14.6	2.1	-3.1	-2.5	-21.6	1.0	-1.0
	L	arge C	ap Equ	iity				Sn	na II Ca	p Grov	wth				Cor	mmod	ities								
	L	arge C	ap Val	ue				Int	ternat	ional (quity				Rea	al Esta	te								
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	S	mall C	ap Equ	iity				US Bonds 60% MSCI ACV							ACWI	/40%	0% Bloomberg Global Bond								

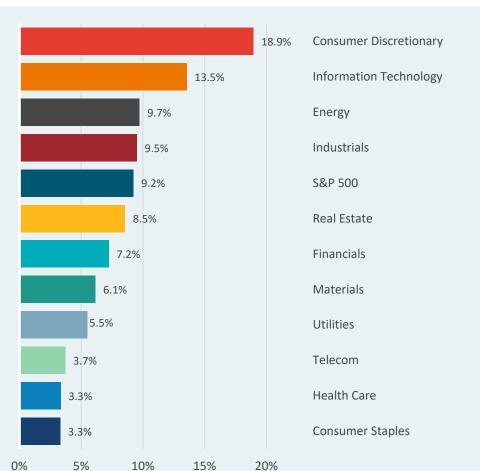
Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Value, Russell 2000, Russell 2000 Growth, MSCI EAFE, MSCI EM, Bloomberg US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, Bloomberg Global Bond. NCREIF Property Index performance data as of 6/30/22.

Cash

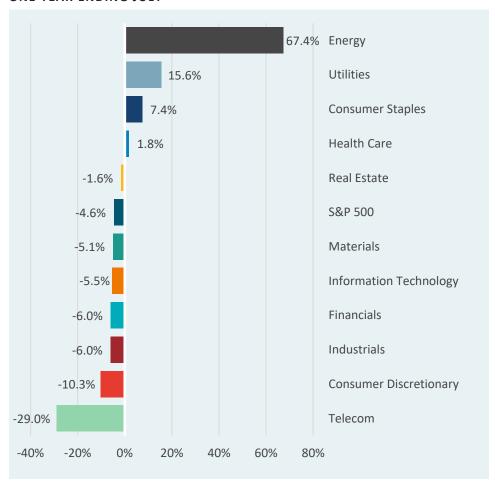


S&P 500 sector returns

QTD



ONE YEAR ENDING JULY



Source: Morningstar, as of 7/31/22

Source: Morningstar, as of 7/31/22



Detailed index returns

DOMESTIC EQUITY								FIXED INCOME							
	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year		Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index								Broad Index							
S&P 500	9.2	9.2	(12.6)	(4.6)	13.4	12.8	13.8	Bloomberg US TIPS	4.4	4.4	(5.0)	(3.6)	4.4	4.0	2.0
S&P 500 Equal Weighted	8.7	8.7	(9.4)	(2.8)	12.5	11.4	13.6	Bloomberg US Treasury Bills	0.1	0.1	0.1	0.1	0.6	1.1	0.7
DJ Industrial Average	6.8	6.8	(8.6)	(4.1)	9.2	10.9	12.3	Bloomberg US Agg Bond	2.4	2.4	(8.2)	(9.1)	(0.2)	1.3	1.6
Russell Top 200	9.1	9.1	(13.5)	(5.8)	14.2	13.6	14.2	Bloomberg US Universal	2.5	2.5	(8.7)	(9.6)	(0.2)	1.3	1.9
Russell 1000	9.3	9.3	(13.6)	(6.9)	12.9	12.6	13.7	Duration							
Russell 2000	10.4	10.4	(15.4)	(14.3)	7.5	7.1	10.6	Bloomberg US Treasury 1-3 Yr	0.4	0.4	(2.6)	(3.3)	0.4	0.9	0.8
Russell 3000	9.4	9.4	(13.7)	(7.4)	12.6	12.2	13.5	Bloomberg US Treasury Long	2.7	2.7	(19.2)	(19.2)	(2.1)	1.2	1.6
Russell Mid Cap	9.9	9.9	(13.8)	(9.8)	9.5	9.7	12.3	Bloomberg US Treasury	1.6	1.6	(7.7)	(8.7)	(0.3)	1.0	1.1
Style Index								Issuer							
Russell 1000 Growth	12.0	12.0	(19.4)	(11.9)	16.1	16.3	16.0	Bloomberg US MBS	3.2	3.2	(5.8)	(6.7)	(0.5)	0.9	1.4
Russell 1000 Value	6.6	6.6	(7.1)	(1.4)	8.9	8.3	11.1	Bloomberg US Corp. High Yield	5.9	5.9	(9.1)	(8.0)	1.9	3.1	4.9
Russell 2000 Growth	11.2	11.2	(21.6)	(23.2)	4.7	6.9	10.7	Bloomberg US Agency Interm	0.9	0.9	(4.1)	(5.2)	(0.0)	0.9	1.0
Russell 2000 Value	9.7	9.7	(9.3)	(4.8)	9.4	6.7	10.2	Bloomberg US Credit	3.0	3.0	(11.2)	(12.2)	(0.2)	1.7	2.5
INTERNATIONAL EQUITY								OTHER							
Broad Index								Index							
MSCI ACWI	7.0	7.0	(14.6)	(10.5)	8.5	7.9	9.3	Bloomberg Commodity	4.3	4.3	23.5	27.2	16.2	8.8	(1.0)
MSCI ACWI ex US	3.4	3.4	(15.6)	(15.3)	2.9	2.4	5.0	Wilshire US REIT	8.7	8.7	(14.8)	(3.5)	6.4	6.8	8.0
MSCI EAFE	5.0	5.0	(15.6)	(14.3)	3.2	2.6	5.8	CS Leveraged Loans	1.9	1.9	(2.7)	(0.9)	2.4	3.2	4.0
MSCI EM	(0.2)	(0.2)	(17.8)	(20.1)	0.9	1.0	2.8	S&P Global Infrastructure	4.0	4.0	3.5	8.8	5.6	5.0	7.5
MSCI EAFE Small Cap	6.6	6.6	(19.7)	(20.3)	3.5	2.3	7.8	Alerian MLP	12.6	12.6	23.6	25.1	2.8	0.9	1.5
Style Index								Regional Index							
MSCI EAFE Growth	7.9	7.9	(21.0)	(19.1)	4.0	4.6	6.9	JPM EMBI Global Div	2.9	2.9	(18.0)	(19.3)	(4.7)	(0.8)	2.1
MSCI EAFE Value	2.1	2.1	(10.3)	(9.9)	1.6	0.3	4.4	JPM GBI-EM Global Div	0.3	0.3	(14.3)	(18.7)	(6.0)	(2.6)	(1.7)
Regional Index								Hedge Funds							
MSCI UK	3.7	3.7	(5.4)	(1.3)	3.1	2.5	4.0	HFRI Composite	1.6	1.6	(4.1)	(3.2)	6.6	5.2	5.1
MSCI Japan	5.7	5.7	(15.7)	(14.3)	2.8	2.5	6.4	HFRI FOF Composite	0.5	0.5	(6.1)	(4.4)	4.0	3.5	3.7
MSCI Euro	4.8	4.8	(21.6)	(21.0)	1.3	0.6	5.8	Currency (Spot)							
MSCI EM Asia	(1.3)	(1.3)	(18.3)	(20.4)	3.2	2.0	5.2	Euro	(2.5)	(2.5)	(10.3)	(14.0)	(2.9)	(2.9)	(1.9)
MSCI EM Latin American	4.3	4.3	3.7	(8.8)	(5.1)	(1.3)	(1.9)	Pound Sterling	0.2	0.2	(10.2)	(12.5)	(0.2)	(1.6)	(2.5)
								Yen	1.6	1.6	(13.8)	(17.9)	(6.7)	(3.7)	(5.2)

Source: Morningstar, HFRI, as of 7/31/22.



Detailed private market returns

Comparison to public market index returns

Private Equity Pooled IRRs	1 Year	3 Year	5 Year	10 Year
Global Private Equity FoFs & Secondary Funds	38.9	26.4	20.7	14.7
Global Private Equity Direct Funds *	37.9	29.1	23.6	17.7
U.S. Private Equity Direct Funds *	45.0	32.1	25.2	19.1
Europe Private Equity Direct Funds *	33.1	27.6	24.8	16.2
Asia Private Equity Direct Funds *	15.7	18.4	16.6	14.7
Public Index Time-weighted Returns				
MSCI World	21.8	21.7	15.0	12.7
S&P 500	28.7	26.1	18.5	16.6
MSCI Europe	16.3	14.9	10.1	8.2
MSCI AC Asia Pacific	(1.5)	12.1	9.9	8.0

Private Real Estate Pooled IRRs	1 Year	3 Year	5 Year	10 Year
U.S. All Private Real Estate	30.0	13.0	11.8	13.0
Public Index Time-weighted Returns				
FTSE NAREIT Equity REIT	43.2	18.4	10.8	11.4

Private Credit Pooled IRRs	1 Year	3 Year	5 Year	10 Year
U.S. All Private Debt **	32.4	16.8	13.9	12.6
Public Index Time-weighted Returns				
S&P / LSTA U.S. Leveraged Loan 100 Index	3.5	5.6	3.9	4.3

Private Real Assets Pooled IRRs	1 Year	3 Year	5 Year	10 Year
Global Nature Resources ***	31.3	1.9	2.5	2.1
Global Infrastructure	13.8	11.6	12.4	11.0
Public Index Time-weighted Returns				
S&P Global Natural Resources	25.2	13.9	9.6	4.6
S&P Global Infrastructure	11.9	10.2	7.8	7.7

Source: Pooled IRRs are from Thompson Reuters C/A and Time-weighted Returns are from Investment Metrics, as of December 31st, 2021. All returns in U.S. dollars.

^{***} Includes Private Equity Energy, Timber and Upstream Energy & Royalties.



^{*} Includes Buyout, Growth Equity and Venture Capital.

^{**} Includes Control-Oriented Distressed, Credit Opportunities, Senior Debt and Subordinated Capital.

Notices & disclosures

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