PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

PERIOD ENDING: JUNE 30, 2022

Investment Performance Review for

San Mateo County Employees’ Retirement Association

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2nd quarter summary

THE ECONOMIC CLIMATE

— U.S. real GDP fell again during Q2, down -0.9% annualized (+1.6% over the past full year). This stoked broad fears of recession, as two consecutive quarters of negative growth is a common definition of technical recession.

— U.S. real personal consumption slowed to pre-COVID rates of growth, coming in at 2.1% year-over-year in May. The buying habits of consumers appear to have transitioned back towards services and away from goods, reversing the unprecedented spending shift that had occurred during the pandemic. This trend should help mitigate strained supply chains, as fewer goods require shipping.

PORTFOLIO IMPACTS

— U.S. core CPI slowed to 5.9% year-over-year in June. Headline inflation, which includes food and energy prices, came in surprisingly hot at 9.1% year-over-year, exceeding expectations. Higher energy prices were a major driver of the inflation print, with energy commodities and gasoline moving more than 10% higher from May to June.

— Credit markets sold off during Q2, impacted by concerns of a slowing economy and possibility of recession as the Fed signaled a willingness to raise rates until inflation slows. Bank loans performed the best at -4.4% and outperformed longer duration bonds such as investment grade and high yield (-7.3% and -9.8%, respectively).

THE INVESTMENT CLIMATE

— Russia's invasion of Ukraine continued, resulting in heavy losses on both sides. Most fighting has taken place in the east, as Russia gradually advances. Both Finland and Sweden are in the process of joining NATO—a landmark move and result of war likely unforeseen by Russia.

— Early in 2022 many investors feared a potential global commodity shortage—a product of underinvestment in production capacity in recent years. Russia's invasion of Ukraine further amplified these concerns, pushing commodities higher. This trend appears to have reversed, as recession is a notable possibility, and many commodities have seen sharp losses.

ASSET ALLOCATION ISSUES

— Nearly every asset class delivered moderate to deeply negative returns during Q2. Global equities saw a -15.7% pullback (MSCI ACWI), fixed income experienced losses as interest rates rose and credit spreads widened (BBG US Aggregate -4.7%, BBG US High Yield -9.8%), and commodities saw a reversal (BBG Commodity -5.7%).

— Value stocks outperformed Growth stocks by a wide margin again during Q2 (Russell 1000 Value -12.2% vs Russell 1000 Growth -20.9%) as many Growth stocks with lofty valuations were hit by rising rates and risk-off sentiment. Large capitalization stocks slightly outperformed small cap stocks (Russell 1000 -16.7%, Russell 2000 -17.2%).

Most asset classes delivered further losses during Q2 over fears of inflation and recession

U.S. economics summary

— U.S. real GDP fell -0.9% annualized during Q2 (+1.6% over the past full year). Most aspects of economic activity showed decline, including private investment (-2.7%), government spending (-0.3%), and imports (-0.5%). This stoked fears of recession, as two quarters of negative growth is a common definition of technical recession.

— The Federal Reserve's objective of a "soft landing" for the economy appears to have failed. An increasingly aggressive stance during the first half of the year contributed to a broad market selloff. The negative wealth effect of the market selloff, paired with a slowdown in big ticket purchases, has slowed the economy.

— U.S. core CPI, which excludes food & energy prices, slowed to 5.9% year-over-year in June. However, headline inflation which includes food and energy prices, came in surprisingly hot at 9.1% year-over-year, exceeding expectations. Higher energy prices were a major driver of the inflation print, with energy commodities and gasoline moving more than 10% higher just from May to June.

— Unemployment was unchanged at 3.6% during Q2. The broader U-6 unemployment rate tightened from 6.9% to 6.7%. A strong job market likely emboldens the Federal Reserve in its fight against high inflation, as the Fed holds a dual mandate to maximize employment and keep prices stable.

— Consumer sentiment collapsed to the lowest reading on record, according to the University of Michigan survey, which moved from 59.4 to 50.0. Survey respondents across all income, age, education, region, and political affiliation groups displayed deterioration in their outlook for the economy. Nearly half of respondents feel that inflation is damaging living standards.

	Most Recent	**12 Months Prior**
Real GDP *(YoY)*	1.6% *6/30/22*	12.2% *6/30/21*
Inflation *(CPI YoY, Core)*	5.9% *6/30/22*	4.4% *6/30/21*
Expected Inflation *(5yr-5yr forward)*	2.1% *6/30/22*	2.2% *6/30/21*
Fed Funds Target Range	1.50% – 1.75% *6/30/22*	0.00% – 0.25% *6/30/21*
10-Year Rate	2.89% *6/30/22*	1.45% *6/30/21*
U-3 Unemployment	3.6% *6/30/22*	5.9% *6/30/21*
U-6 Unemployment	6.7% *6/30/22*	9.8% *6/30/21*

International economics summary

— Economic growth has moderated in most countries, moving toward average levels. Higher inflation continues to erode growth figures as GDP is typically quoted as *inflation-adjusted* growth.

— Inflation trends continue to be disparate around the world. Japan and China are experiencing very low inflation and muted price pressures, while Europe and the United States are coping with multidecade-high inflation. Countries with low inflation and countries with high inflation all appear to have experienced an uptick during the second quarter.

— Labor markets have been relatively stable in developed markets, with conditions in the Eurozone strengthening. Unemployment in emerging markets were mixed—Brazil and Russia experienced improvement, while India and China saw slight weakening.

— Russia's invasion of Ukraine continued in the second quarter, leading to heavy loss of life on both sides. Most fighting has taken place in the east, as Russia generally gradually pushing forward. Concerns around food shortages in nearby countries that depend on Ukrainian agriculture persist, though many commodity prices that had shot higher in March and April have eased, falling closer to pre-invasion costs.

— During the first week of July, millions of Chinese citizens were put back into lockdown, and subjected to mass testing, as small outbreaks have led to renewed restrictions. China continues to stick to a "zero COVID" approach, which is increasingly at odds with the recognition by most nations that civilization will have to live *with* the virus for the long-term, while moving back to normal life.

Area	**GDP (Real, YoY)**	**Inflation (CPI, YoY)**	**Unemployment**
United States	1.6% *6/30/22*	9.1% *6/30/22*	3.6% *6/30/22*
Eurozone	5.4% *3/31/22*	8.6% *6/30/22*	6.6% *5/31/22*
Japan	0.4% *3/31/22*	2.3% *6/30/22*	2.6% *5/31/22*
BRICS Nations	4.4% *3/31/22*	4.6% *6/30/22*	5.2% *12/31/21*
Brazil	1.7% *3/31/22*	11.9% *6/30/22*	9.8% *5/31/22*
Russia	3.5% *3/31/22*	15.9% *6/30/22*	3.9% *5/31/22*
India	4.1% *3/31/22*	7.0% *6/30/22*	7.8% *6/30/22*
China	4.8% *3/31/22*	2.5% *6/30/22*	5.9% *5/31/22*

NOTE: India lacks reliable government unemployment data. Unemployment rate shown above is estimated from the Centre for Monitoring Indian Economy. The Chinese unemployment rate represents the monthly surveyed urban unemployment rate in China.

Equity environment

— U.S. equities suffered large losses during the second quarter (S&P 500 -16.1%), as many highly priced growth stocks took an exceptionally large hit due to interest rate rises and risk-off sentiment. International developed equities (MSCI EAFE -14.5%) experienced similar losses, while emerging market equities (MSCI Emerging Markets -11.4%) outperformed materially, on an unhedged currency basis.

— As mentioned during Q2 earnings calls, a rising number of S&P 500 companies were concerned about material & commodity costs, COVID costs, and oil & gas prices. A decreasing number of companies were concerned about labor costs & shortages, supply chain disruptions, transport & freight costs, and Russia/Ukraine.

— Currency movement generated large losses for investors who do not hedge their foreign currency exposure. Investors in international developed markets would have seen a loss of approximately -7.3% with a currency hedging program, rather than the -14.5% loss of unhedged investors. Over the past full year, losses from currency movement were -12.4%.

— Value stocks outperformed Growth stocks by a wide margin again in Q2 (Russell 1000 Value -12.2% vs Russell 1000 Growth -20.9%) as many Growth stocks with lofty valuations suffered due to rising interest rates and broader risk-off sentiment. Large capitalization stocks outperformed small cap stocks slightly (Russell 1000 -16.7%, Russell 2000 -17.2%).

— The Cboe VIX Index rose during the quarter from 20.6% to 28.7%, as risk assets sold-off and investors began focusing on potential recession. Investors remain acutely focused on the path of inflation, and market volatility may ease if inflation does in fact begin to moderate in future months.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
U.S. Large Cap (S&P 500)	(16.1%)		(10.6%)	
U.S. Small Cap (Russell 2000)	(17.1%)		(25.2%)	
U.S. Equity (Russell 3000)	(16.7%)		(13.9%)	
U.S. Large Value (Russell 1000 Value)	(12.2%)		(6.8%)	
US Large Growth (Russell 1000 Growth)	(20.9%)		(18.8%)	
Global Equity (MSCI ACWI)	(15.7%)	(13.5%)	(15.8%)	(12.1%)
International Large (MSCI EAFE)	(14.5%)	(7.3%)	(17.8%)	(5.4%)
Eurozone (Euro Stoxx 50)	(15.3%)	(9.2%)	(23.1%)	(11.3%)
U.K. (FTSE 100)	(11.2%)	(3.6%)	(7.1%)	6.2%
Japan (NIKKEI 225)	(14.8%)	(4.2%)	(23.8%)	(6.0%)
Emerging Markets (MSCI Emerging Markets)	(11.4%)	(8.2%)	(25.3%)	(21.5%)

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 6/30/22

Domestic equity

U.S. equities saw sharp losses during the second quarter (S&P 500 -16.1%), underperforming global markets (MSCI ACWI ex-US -13.7%). U.S. sector dispersion was wide, with consumer discretionary stocks suffering the worst pain (-26.2%) and consumer staples faring the best (-4.6%).

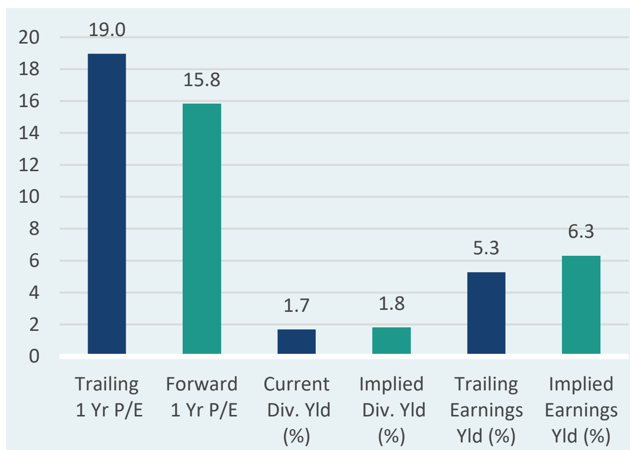
Calendar year 2022 bottom-up earnings estimates for the S&P 500 improved slightly during the quarter, despite the equity bear market. A rosier earnings outlook was fueled mostly by the energy and materials sectors, while consumer discretionary and communication services sectors saw worsening expectations. According to Factset, an increased number of companies issued negative earnings guidance during the quarter, though the balance of companies offering positive and negative guidance remains in a relatively normal range.

According to Q2 earnings calls, a rising number of S&P 500 companies were concerned about material & commodity costs, COVID costs, and oil & gas prices. A decreasing number of S&P 500 companies were concerned about labor costs & shortages, supply chain disruptions, transport & freight costs, and the economic impacts of Russia's invasion of Ukraine.

S&P 500 PRICE INDEX

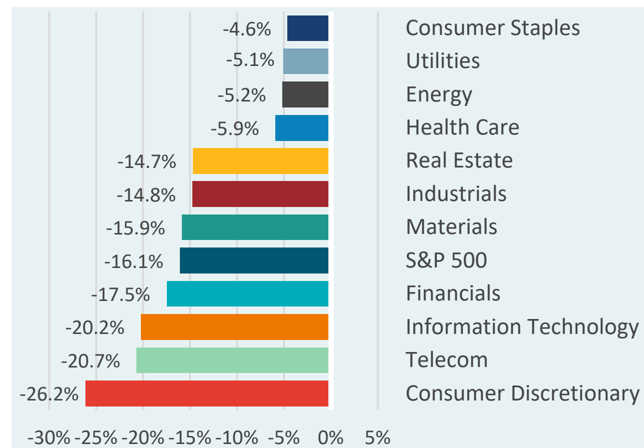
Source: Standard & Poor's, as of 6/30/22

S&P VALUATION SNAPSHOT



Source: Bloomberg, as of 6/30/22

Q2 SECTOR PERFORMANCE



Source: Morningstar, as of 6/30/22

Domestic equity size & style

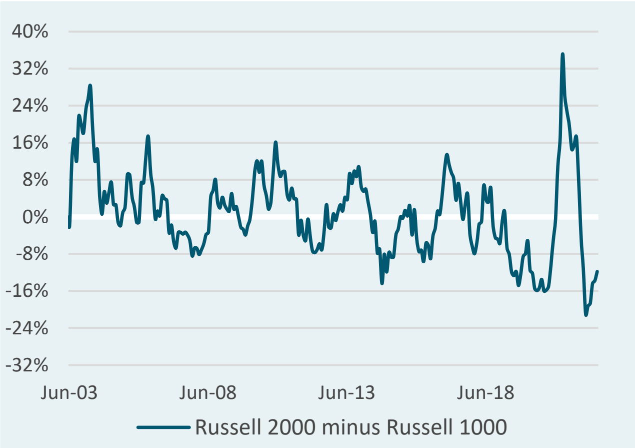
Value stocks outperformed Growth stocks by a wide margin once again in the second quarter (Russell 1000 Value -12.2% vs Russell 1000 Growth -20.9%) as many Growth stocks with lofty valuations suffered due to rising interest rates and broader risk-off sentiment. Large capitalization stocks outperformed small capitalization stocks slightly (Russell 1000 -16.7%, Russell 2000 -17.2%).

The recent drawdown of Growth stocks has helped partially close the historically wide price gap between Value and Growth, as reflected in the bottom right chart. Sector trends contributed to style performance during the quarter. The energy sector outperformed, and information technology was a poor performer. Other Value-concentrated sectors such as financials and materials performed closely in line with the overall index.

In last quarter's research commentary we mentioned that further tightening of Fed policy and interest rate hikes would likely impact Value and Growth stock behavior. This foresight was valid and we believe will remain so. Further Fed hawkishness and market risk-off behavior may lead to additional Growth underperformance, but a reversal by the Federal Reserve and easing of interest rates may bolster the returns of Growth, all else equal.

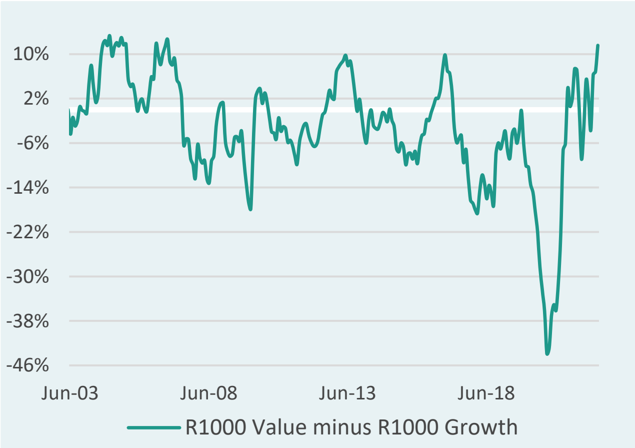
A rebound in Value continued during Q2

SMALL CAP VS LARGE CAP (YOY)



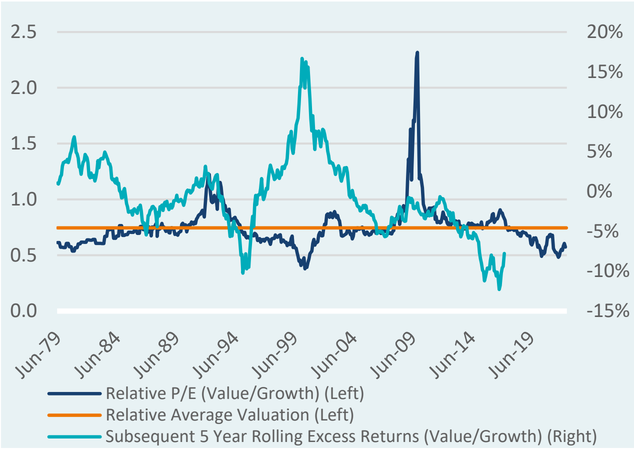
Source: FTSE, as of 6/30/22

VALUE VS GROWTH (YOY)



Source: FTSE, as of 6/30/22

VALUE VS. GROWTH RELATIVE VALUATIONS



Source: Standard & Poor's, as of 6/30/22

International developed equity

International developed equities fell during the quarter (MSCI EAFE -14.5%), mildly outperforming U.S. equities (S&P 500 -16.1%) and materially underperforming emerging market equities (MSCI Emerging Markets -11.4%), on an unhedged currency basis.

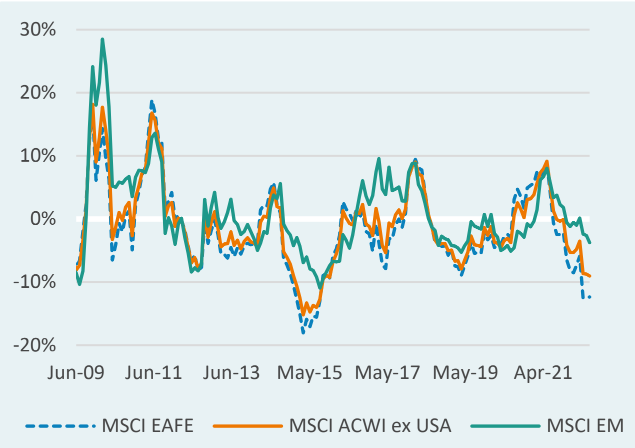
Currency movement during the quarter generated large losses for investors who do not hedge foreign currency exposure. Investors in international developed markets would have seen a loss of approximately -7.3% with a currency hedging program, rather than the -14.5% loss if currency was left unhedged. Over the past year, investors in international equities with a currency hedging program would have experienced roughly a -5.4% return, compared to a return of -17.8% if currency was left unhedged.

Eurozone equities provided the poorest performers during the quarter (MSCI Euro -11.1%), as EUR/USD reached parity for the first time in nearly 20 years. The United Kingdom market (MSCI UK 1.8%) and Japanese market (MSCI Japan -6.6%) lifted the overall MSCI EAFE Index.

INTERNATIONAL DEVELOPED EQUITY

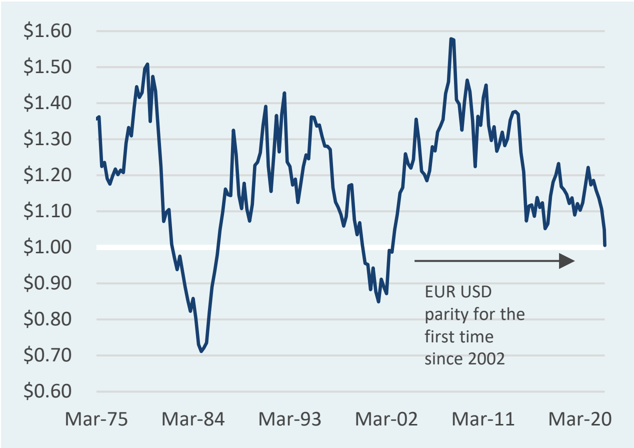
Source: MSCI, as of 6/30/22

EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 6/30/22

PRICE OF 1 EUR IN USD



Source: Bloomberg, as of 7/14/22

Emerging market equity

Emerging market equities have delivered broad outperformance throughout the global risk asset drawdown (MSCI EM -11.4%, MSCI ACWI -15.7%) on an unhedged currency basis. A bounce-back in Chinese equities over the quarter (MSCI China 3.5%) from their sharp recent losses helped lift overall performance of the asset class. Latin American markets lagged Asian markets (MSCI EM Latin America -21.9%%, MSCI EM Asia -9.3%), reversing last quarter's gains.

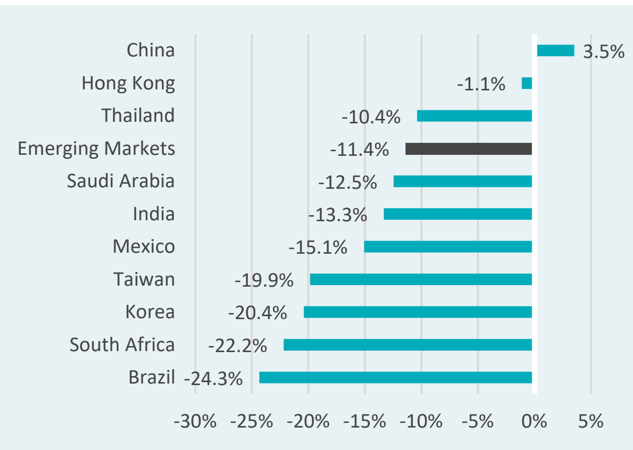
Strong returns from the consumer discretionary sector (12.9%)—the largest sector in the MSCI China Index—propelled Chinese equity performance forward. Outside of Chinese equities, emerging markets struggled, as central banks around the world tightened policy to fight inflation. Emerging market countries whose economies are reliant on raw goods exports were particularly impacted by tightening, as global commodity prices have drawn down from peaks seen earlier in the year.

The strong dollar also provided a headwind to emerging market equity returns, as currency movement resulted in a -3.2% loss. Emerging market currencies remain far weaker than the historical average, which may allow performance upside if mean reversion were to occur.

EMERGING MARKET EQUITY

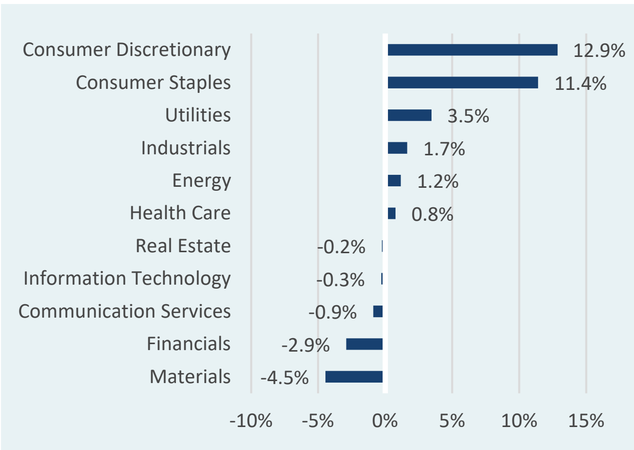
Source: MSCI, as of 6/30/22

Q2 PERFORMANCE – TOP 10 EM CONSTITUENTS



Source: Bloomberg, MSCI as of 6/30/22, performance in USD terms

MSCI CHINA Q2 SECTOR PERFORMANCE



Source: Bloomberg, MSCI as of 6/30/22, performance in USD terms

Fixed income environment

— The 10-year U.S. Treasury yield jumped during Q2 from 2.34% to nearly 3.50%, ending the quarter at 2.89%. Yields have fallen from their highs as recession fears mount. The Federal Reserve has a history of cutting interest rates during recession. This implies a higher chance of rate cuts as it appears the U.S. may currently be in recession.

— Credit markets sold off during Q2, impacted by concerns of a slowing economy and recession as the Fed signaled a willingness to raise rates until inflation slows. Bank loans performed the best at -4.4% and outperformed longer duration bonds such as investment grade and high yield (-7.3% and -9.8%, respectively).

— Credit spreads jumped considerably alongside the broader market selloff. U.S. high yield spreads increased from 3.4% to 5.6% and U.S. investment grade spreads headed from 1.2% to 1.6%. In contrast to the recent low yield environment, fixed income now offers investors more robust yields.

— The U.S. yield curve remained fairly flat during the second quarter. The 10-year minus 2-year yield spread fluctuated between -0.05% and 0.4%. Markets continue to price a flat or inverted yield curve, which is generally recognized as a sign of incoming recession.

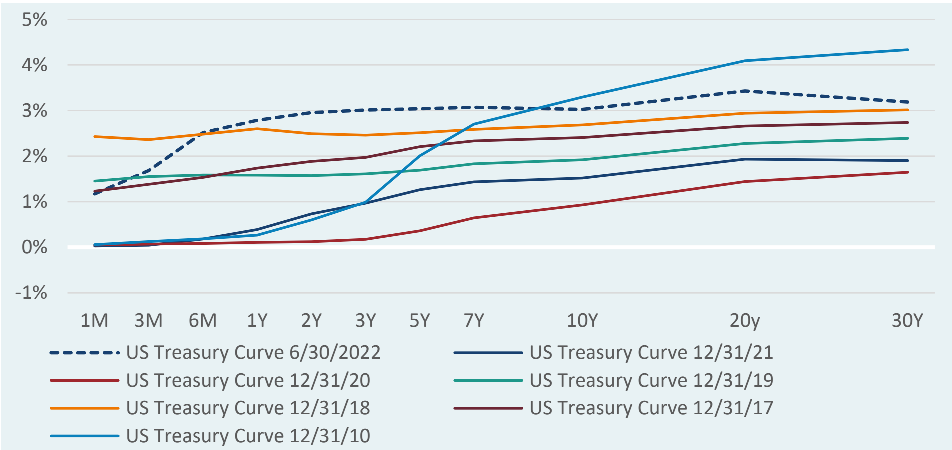
— In June, the U.S. Federal Reserve began to unwind its $9 trillion balance sheet. Initially this action involved *not purchasing new bonds* and letting existing bonds mature and roll off. The Fed signaled plans to allow $30 billion of U.S. Treasuries and $17.5 billion of mortgage-backed securities to fall off the balance sheet by end of month. Leadership has admitted that this size of divestment program is essentially the first of its kind and that the committee will be moving with caution.

	QTD Total Return	**1 Year Total Return**
Core Fixed Income (Bloomberg U.S. Aggregate)	(4.7%)	(10.3%)
Core Plus Fixed Income (Bloomberg U.S. Universal)	(5.1%)	(10.9%)
U.S. Treasuries (Bloomberg U.S. Treasury)	(3.8%)	(8.9%)
U.S. High Yield (Bloomberg U.S. Corporate HY)	(9.8%)	(12.8%)
Bank Loans (S&P/LSTA Leveraged Loan)	(4.4%)	(2.7%)
Emerging Market Debt Local (JPM GBI-EM Global Diversified)	(8.6%)	(19.3%)
Emerging Market Debt Hard (JPM EMBI Global Diversified)	(11.4%)	(21.1%)
Mortgage-Backed Securities (Bloomberg MBS)	(4.0%)	(9.0%)

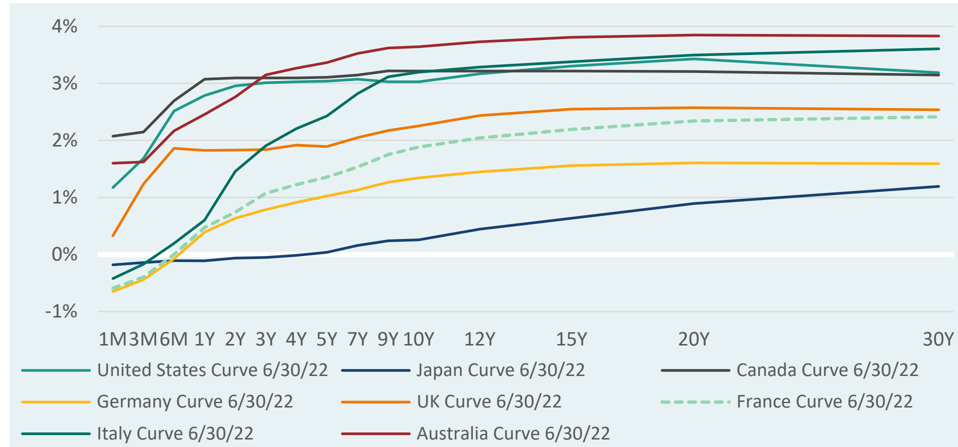
Source: Bloomberg, as of 6/30/22

Yield environment

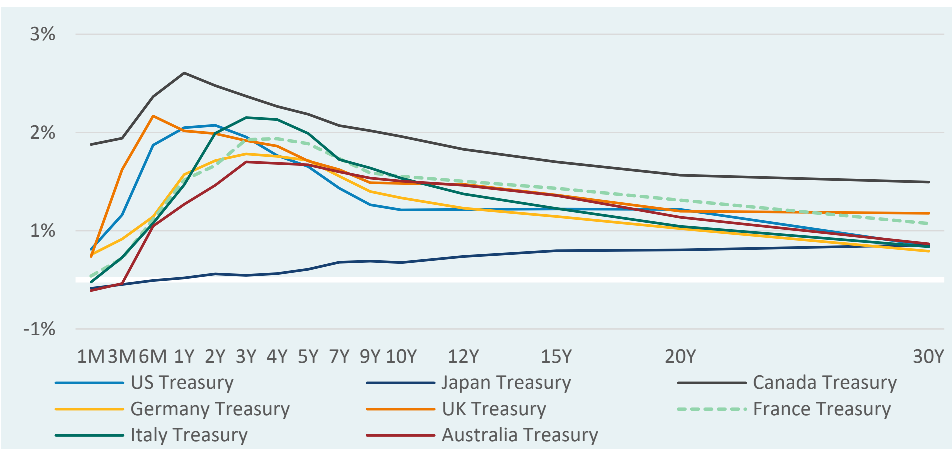
U.S. YIELD CURVE



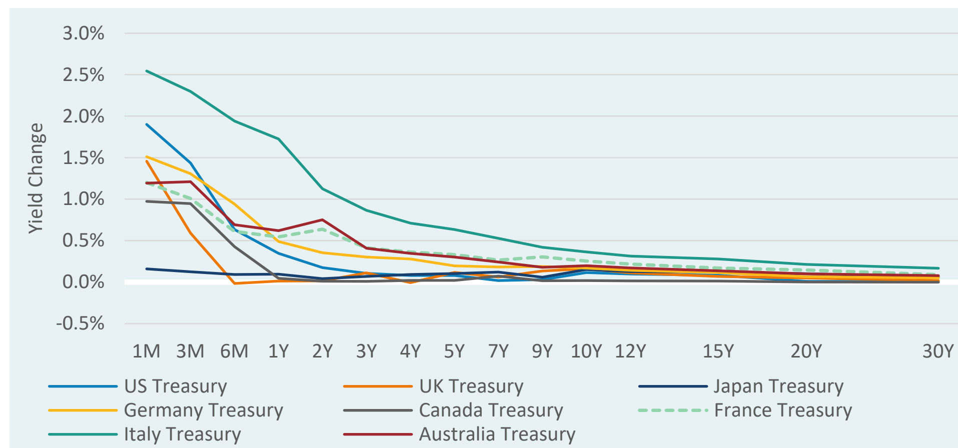
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 6/30/22

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	(8.3)	(16.1)	(20.0)	(10.6)	10.6	11.3	13.0
S&P 500 Equal Weighted	(9.4)	(14.4)	(16.7)	(9.4)	9.7	9.9	12.7
DJ Industrial Average	(6.6)	(10.8)	(14.4)	(9.1)	7.2	10.0	11.7
Russell Top 200	(7.8)	(16.6)	(20.7)	(11.5)	11.5	12.2	13.4
Russell 1000	(8.4)	(16.7)	(20.9)	(13.0)	10.2	11.0	12.8
Russell 2000	(8.2)	(17.2)	(23.4)	(25.2)	4.2	5.2	9.4
Russell 3000	(8.4)	(16.7)	(21.1)	(13.9)	9.8	10.6	12.6
Russell Mid Cap	(10.0)	(16.8)	(21.6)	(17.3)	6.6	8.0	11.3
Style Index							
Russell 1000 Growth	(7.9)	(20.9)	(28.1)	(18.8)	12.6	14.3	14.8
Russell 1000 Value	(8.7)	(12.2)	(12.9)	(6.8)	6.9	7.2	10.5
Russell 2000 Growth	(6.2)	(19.3)	(29.5)	(33.4)	1.4	4.8	9.3
Russell 2000 Value	(9.9)	(15.3)	(17.3)	(16.3)	6.2	4.9	9.1

INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
MSCI ACWI	(8.4)	(15.7)	(20.2)	(15.8)	6.2	7.0	8.8
MSCI ACWI ex US	(8.6)	(13.7)	(18.4)	(19.4)	1.4	2.5	4.8
MSCI EAFE	(9.3)	(14.5)	(19.6)	(17.8)	1.1	2.2	5.4
MSCI EM	(6.6)	(11.4)	(17.6)	(25.3)	0.6	2.2	3.1
MSCI EAFE Small Cap	(11.0)	(17.7)	(24.7)	(24.0)	1.1	1.7	7.2
Style Index							
MSCI EAFE Growth	(8.6)	(16.9)	(26.8)	(23.8)	1.3	3.5	6.3
MSCI EAFE Value	(10.0)	(12.4)	(12.1)	(11.9)	0.2	0.5	4.2
Regional Index							
MSCI UK	(8.6)	(10.5)	(8.8)	(4.0)	1.2	2.2	3.7
MSCI Japan	(7.9)	(14.6)	(20.3)	(19.9)	1.0	1.8	5.6
MSCI Euro	(11.3)	(15.8)	(25.2)	(23.8)	(1.1)	0.4	5.3
MSCI EM Asia	(4.8)	(9.3)	(17.2)	(25.9)	3.1	3.4	5.5
MSCI EM Latin American	(17.0)	(21.9)	(0.6)	(16.1)	(6.3)	(0.6)	(2.2)

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
Bloomberg US TIPS	(3.2)	(6.1)	(8.9)	(5.1)	3.0	3.2	1.7
Bloomberg US Treasury Bills	(0.0)	0.1	0.0	0.0	0.6	1.1	0.6
Bloomberg US Agg Bond	(1.6)	(4.7)	(10.3)	(10.3)	(0.9)	0.9	1.5
Bloomberg US Universal	(2.0)	(5.1)	(10.9)	(10.9)	(0.9)	0.9	1.8
Duration							
Bloomberg US Treasury 1-3 Yr	(0.6)	(0.5)	(3.0)	(3.5)	0.2	0.9	0.8
Bloomberg US Treasury Long	(1.5)	(11.9)	(21.3)	(18.5)	(2.9)	0.5	1.6
Bloomberg US Treasury	(0.9)	(3.8)	(9.1)	(8.9)	(0.9)	0.7	1.0
Issuer							
Bloomberg US MBS	(1.6)	(4.0)	(8.8)	(9.0)	(1.4)	0.4	1.2
Bloomberg US Corp. High Yield	(6.7)	(9.8)	(14.2)	(12.8)	0.2	2.1	4.5
Bloomberg US Agency Interm	(0.6)	(1.3)	(5.0)	(5.6)	(0.3)	0.8	0.9
Bloomberg US Credit	(2.6)	(6.9)	(13.8)	(13.6)	(1.0)	1.2	2.5

OTHER

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Index							
Bloomberg Commodity	(10.8)	(5.7)	18.4	24.3	14.3	8.4	(0.8)
Wilshire US REIT	(7.3)	(5.4)	(14.9)	4.4	7.4	7.5	8.8
CS Leveraged Loans	(2.1)	(4.4)	(4.4)	(2.7)	2.0	3.0	3.9
S&P Global Infrastructure	(7.7)	(7.4)	(0.5)	5.6	3.5	4.8	7.2
Alerian MLP	(14.0)	(7.4)	10.1	4.1	(1.2)	(1.2)	0.8
Regional Index							
JPM EMBI Global Div	(6.2)	(11.4)	(20.3)	(21.2)	(5.2)	(1.2)	2.2
JPM GBI-EM Global Div	(4.5)	(8.6)	(14.5)	(19.3)	(5.8)	(2.3)	(1.5)
Hedge Funds							
HFRI Composite	(3.1)	(4.9)	(5.9)	(5.8)	6.1	5.0	5.0
HFRI FOF Composite	(0.9)	(3.6)	(6.3)	(5.2)	4.1	3.7	3.8
Currency (Spot)							
Euro	(2.4)	(6.0)	(8.1)	(11.8)	(2.8)	(1.7)	(1.9)
Pound Sterling	(3.6)	(7.8)	(10.3)	(12.1)	(1.5)	(1.3)	(2.5)
Yen	(5.3)	(10.7)	(15.2)	(18.3)	(7.4)	(3.7)	(5.2)

Source: Morningstar, HFRI, as of 6/30/22.

— The Total Fund, net of manager fees, returned -6.3% in the second quarter of 2022 and ranked in the 13th percentile among other public plans greater than $1 billion (median of -9.1%). It beat the policy index return of –7.2%. The Total Fund ex Overlay returned -6.1% for the quarter. The Total Fund one-year return of -4.4% matched the policy index return of -4.4% and ranked in the 22nd percentile of its peer universe. The three-year return of 5.9% (57th percentile) lagged the median large public plan (6.3%) and the policy index (6.3%).

— Second quarter results were enhanced by the following factors:

1. PanAgora Low Volatility and Acadian US Managed Vol outperformed the Russell 1000 losing -6.6% and -10.8% respectively vs the Russell 1000 which lost -16.7%. The low volatility strategies performed as designed, providing protection during a drawdown environment.

2. PGIM Quant Solutions (formerly QMA) continues to beat the Russell 2000 losing -15.1% vs. -17.2%. The strength of the value factor continues to contribute to outperformance leading to a 1-year outperformance of 10%.

3. Mondrian beat the MSCI ACWI ex US Value (-9.8% vs -11.7%.) Mondrian's deep value positioning paid off during the quarter.

— Second quarter results were hindered by the following factors:

1. Baillie Gifford lost -18.8% trailing the MSCI ACWI ex US Growth which lost -15.6. The current market environment where growth stocks are out of favor, high inflation and central banks raising rates is causing Baillie Gifford's growth strategy to be out of favor. The manager considers this to be a short term period, and still focuses on long-term growth.

	3 Mo (%)	Rank*	YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Total Fund**	**-6.3**	**13**	**-8.0**	**10**	**-4.4**	**22**	**9.0**	**50**	**5.9**	**57**	**5.9**	**63**	**7.6**	**49**
Policy Index[1]	*-7.2*	*28*	*-8.8*	*13*	*-4.4*	*25*	*8.6*	*54*	*6.3*	*50*	*6.7*	*46*	*7.9*	*44*
InvMetrics Public DB > $1B Net Median	*-9.1*		*-12.0*		*-7.6*		*9.0*		*6.3*		*6.3*		*7.6*	
Total Fund ex Overlay	**-6.1**	**7**	**-7.8**	**8**	**-4.2**	**20**	**9.1**	**48**	**6.0**	**55**	**5.9**	**64**	**7.6**	**52**
Policy Index[1]	*-7.2*	*28*	*-8.8*	*13*	*-4.4*	*25*	*8.6*	*54*	*6.3*	*50*	*6.7*	*46*	*7.9*	*44*
InvMetrics Public DB > $1B Net Median	*-9.1*		*-12.0*		*-7.6*		*9.0*		*6.3*		*6.3*		*7.6*	
Public Equity	**-12.7**	**8**	**-17.7**	**14**	**-14.2**	**50**	**8.7**	**79**	**5.9**	**85**	**6.7**	**83**	**9.3**	**76**
Blended Public Equity Index[1]	*-14.2*	*28*	*-18.6*	*30*	*-14.5*	*56*	*9.3*	*73*	*6.8*	*49*	*7.4*	*66*	*9.7*	*67*
InvMetrics All DB Total Eq Net Median	*-14.7*		*-19.0*		*-14.2*		*9.9*		*6.8*		*7.8*		*10.1*	
US Equity	**-13.6**	**6**	**-16.9**	**5**	**-9.3**	**4**	**12.1**	**45**	**8.8**	**59**	**9.7**	**51**	**11.9**	**39**
Blended US Equity Index[1]	*-16.7*	*78*	*-21.1*	*66*	*-13.9*	*56*	*11.4*	*62*	*9.8*	*13*	*10.6*	*14*	*12.5*	*15*
Russell 3000	*-16.7*	*78*	*-21.1*	*66*	*-13.9*	*56*	*11.4*	*62*	*9.8*	*13*	*10.6*	*14*	*12.6*	*12*
InvMetrics All DB US Eq Net Median	*-15.9*		*-20.5*		*-13.5*		*12.0*		*8.9*		*9.7*		*11.7*	
Large Cap Equity	**-13.5**	**43**	**-16.9**	**43**	**-8.7**	**41**	**11.8**	**51**	**9.0**	**45**	**10.4**	**41**	**12.6**	**31**
Russell 1000	*-16.7*	*70*	*-20.9*	*64*	*-13.0*	*62*	*11.5*	*52*	*10.2*	*29*	*11.0*	*33*	*12.8*	*26*
eV US Large Cap Equity Net Median	*-14.4*		*-18.5*		*-10.7*		*11.8*		*8.8*		*9.7*		*11.7*	
Acadian US MGD V	-10.8	14	-15.5	20	-6.3	20	9.0	79	5.0	97	--	--	--	--
BlackRock Russell 1000	-16.7	87	-21.0	74	-13.1	71	11.5	48	10.2	30	11.0	29	--	--
DE Shaw	-17.0	90	-19.2	54	-11.7	57	11.6	47	9.1	48	10.2	48	12.9	15
PanAgora Defuseq	-6.6	2	-7.3	3	0.7	3	13.3	21	7.7	76	--	--	--	--
Russell 1000	*-16.7*	*87*	*-20.9*	*73*	*-13.0*	*70*	*11.5*	*48*	*10.2*	*30*	*11.0*	*29*	*12.8*	*18*
eV US Large Cap Core Equity Net Median	*-14.8*		*-19.1*		*-10.8*		*11.4*		*9.0*		*10.1*		*11.9*	

* *Total Fund and asset class aggregates are ranked in InvMetrics universes. Managers are ranked in eVest (eA) manager universes.*

** *Includes Parametric Minneapolis manager funded in August 2013.*

1. See Appendix for Benchmark History.

	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Small Cap Equity	**-15.1**	**47**	**-18.7**	**38**	**-15.2**	**43**	**15.7**	**44**	**4.5**	**71**	**3.9**	**87**	**8.0**	**90**
Russell 2000	*-17.2*	*68*	*-23.4*	*64*	*-25.2*	*75*	*10.1*	*70*	*4.2*	*74*	*5.2*	*72*	*9.4*	*71*
eV US Small Cap Equity Net Median	*-15.4*		*-20.5*		*-17.4*		*14.3*		*6.2*		*6.7*		*10.4*	
PGIM Quant Solutions	-15.1	45	-18.7	22	-15.2	32	15.7	35	4.5	78	3.9	90	--	--
Russell 2000	*-17.2*	*77*	*-23.4*	*71*	*-25.2*	*91*	*10.1*	*85*	*4.2*	*82*	*5.2*	*76*	*9.4*	*73*
eV US Small Cap Core Equity Net Median	*-15.5*		*-21.1*		*-17.8*		*14.0*		*6.4*		*6.9*		*10.3*	
Domestic Equity Overlay	-12.9	--	71.6	--	68.8	--	62.4	--	--	--	--	--	--	--
International Equity	**-11.7**	**9**	**-18.5**	**37**	**-19.5**	**42**	**5.0**	**50**	**2.7**	**24**	**3.2**	**16**	**5.6**	**30**
Blended International Equity Index[1]	*-11.4*	*6*	*-15.7*	*7*	*-15.3*	*8*	*6.7*	*13*	*3.3*	*15*	*3.6*	*10*	*5.8*	*24*
MSCI EAFE Gross	*-14.3*	*79*	*-19.3*	*46*	*-17.3*	*10*	*4.8*	*54*	*1.5*	*56*	*2.7*	*32*	*5.9*	*20*
InvMetrics All DB ex-US Eq Net Median	*-13.3*		*-19.6*		*-20.1*		*4.9*		*1.8*		*2.4*		*5.3*	
Baillie Gifford	-18.8	67	-33.6	77	-35.5	86	-4.4	78	0.9	70	2.5	67	6.4	53
MSCI ACWI ex US[1]	*-13.5*	*17*	*-18.2*	*7*	*-19.0*	*12*	*5.1*	*18*	*1.8*	*57*	*3.0*	*62*	*6.0*	*69*
MSCI ACWI ex US Growth[1]	*-15.6*	*30*	*-24.6*	*32*	*-25.6*	*41*	*-0.1*	*54*	*1.9*	*56*	*3.8*	*56*	*6.7*	*46*
eV ACWI ex-US Growth Equity Net Median	*-17.1*		*-28.7*		*-27.7*		*0.4*		*2.2*		*4.1*		*6.5*	
Mondrian	-9.8	18	-12.1	15	-15.3	30	7.7	64	0.4	73	1.4	55	4.2	85
MSCI ACWI ex USA Value Gross	*-11.7*	*37*	*-11.4*	*14*	*-12.1*	*8*	*10.2*	*41*	*1.2*	*66*	*1.9*	*33*	*4.4*	*80*
MSCI ACWI ex USA Gross	*-13.5*	*75*	*-18.2*	*83*	*-19.0*	*74*	*5.1*	*93*	*1.8*	*52*	*3.0*	*24*	*5.3*	*51*
eV ACWI ex-US Value Equity Net Median	*-12.3*		*-15.3*		*-16.9*		*9.6*		*1.9*		*1.6*		*5.3*	
BlackRock MSCI ACWI EX-US IMI	-14.1	36	-18.9	33	-19.6	39	5.1	40	--	--	--	--	--	--
MSCI ACWI ex USA IMI	*-14.3*	*40*	*-19.1*	*33*	*-19.9*	*40*	*4.9*	*44*	*1.6*	*71*	*2.5*	*68*	*5.0*	*77*
eV ACWI ex-US All Cap Core Eq Net Median	*-14.8*		*-22.5*		*-21.1*		*4.4*		*2.6*		*3.2*		*6.3*	
Int'l Equity Currency Overlay														
International Equity Overlay	-12.1	--	-16.4	--	-16.4	--	0.8	--	--	--	--	--	--	--

1. See Appendix for Benchmark History.

	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Fixed Income	**-5.1**	**61**	**-9.3**	**46**	**-8.8**	**40**	**-1.8**	**16**	**0.4**	**13**	**1.8**	**13**	**3.1**	**7**
Blended Fixed Income Index	*-5.8*	*77*	*-11.2*	*82*	*-10.7*	*73*	*-3.9*	*64*	*-0.5*	*57*	*1.3*	*40*	*1.9*	*58*
InvMetrics All DB Total Fix Inc Net Median	*-4.9*		*-9.6*		*-9.4*		*-3.4*		*-0.3*		*1.2*		*2.0*	
Core Fixed	**-4.8**	**--**	**-10.6**	**--**	**-10.9**	**--**	**-4.9**	**--**	**-0.9**	**--**	**0.8**	**--**	**2.0**	**--**
Bloomberg US Aggregate TR	*-4.7*	*--*	*-10.3*	*--*	*-10.3*	*--*	*-5.4*	*--*	*-0.9*	*--*	*0.9*	*--*	*1.5*	*--*
DoubleLine	-5.2	95	-10.8	98	-11.4	99	-5.2	97	--	--	--	--	--	--
Bloomberg US Aggregate TR	*-4.7*	*90*	*-10.3*	*97*	*-10.3*	*93*	*-5.4*	*98*	*-0.9*	*56*	*0.9*	*55*	*1.5*	*67*
eV US Securitized Fixed Inc Net Median	*-3.4*		*-8.0*		*-8.3*		*-3.1*		*-0.9*		*1.0*		*2.2*	
FIAM Bond	-5.2	76	-10.5	55	-10.3	40	-4.5	25	0.1	7	1.6	7	2.3	14
NISA Core Bond	-4.7	33	-10.1	34	-10.0	26	-5.3	59	--	--	--	--	--	--
Bloomberg US Aggregate TR	*-4.7*	*36*	*-10.3*	*45*	*-10.3*	*40*	*-5.4*	*76*	*-0.9*	*74*	*0.9*	*73*	*1.5*	*77*
eV US Core Fixed Inc Net Median	*-4.9*		*-10.5*		*-10.5*		*-5.1*		*-0.7*		*1.1*		*1.8*	
Western TRU	-3.8	13	-11.4	91	-12.4	98	-3.6	7	-1.3	92	0.2	98	--	--
3-Month Libor Total Return USD	*0.4*	*1*	*0.6*	*1*	*0.7*	*1*	*0.4*	*1*	*0.8*	*2*	*1.4*	*20*	*0.9*	*99*
Bloomberg US Aggregate TR	*-4.7*	*36*	*-10.3*	*45*	*-10.3*	*40*	*-5.4*	*76*	*-0.9*	*74*	*0.9*	*73*	*1.5*	*77*
eV US Core Fixed Inc Net Median	*-4.9*		*-10.5*		*-10.5*		*-5.1*		*-0.7*		*1.1*		*1.8*	
Core Fixed Income Overlay	-4.2	--	-6.4	--	-3.4	--	-3.7	--	--	--	--	--	--	--
Opportunistic Credit	**-5.6**	**--**	**-7.0**	**--**	**-5.1**	**--**	**4.3**	**--**	**2.6**	**--**	**3.6**	**--**	**6.5**	**--**
Bloomberg BA Intermediate HY	*-7.9*	*--*	*-12.7*	*--*	*-11.4*	*--*	*-0.6*	*--*	*0.6*	*--*	*2.3*	*--*	*3.5*	*--*
AG CSF II*+	-9.6	--	--	--	--	--	--	--	--	--	--	--	--	--
Bloomberg BA Intermediate HY	*-7.9*	*--*	*-12.7*	*--*	*-11.4*	*--*	*-0.6*	*--*	*0.6*	*--*	*2.3*	*--*	*3.5*	*--*
Angelo Gordon Opportunistic+	3.3	--	-5.5	--	11.0	--	20.5	--	7.7	--	11.7	--	--	--
Bloomberg US Aggregate TR	*-4.7*	*--*	*-10.3*	*--*	*-10.3*	*--*	*-5.4*	*--*	*-0.9*	*--*	*0.9*	*--*	*1.5*	*--*

* *Funded February 2022*
\+ *Preliminary return as of 6/30/2022.*
1. *See Appendix for Benchmark History.*

	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Angelo Gordon Credit Solutions+	-4.7	5	-3.5	3	1.8	1	17.5	1	--	--	--	--	--	--
Bloomberg BA Intermediate HY	*-7.9*	*25*	*-12.7*	*43*	*-11.4*	*43*	*-0.6*	*85*	*0.6*	*41*	*2.3*	*33*	*3.5*	*85*
eV US High Yield Fixed Inc Net Median	*-9.4*		*-13.2*		*-11.9*		*0.6*		*0.4*		*2.0*		*4.2*	
Beach Point Select	-5.8	13	-5.7	6	-0.4	2	12.5	1	8.0	1	7.2	1	--	--
Bloomberg BA Intermediate HY	*-7.9*	*25*	*-12.7*	*43*	*-11.4*	*43*	*-0.6*	*85*	*0.6*	*41*	*2.3*	*33*	*3.5*	*85*
eV US High Yield Fixed Inc Net Median	*-9.4*		*-13.2*		*-11.9*		*0.6*		*0.4*		*2.0*		*4.2*	
Brigade Capital	-6.6	17	-7.5	12	-4.5	6	10.2	1	4.0	3	3.8	4	5.0	17
Bloomberg BA Intermediate HY	*-7.9*	*25*	*-12.7*	*43*	*-11.4*	*43*	*-0.6*	*85*	*0.6*	*41*	*2.3*	*33*	*3.5*	*85*
50% Barclays HY/ 50% Bank Loan	*-7.1*	*20*	*-9.4*	*21*	*-7.8*	*20*	*2.3*	*20*	*1.1*	*27*	*2.6*	*21*	*4.2*	*52*
eV US High Yield Fixed Inc Net Median	*-9.4*		*-13.2*		*-11.9*		*0.6*		*0.4*		*2.0*		*4.2*	
PIMCO Diversified	-9.1	44	-15.6	95	-15.4	97	-4.6	99	-2.4	99	--	--	--	--
Blended PIMCO Diversified Index[1]	*-8.8*	*37*	*-14.9*	*88*	*-14.6*	*93*	*-4.2*	*99*	*-1.8*	*99*	*0.8*	*99*	*3.2*	*91*
Bloomberg BA Intermediate HY	*-7.9*	*25*	*-12.7*	*43*	*-11.4*	*43*	*-0.6*	*85*	*0.6*	*41*	*2.3*	*33*	*3.5*	*85*
eV US High Yield Fixed Inc Net Median	*-9.4*		*-13.2*		*-11.9*		*0.6*		*0.4*		*2.0*		*4.2*	
Franklin Templeton	-11.9	90	-12.1	33	-14.6	53	-8.2	93	-8.0	99	-4.3	99	0.1	79
Bloomberg Multiverse TR	*-8.4*	*45*	*-14.0*	*52*	*-15.4*	*60*	*-6.5*	*80*	*-3.2*	*80*	*-0.5*	*74*	*0.3*	*77*
eV All Global Fixed Inc Net Median	*-8.8*		*-13.9*		*-14.2*		*-3.6*		*-1.3*		*0.8*		*2.2*	
Private Credit	**0.1**	**--**	**1.3**	**--**	**4.1**	**--**	**7.3**	**--**	**6.5**	**--**	**6.8**	**--**	**--**	**--**
Cliffwater Direct Lending Index+	*1.8*	--	*3.5*	--	*8.8*	--	*12.0*	--	*8.5*	--	*8.6*	--	*9.4*	--
Blackrock DL Feeder IX-U+	0.3	1	1.1	1	4.8	1	6.7	5	--	--	--	--	--	--
Cliffwater Direct Lending Index	*1.8*	*1*	*3.5*	*1*	*8.8*	*1*	*12.0*	*1*	*8.5*	*1*	*8.6*	*1*	*9.4*	*1*
eV US High Yield Fixed Inc Net Median	*-9.4*		*-13.2*		*-11.9*		*0.6*		*0.4*		*2.0*		*4.2*	
PIMCO Private Income+	0.0	1	1.3	1	4.8	1	11.9	1	9.1	1	--	--	--	--
Bloomberg BA Intermediate HY	*-7.9*	*25*	*-12.7*	*43*	*-11.4*	*43*	*-0.6*	*85*	*0.6*	*41*	*2.3*	*33*	*3.5*	*85*
Cliffwater Direct Lending Index	*1.8*	*1*	*3.5*	*1*	*8.8*	*1*	*12.0*	*1*	*8.5*	*1*	*8.6*	*1*	*9.4*	*1*
eV US High Yield Fixed Inc Net Median	*-9.4*		*-13.2*		*-11.9*		*0.6*		*0.4*		*2.0*		*4.2*	

+ *Preliminary return as of 6/30/2022.*

1. *See Appendix for Benchmark History.*

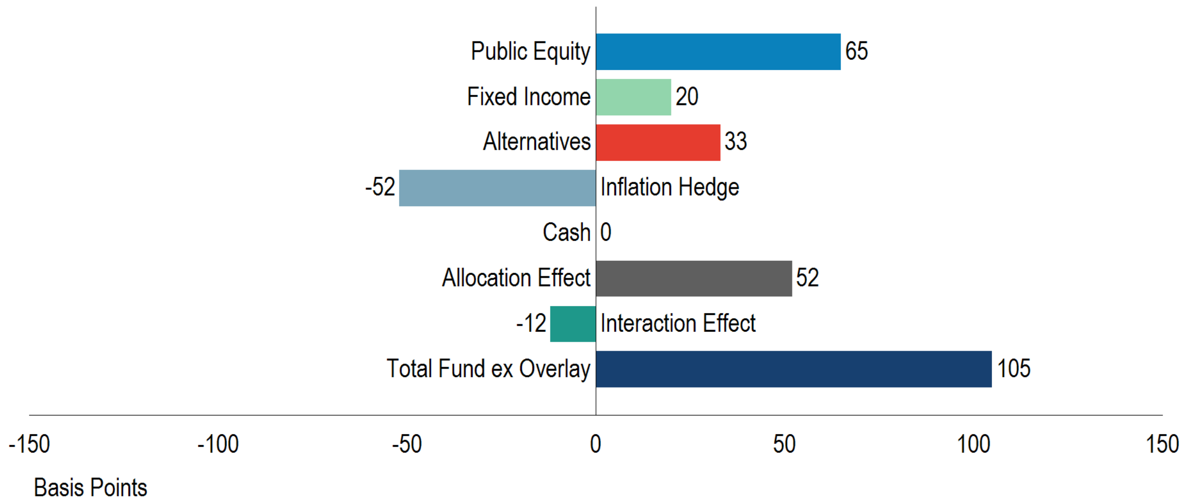
	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
TCP Direct Lending VIII+	-0.1	1	0.4	1	3.9	1	6.4	5	5.5	2	6.2	1	--	--
White Oak Yield+	0.0	1	1.7	1	4.2	1	5.3	6	5.3	2	5.7	2	--	--
White Oak YSF V+	0.0	1	1.5	1	2.6	1	--	--	--	--	--	--	--	--
Cliffwater Direct Lending Index	*1.8*	*1*	*3.5*	*1*	*8.8*	*1*	*12.0*	*1*	*8.5*	*1*	*8.6*	*1*	*9.4*	*1*
eV US High Yield Fixed Inc Net Median	*-9.4*		*-13.2*		*-11.9*		*0.6*		*0.4*		*2.0*		*4.2*	
Alternatives	**1.3**	**--**	**3.6**	**--**	**8.7**	**--**	**26.7**	**--**	**18.1**	**--**	**12.1**	**--**	**9.6**	**--**
Blended Alternatives Index[1]	*-1.4*	*--*	*3.7*	*--*	*9.3*	*--*	*19.6*	*--*	*12.6*	*--*	*11.5*	*--*	*10.1*	*--*
Private Equity+ ** ++	**-4.0**	**99**	**-1.8**	**89**	**7.9**	**64**	**41.8**	**10**	**33.0**	**6**	**24.2**	**13**	**19.6**	**1**
Blended Private Equity Index[1]	*-4.2*	*99*	*5.4*	*18*	*14.9*	*43*	*37.9*	*15*	*21.3*	*55*	*17.8*	*53*	*17.7*	*23*
InvMetrics All DB Private Eq Net Median	*-0.2*		*1.2*		*12.2*		*25.9*		*22.5*		*19.1*		*14.8*	
Hedge Fund/Absolute Return	**6.8**	**6**	**9.2**	**1**	**8.9**	**2**	**8.4**	**51**	**0.9**	**81**	**-1.4**	**87**	**2.3**	**81**
Absolute Return Custom Index[1]	*1.0*	*10*	*2.1*	*8*	*4.2*	*5*	*4.1*	*93*	*4.6*	*59*	*5.1*	*31*	*4.7*	*54*
InvMetrics All DB Hedge Funds Net Median	*-5.4*		*-9.2*		*-4.8*		*8.4*		*5.0*		*4.5*		*4.9*	
Aberdeen Standard GARS	-2.1	41	-7.1	62	-8.0	67	-1.3	90	0.1	82	0.5	79	--	--
Acadian MAAR Fund LLC	3.0	18	0.5	34	0.9	40	--	--	--	--	--	--	--	--
CFM Systematic Global Macro	12.3	3	15.5	9	10.1	20	--	--	--	--	--	--	--	--
Graham Quant Macro	8.7	5	22.9	5	16.7	14	13.4	28	--	--	--	--	--	--
PIMCO MAARS Fund LP	8.3	6	11.0	12	22.4	10	11.3	38	--	--	--	--	--	--
Absolute Return Custom Index	*1.0*	*26*	*2.1*	*28*	*4.2*	*33*	*4.1*	*68*	*4.6*	*49*	*5.1*	*43*	*4.7*	*53*
eV Alt All Multi-Strategy Median	*-4.0*		*-3.9*		*-2.6*		*7.8*		*4.4*		*4.3*		*4.9*	

+ Preliminary return as of 6/30/2022.
*** Returns are one-quarter lag.*
++ Excludes EnCap Energy Capital Fund and Sheridan Production Partners.
1. See Appendix for Benchmark History.

	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Inflation Hedge	**-0.1**	**--**	**8.1**	**--**	**16.9**	**--**	**16.7**	**--**	**6.8**	**--**	**5.9**	**--**	**--**	**--**
Blended Inflation Hedge Index[1]	*3.1*	--	*11.5*	--	*23.2*	--	*22.0*	--	*11.6*	--	*9.4*	--	--	--
Real Estate	**3.9**	**44**	**9.0**	**60**	**20.4**	**60**	**13.8**	**62**	**9.9**	**60**	**8.9**	**55**	**10.3**	**15**
NCREIF ODCE	*4.8*	*20*	*12.5*	*5*	*29.5*	*2*	*18.3*	*5*	*12.7*	*6*	*10.5*	*3*	*11.2*	*4*
InvMetrics All DB Real Estate Pub Net Median	*3.5*		*9.8*		*22.3*		*14.3*		*10.3*		*9.0*		*9.5*	
Harrison Street Core Property	6.2	--	8.8	--	14.6	--	10.6	--	--	--	--	--	--	--
Invesco	4.8	--	11.6	--	26.9	--	16.8	--	11.3	--	9.7	--	10.7	--
NCREIF ODCE	*4.8*	--	*12.5*	--	*29.5*	--	*18.3*	--	*12.7*	--	*10.5*	--	*11.2*	--
Invesco US Val IV	-5.5	--	-5.3	--	2.2	--	6.5	--	5.8	--	8.2	--	--	--
Invesco US Val V	0.6	--	3.9	--	18.6	--	19.3	--	13.3	--	--	--	--	--
NCREIF ODCE	*4.8*	--	*12.5*	--	*29.5*	--	*18.3*	--	*12.7*	--	*10.5*	--	*11.2*	--
NCREIF ODCE + 2%	*5.3*	--	*13.6*	--	*32.0*	--	*20.6*	--	*14.9*	--	*12.7*	--	*13.4*	--
PGIM RE US Debt Fund	1.2	--	2.6	--	5.2	--	5.3	--	5.2	--	--	--	--	--
Stockbridge Value IV+	0.0	--	8.0	--	20.3	--	--	--	--	--	--	--	--	--
NCREIF ODCE	*4.8*	--	*12.5*	--	*29.5*	--	*18.3*	--	*12.7*	--	*10.5*	--	*11.2*	--
Private Real Asset**	**6.0**	**--**	**14.8**	**--**	**24.6**	**--**	**26.1**	**--**	**13.4**	**--**	**5.3**	**--**	**--**	**--**
Blended Private Real Asset Index[1]	*11.2*	--	*17.6*	--	*22.7*	--	*35.0*	--	*11.5*	--	*9.0*	--	--	--
Blended Secondary CA Private RA Index[1]	*7.4*	--	*13.8*	--	*25.0*	--	*21.5*	--	*8.4*	--	*8.0*	--	--	--
Public Real Assets	**-8.5**	**--**	**2.8**	**--**	**8.6**	**--**	**18.5**	**--**	**1.6**	**--**	**2.7**	**--**	**--**	**--**
Blended Public Real Asset Index[1]	*-8.4*	--	*2.6*	--	*8.5*	--	*18.4*	--	*5.9*	--	*5.7*	--	--	--
SSgA Custom Real Asset	-8.5	--	2.8	--	8.6	--	18.5	--	5.9	--	5.8	--	--	--
SSgA Custom Real Asset Index[1]	*-8.4*	--	*2.6*	--	*8.5*	--	*18.4*	--	*5.9*	--	*5.7*	--	--	--

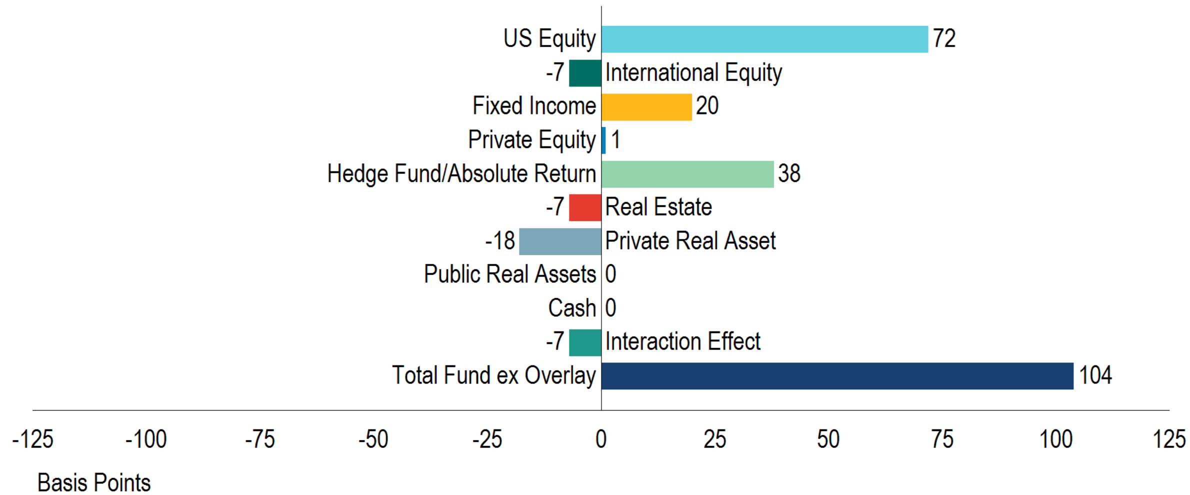
+ *Preliminary return as of 6/30/2022.*
** *Returns are one-quarter lag.*
1. See Appendix for Benchmark History.

	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	2 Yrs (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank
Cash	**0.2**	**--**	**0.3**	**--**	**0.4**	**--**	**0.4**	**--**	**0.6**	**--**	**0.8**	**--**	**0.8**	**--**
91 Day T-Bills	*0.1*	--	*0.1*	--	*0.2*	--	*0.1*	--	*0.5*	--	*1.0*	--	*0.6*	--
General Account	0.2	--	0.3	--	0.5	--	0.5	--	1.0	--	2.2	--	1.5	--
Treasury & LAIF	0.4	--	0.5	--	1.1	--	1.2	--	1.5	--	2.3	--	1.6	--
91 Day T-Bills	*0.1*	--	*0.1*	--	*0.2*	--	*0.1*	--	*0.5*	--	*1.0*	--	*0.6*	--
Currency Hedge Cash Overlay	0.1	--	0.0	--	-0.1	--	-0.2	--	--	--	--	--	--	--



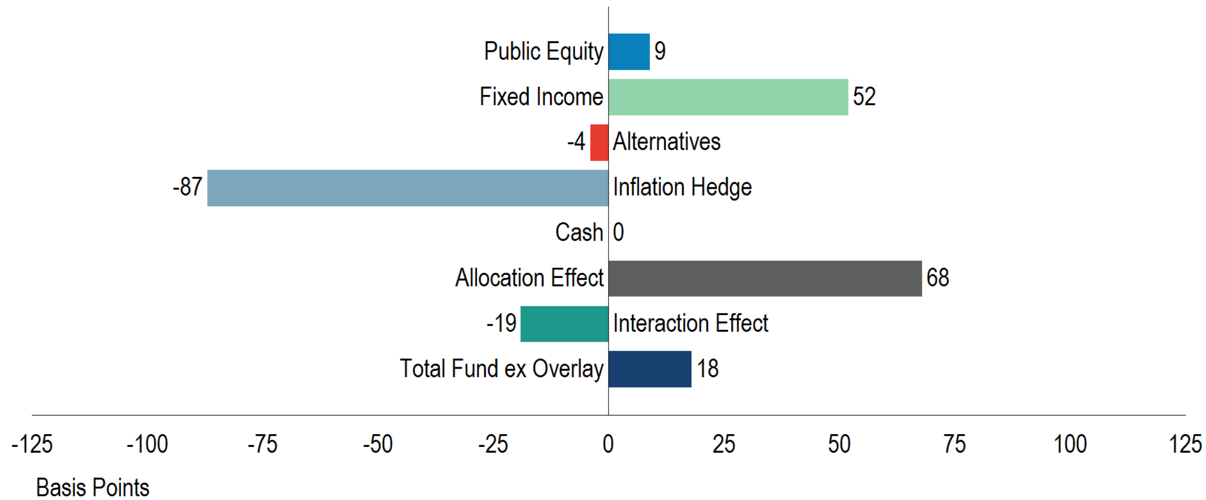
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction * Effects	Total Effects
Public Equity	-12.74%	-14.25%	1.50%	0.65%	0.14%	-0.03%	0.76%
Fixed Income	-5.08%	-5.82%	0.75%	0.20%	-0.05%	-0.03%	0.12%
Alternatives	1.28%	-1.36%	2.64%	0.33%	0.06%	0.02%	0.41%
Inflation Hedge	-0.14%	3.14%	-3.28%	-0.52%	0.19%	-0.08%	-0.41%
Cash	0.21%	0.11%	0.11%	0.00%	0.17%	0.00%	0.17%
Total	**-6.18%**	**-7.23%**	**1.05%**	**0.65%**	**0.52%**	**-0.12%**	**1.05%**

Attribution does not include the impact of the Parametric Minneapolis strategy.
** Interaction Effects include Residual Effects.*



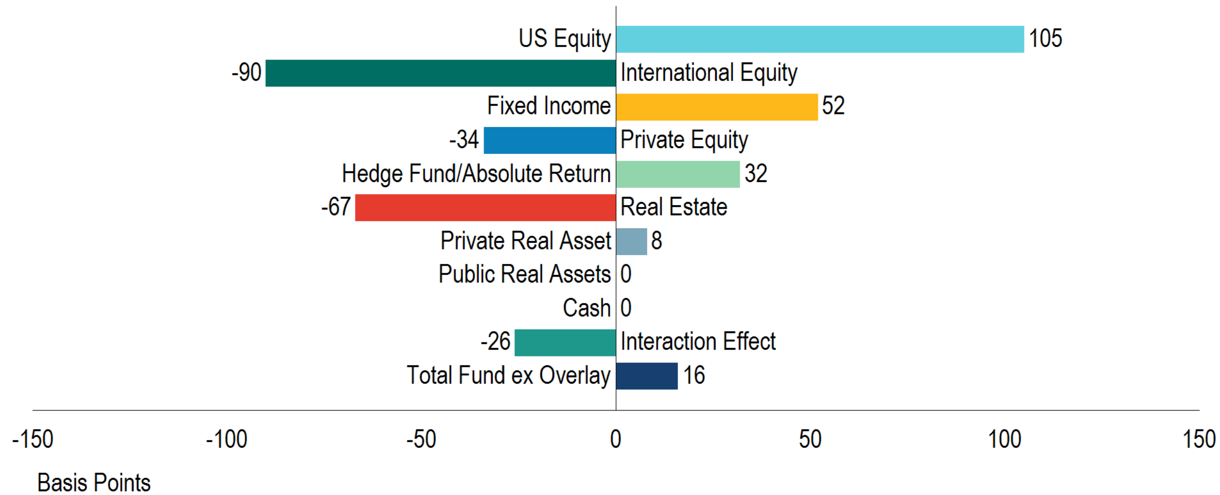
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction * Effects	Total Effects
US Equity	-13.60%	-16.70%	3.10%	0.72%	0.05%	-0.02%	0.76%
International Equity	-11.71%	-11.38%	-0.34%	-0.07%	0.07%	0.00%	0.00%
Fixed Income	-5.08%	-5.82%	0.75%	0.20%	-0.05%	-0.03%	0.12%
Private Equity	-3.98%	-4.21%	0.23%	0.01%	0.03%	0.00%	0.04%
Hedge Fund/Absolute Return	6.78%	1.05%	5.73%	0.38%	0.00%	0.00%	0.39%
Real Estate	3.91%	4.77%	-0.86%	-0.07%	-0.05%	0.00%	-0.12%
Private Real Asset	6.04%	11.18%	-5.13%	-0.18%	-0.09%	-0.03%	-0.30%
Public Real Assets	-8.48%	-8.44%	-0.04%	0.00%	-0.02%	0.00%	-0.02%
Cash	0.21%	0.11%	0.11%	0.00%	0.17%	0.00%	0.17%
Total	**-6.19%**	**-7.23%**	**1.04%**	**0.99%**	**0.12%**	**-0.07%**	**1.04%**

Attribution does not include the impact of the Parametric Minneapolis strategy.
** Interaction Effects include Residual Effects.*



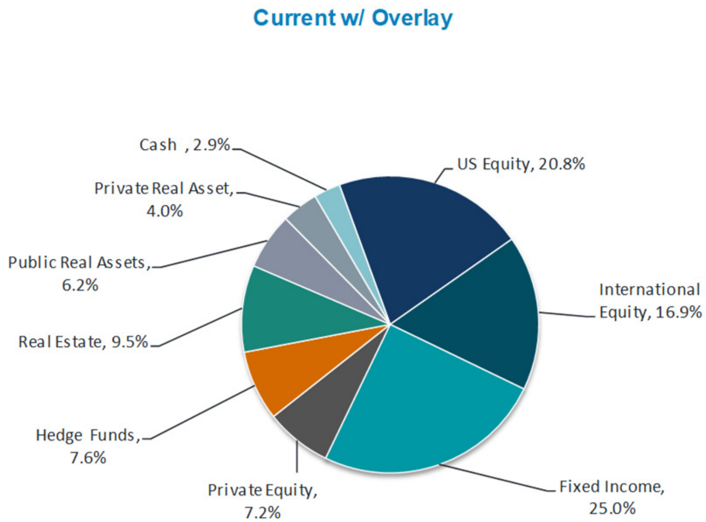
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction * Effects	Total Effects
Public Equity	-14.23%	-14.47%	0.24%	0.09%	0.11%	-0.03%	0.17%
Fixed Income	-8.84%	-10.66%	1.81%	0.52%	0.15%	-0.06%	0.61%
Alternatives	8.65%	9.26%	-0.61%	-0.04%	0.10%	-0.01%	0.04%
Inflation Hedge	16.90%	23.18%	-6.28%	-0.87%	0.19%	-0.09%	-0.77%
Cash	0.39%	0.17%	0.22%	0.00%	0.13%	0.01%	0.14%
Total	**-4.27%**	**-4.45%**	**0.18%**	**-0.31%**	**0.68%**	**-0.19%**	**0.18%**

Attribution does not include the impact of the Parametric Minneapolis strategy.
** Interaction Effects include Residual Effects.*

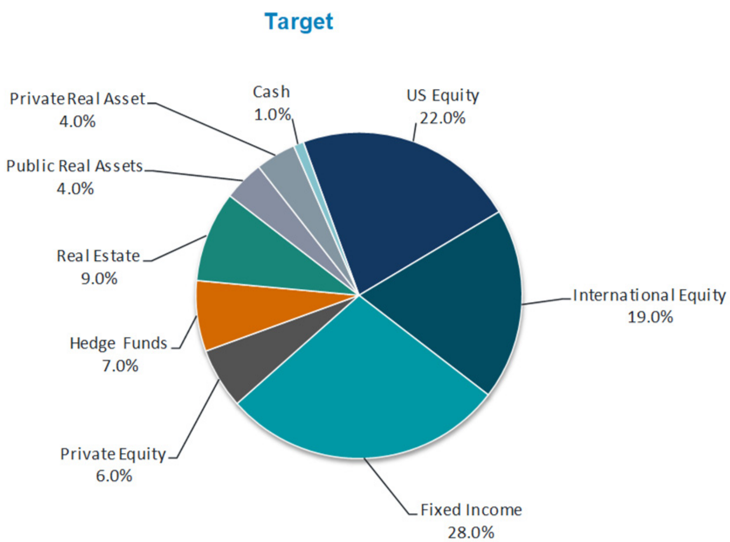


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction * Effects	Total Effects
US Equity	-9.26%	-13.87%	4.61%	1.05%	0.02%	-0.03%	1.04%
International Equity	-19.51%	-15.35%	-4.16%	-0.90%	0.04%	0.00%	-0.87%
Fixed Income	-8.84%	-10.66%	1.81%	0.52%	0.15%	-0.06%	0.61%
Private Equity	7.94%	14.92%	-6.99%	-0.34%	0.15%	-0.08%	-0.26%
Hedge Fund/Absolute Return	8.89%	4.23%	4.66%	0.32%	0.00%	0.00%	0.32%
Real Estate	20.43%	29.51%	-9.08%	-0.67%	-0.29%	0.08%	-0.87%
Private Real Asset	24.57%	22.72%	1.85%	0.08%	-0.21%	-0.18%	-0.31%
Public Real Assets	8.56%	8.46%	0.10%	0.00%	0.36%	0.00%	0.37%
Cash	0.39%	0.17%	0.22%	0.00%	0.13%	0.01%	0.14%
Total	**-4.29%**	**-4.45%**	**0.16%**	**0.06%**	**0.36%**	**-0.26%**	**0.16%**

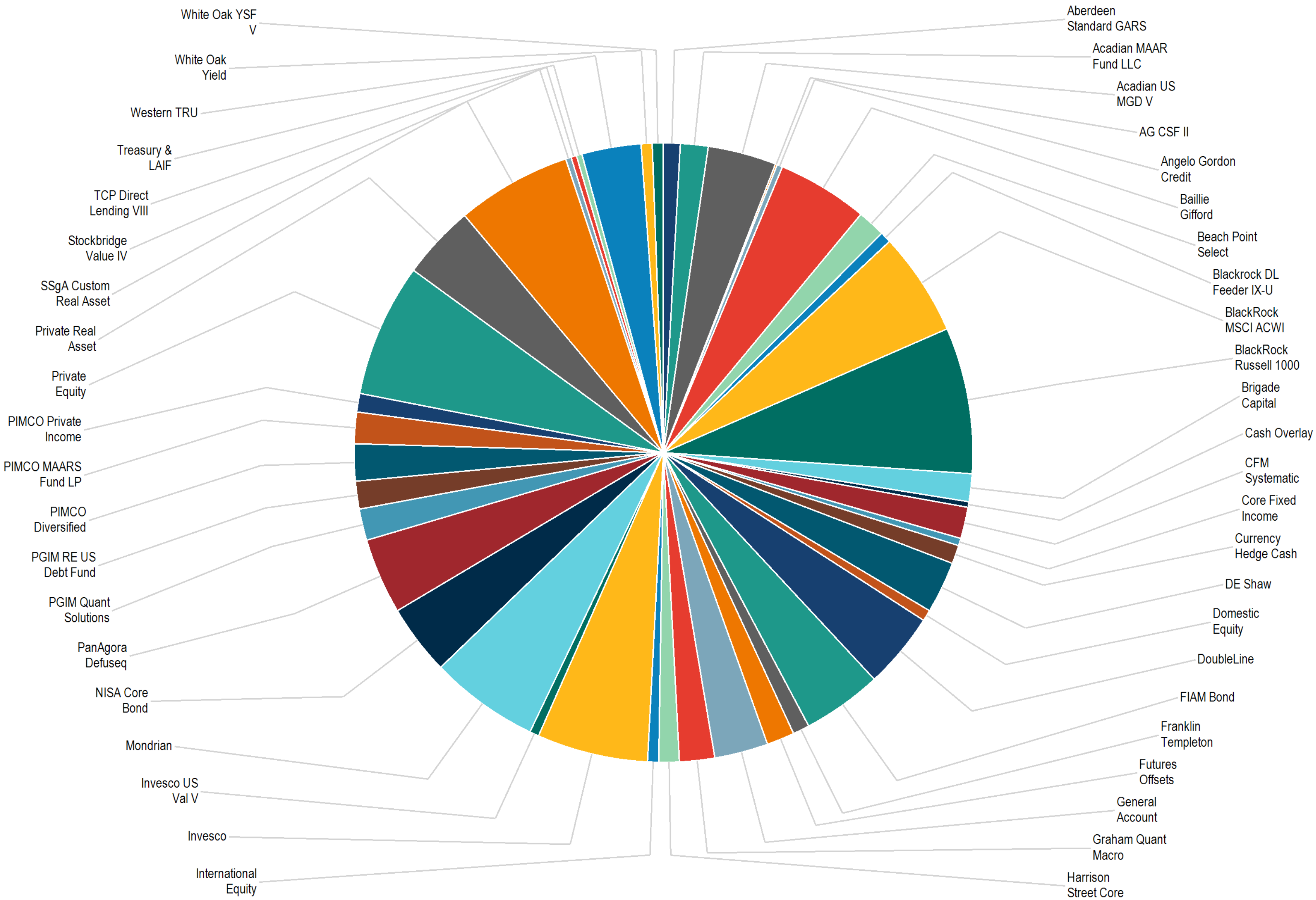
Attribution does not include the impact of the Parametric Minneapolis strategy.
** Interaction Effects include Residual Effects.*



ASSET ALLOCATION	MARKET VALUE W/ OVERLAY	W/ OVERLAY	W/O OVERLAY
US Equity	1,180,250,108	20.8%	20.2%
International Equity	957,284,863	16.9%	16.3%
Fixed Income	1,416,305,299	25.0%	24.6%
Private Equity	408,182,534	7.2%	7.2%
Hedge Funds	432,733,830	7.6%	7.6%
Real Estate	535,986,624	9.5%	9.5%
Public Real Assets	348,874,790	6.2%	6.2%
Private Real Asset	224,961,495	4.0%	4.0%
Cash	162,552,894	2.9%	4.4%
TOTAL	**5,667,132,437**	**100.0%**	**100.0%**



ASSET ALLOCATION	W/ OVERLAY	TARGET	DIFF
US Equity	20.8%	22.0%	-1.2%
International Equity	16.9%	19.0%	-2.1%
Fixed Income	25.0%	28.0%	-3.0%
Private Equity	7.2%	6.0%	1.2%
Hedge Funds	7.6%	7.0%	0.6%
Real Estate	9.5%	9.0%	0.5%
Public Real Assets	6.2%	4.0%	2.2%
Private Real Asset	4.0%	4.0%	0.0%
Cash	2.9%	1.0%	1.9%
TOTAL	**100.0%**	**100.0%**	**0.0%**


White Oak YSF V
White Oak Yield
Western TRU
Treasury & LAIF
TCP Direct Lending VIII
Stockbridge Value IV
SSgA Custom Real Asset
Private Real Asset
Private Equity
PIMCO Private Income
PIMCO MAARS Fund LP
PIMCO Diversified
PGIM RE US Debt Fund
PGIM Quant Solutions
PanAgora Defuseq
NISA Core Bond
Mondrian
Invesco US Val V
Invesco
International Equity
Aberdeen Standard GARS
Acadian MAAR Fund LLC
Acadian US MGD V
AG CSF II
Angelo Gordon Credit
Baillie Gifford
Beach Point Select
Blackrock DL Feeder IX-U
BlackRock MSCI ACWI
BlackRock Russell 1000
Brigade Capital
Cash Overlay
CFM Systematic
Core Fixed Income
Currency Hedge Cash
DE Shaw
Domestic Equity
DoubleLine
FIAM Bond
Franklin Templeton
Futures Offsets
General Account
Graham Quant Macro
Harrison Street Core

Name	Market Value	% of Portfolio
Acadian US MGD V	$210,268,464	3.7%
BlackRock Russell 1000	$446,756,472	7.9%
DE Shaw	$158,358,314	2.8%
PanAgora Defuseq	$234,181,224	4.1%
PGIM Quant Solutions	$97,738,184	1.7%
Domestic Equity Overlay	$32,947,450	0.6%
Baillie Gifford	$275,951,848	4.9%
Mondrian	$334,254,860	5.9%
BlackRock MSCI ACWI EX-US IMI	$315,409,645	5.6%
International Equity Overlay	$31,668,510	0.6%
DoubleLine	$231,879,985	4.1%
FIAM Bond	$241,742,771	4.3%
NISA Core Bond	$214,102,329	3.8%
Western TRU	$181,747,537	3.2%
Core Fixed Income Overlay	$21,968,734	0.4%
AG CSF Annex Dislocation Fund	$360	0.0%
AG CSF II	$6,382,449	0.1%
Angelo Gordon Opportunistic	$591,165	0.0%
Angelo Gordon Credit Solutions	$15,091,917	0.3%
Beach Point Select	$82,863,307	1.5%
Brigade Capital	$83,344,120	1.5%
PIMCO Diversified	$113,829,436	2.0%
Franklin Templeton	$52,698,572	0.9%
Blackrock DL Feeder IX-U	$35,845,149	0.6%
PIMCO Private Income	$54,026,389	1.0%
TCP Direct Lending VIII	$16,842,515	0.3%
White Oak Yield	$32,143,903	0.6%
White Oak YSF V	$31,204,662	0.6%
Private Equity	$408,182,534	7.2%

Name	Market Value	% of Portfolio
Aberdeen Standard GARS	$49,095,019	0.9%
Acadian MAAR Fund LLC	$82,593,530	1.5%
CFM Systematic Global Macro	$97,221,639	1.7%
Graham Quant Macro	$105,072,621	1.9%
PIMCO MAARS Fund LP	$98,751,020	1.7%
Harrison Street Core Property	$61,153,198	1.1%
Invesco	$339,129,671	6.0%
Invesco US Val IV	$2,174,468	0.0%
Invesco US Val V	$31,109,956	0.5%
PGIM RE US Debt Fund	$85,891,507	1.5%
Stockbridge Value IV	$16,527,824	0.3%
Private Real Asset	$224,961,495	4.0%
SSgA Custom Real Asset	$348,874,791	6.2%
General Account	$162,934,485	2.9%
Treasury & LAIF	$14,607,369	0.3%
Transition Account	$175	0.0%
Currency Hedge Cash Overlay	$55,186,049	1.0%
Cash Overlay	$16,409,510	0.3%
Futures Offsets (SMCE02001)	-$86,584,694	-1.5%
Total	**$5,667,132,437**	**100.0%**

Statistics Summary

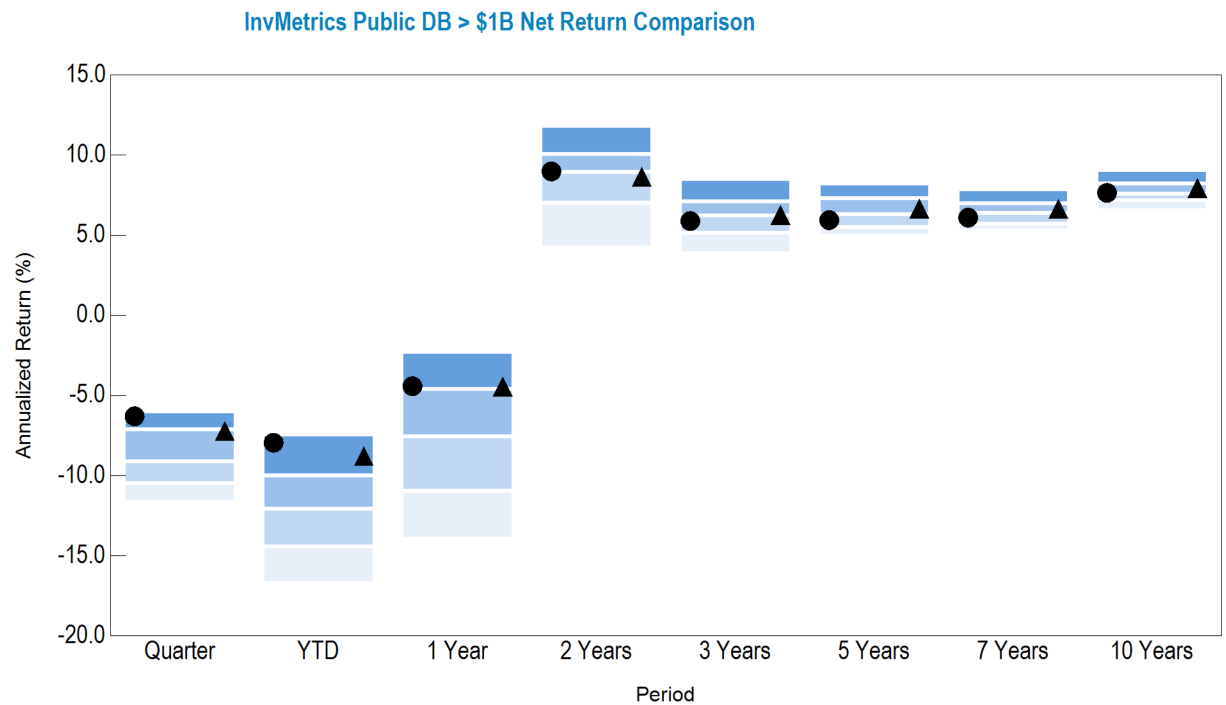
3 Years

	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	5.9%	57	9.2%	17	0.6	30	-0.2	86	2.4%	72
Policy Index	6.3%	50	9.2%	17	0.6	27	--	--	0.0%	1
InvMetrics Public DB > $1B Net Median	6.3%	--	11.3%	--	0.5	--	0.1	--	1.7%	--

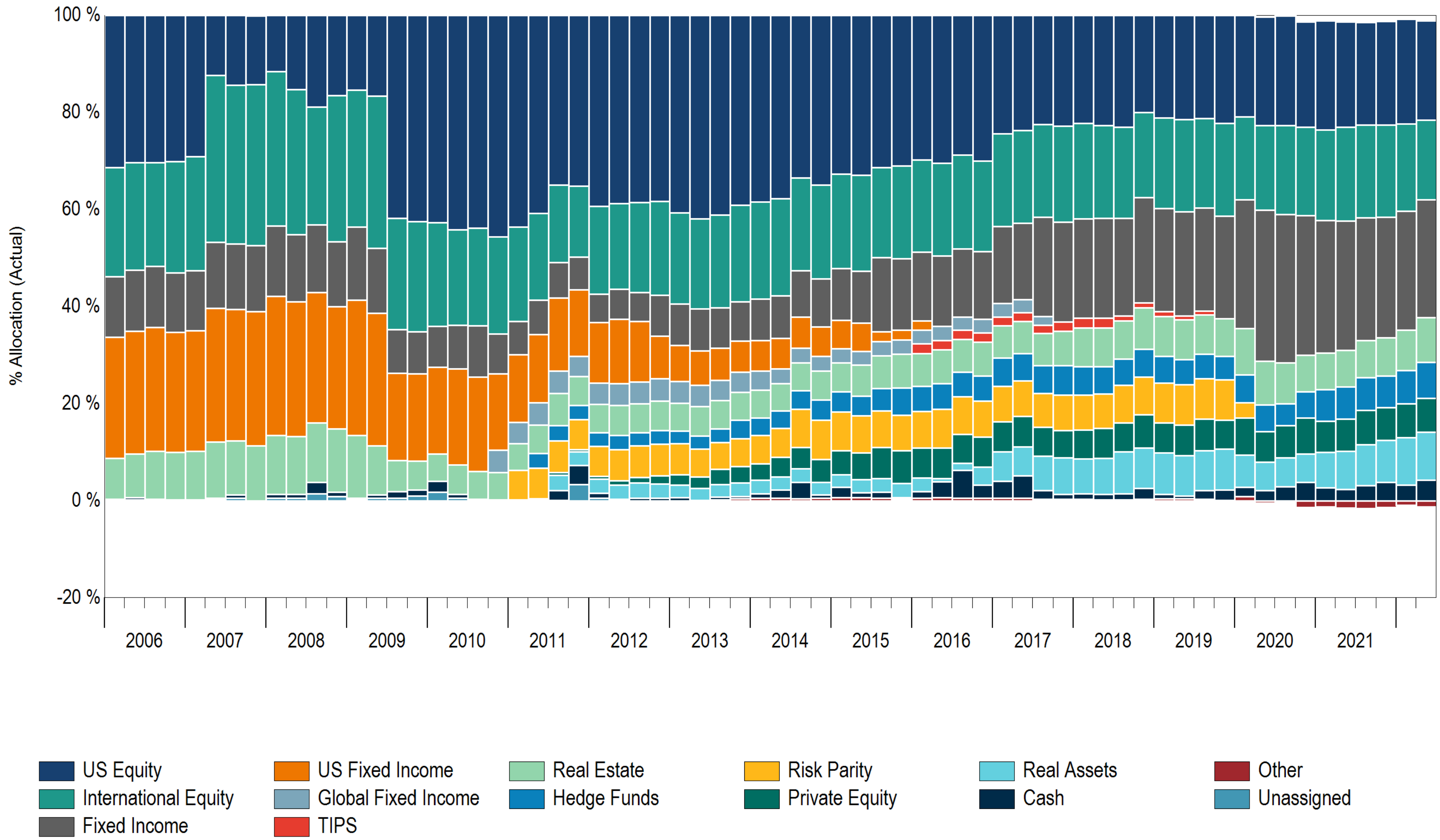
Statistics Summary

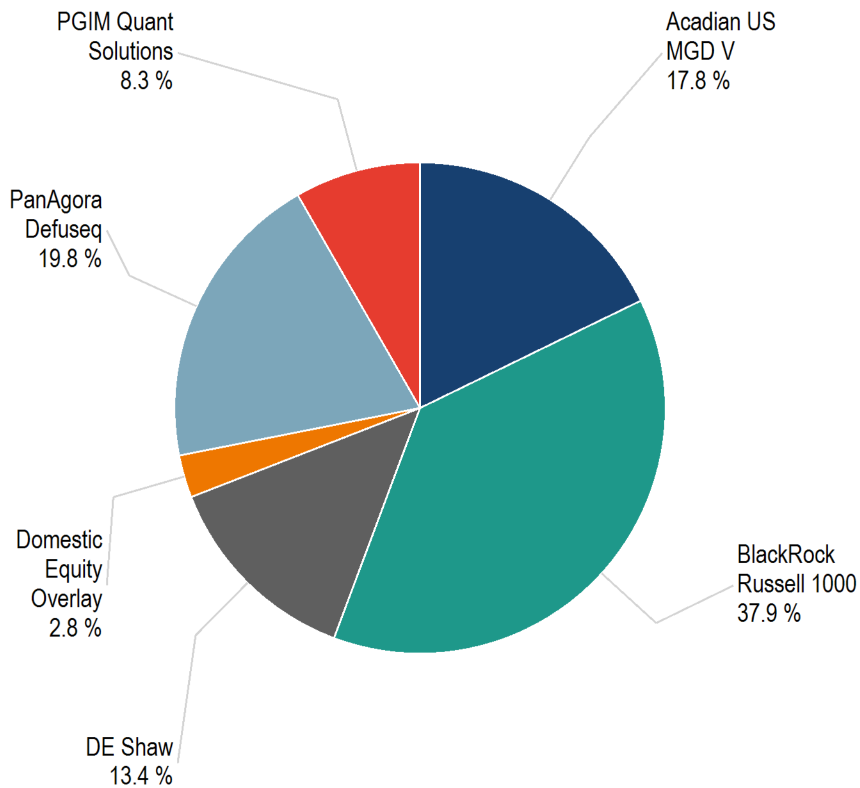
5 Years

	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	5.9%	63	8.2%	17	0.6	37	-0.4	86	1.9%	72
Policy Index	6.7%	46	8.3%	17	0.7	28	--	--	0.0%	1
InvMetrics Public DB > $1B Net Median	6.3%	--	10.2%	--	0.5	--	0.0	--	1.4%	--



	Return (Rank)															
5th Percentile	-6.0		-7.4		-2.3		11.8		8.5		8.2		7.9		9.1	
25th Percentile	-7.1		-10.0		-4.6		10.1		7.2		7.3		7.0		8.2	
Median	-9.1		-12.0		-7.6		9.0		6.3		6.3		6.4		7.6	
75th Percentile	-10.5		-14.4		-10.9		7.1		5.2		5.5		5.7		7.2	
95th Percentile	-11.7		-16.7		-13.9		4.3		3.9		5.0		5.3		6.6	
# of Portfolios	34		34		34		33		33		33		33		32	
● Total Fund	-6.3	(13)	-8.0	(10)	-4.4	(22)	9.0	(50)	5.9	(57)	5.9	(63)	6.1	(60)	7.6	(49)
▲ Policy Index	-7.2	(28)	-8.8	(13)	-4.4	(25)	8.6	(54)	6.3	(50)	6.7	(46)	6.7	(40)	7.9	(44)


100 %
80 %
60 %
40 %
20 %
0 %
-20 %
% Allocation (Actual)
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
US Equity
International Equity
Fixed Income
US Fixed Income
Global Fixed Income
TIPS
Real Estate
Hedge Funds
Risk Parity
Private Equity
Real Assets
Cash
Other
Unassigned



	Actual $	Actual %	Manager Contribution to Excess Return %
Acadian US MGD V	$210,268,464	17.8%	1.0%
BlackRock Russell 1000	$446,756,472	37.9%	0.0%
DE Shaw	$158,358,314	13.4%	0.0%
PanAgora Defuseq	$234,181,224	19.8%	1.9%
PGIM Quant Solutions	$97,738,184	8.3%	0.2%
Domestic Equity Overlay	$32,947,450	2.8%	0.0%
Actual vs. Policy Weight Difference			0.1%
Total	**$1,180,250,108**	**100.0%**	**3.1%**

Statistics Summary

3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
US Equity	8.8%	18.3%	0.5	-0.4	2.4%
Blended US Equity Index	9.8%	19.4%	0.5	--	0.0%
Russell 3000	9.8%	19.4%	0.5	--	0.0%

Statistics Summary

3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Large Cap Equity	9.0%	17.9%	0.5	-0.5	2.4%
Russell 1000	10.2%	19.2%	0.5	--	0.0%
Acadian US MGD V	5.0%	16.7%	0.3	-0.9	5.9%
Russell 1000	10.2%	19.2%	0.5	--	0.0%
BlackRock Russell 1000	10.2%	19.2%	0.5	-0.2	0.0%
Russell 1000	10.2%	19.2%	0.5	--	0.0%
DE Shaw	9.1%	19.5%	0.4	-0.3	3.1%
Russell 1000	10.2%	19.2%	0.5	--	0.0%
PanAgora Defuseq	7.7%	16.3%	0.4	-0.3	7.8%
Russell 1000	10.2%	19.2%	0.5	--	0.0%
Small Cap Equity	4.5%	25.2%	0.2	0.1	5.8%
Russell 2000	4.2%	24.3%	0.2	--	0.0%
PGIM Quant Solutions	4.5%	25.2%	0.2	0.1	5.8%
Russell 2000	4.2%	24.3%	0.2	--	0.0%

Statistics Summary

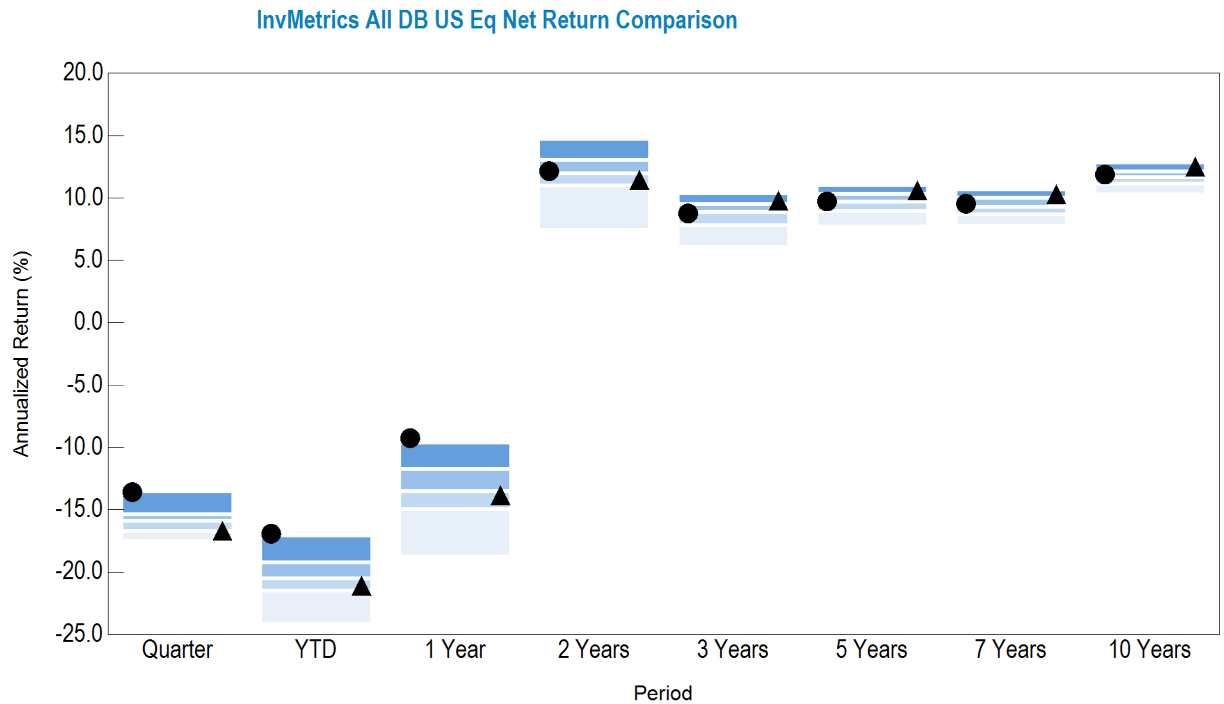
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
US Equity	9.7%	16.7%	0.5	-0.4	2.0%
Blended US Equity Index	10.6%	17.5%	0.5	--	0.0%
Russell 3000	10.6%	17.5%	0.5	--	0.0%

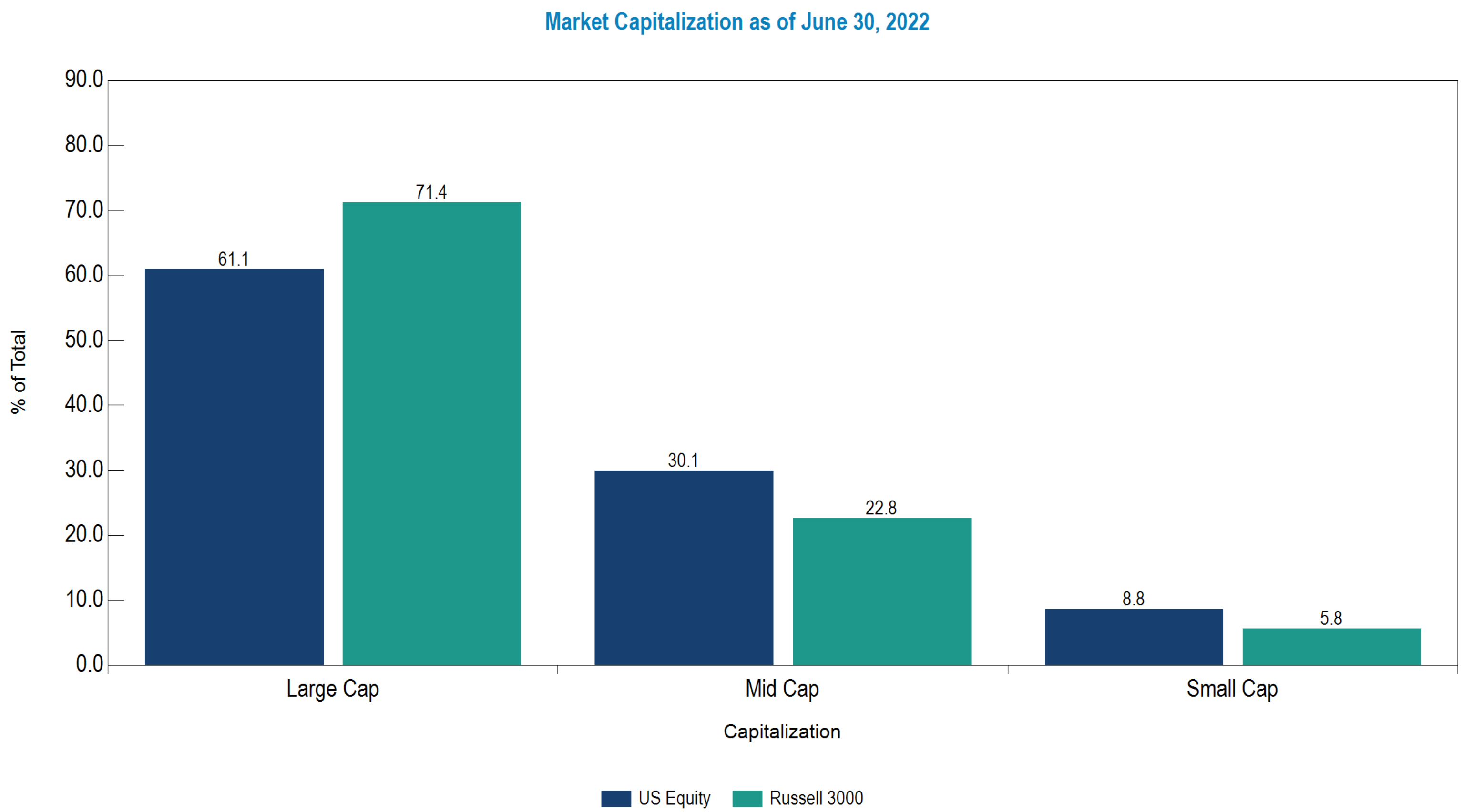
Statistics Summary

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Large Cap Equity	10.4%	16.3%	0.6	-0.3	2.0%
Russell 1000	11.0%	17.4%	0.6	--	0.0%
BlackRock Russell 1000	11.0%	17.3%	0.6	0.1	0.0%
Russell 1000	11.0%	17.4%	0.6	--	0.0%
DE Shaw	10.2%	17.4%	0.5	-0.3	2.9%
Russell 1000	11.0%	17.4%	0.6	--	0.0%
Small Cap Equity	3.9%	22.7%	0.1	-0.3	4.8%
Russell 2000	5.2%	22.0%	0.2	--	0.0%
PGIM Quant Solutions	3.9%	22.7%	0.1	-0.3	4.8%
Russell 2000	5.2%	22.0%	0.2	--	0.0%



	Return (Rank)															
5th Percentile	-13.5		-17.1		-9.6		14.7		10.3		11.0		10.7		12.8	
25th Percentile	-15.4		-19.2		-11.7		13.1		9.5		10.3		10.1		12.2	
Median	-15.9		-20.5		-13.5		12.0		8.9		9.7		9.3		11.7	
75th Percentile	-16.7		-21.5		-15.0		11.0		7.8		9.0		8.7		11.2	
95th Percentile	-17.5		-24.1		-18.7		7.5		6.1		7.8		7.8		10.3	
# of Portfolios	262		262		260		259		259		247		227		184	
● US Equity	-13.6	(6)	-16.9	(5)	-9.3	(4)	12.1	(45)	8.8	(59)	9.7	(51)	9.5	(44)	11.9	(39)
▲ Blended US Equity Index	-16.7	(78)	-21.1	(66)	-13.9	(56)	11.4	(62)	9.8	(13)	10.6	(14)	10.3	(18)	12.5	(15)



See appendix for the market capitalization breakpoints.

Characteristics

	Portfolio	Russell 3000
Number of Holdings	3,035	2,960
Weighted Avg. Market Cap. ($B)	307.1	412.8
Median Market Cap. ($B)	3.9	2.4
Price To Earnings	17.0	18.1
Price To Book	3.4	3.6
Price To Sales	1.8	2.0
Return on Equity (%)	25.1	25.5
Yield (%)	1.8	1.7

Top Holdings

APPLE INC	3.9%
MICROSOFT CORP	3.8%
ALPHABET INC	1.8%
AMAZON.COM INC	1.3%
ALPHABET INC	1.1%
TESLA INC	1.1%
EXXON MOBIL CORP	1.0%
JOHNSON & JOHNSON	1.0%
AT&T INC	1.0%
PROCTER & GAMBLE CO (THE)	0.9%

Best Performers

	Return %
TURNING POINT THERAPEUTICS INC (TPTX)	180.3%
CATALYST BIOSCIENCES INC (CBIO)	169.7%
VERU INC (VERU)	134.0%
GTY TECHNOLOGY HOLDINGS INC (GTYH)	93.8%
ALTIMMUNE INC (ALT)	92.1%
ALAUNOS THERAPEUTICS INC (TCRT)	90.1%
DAY ONE BIOPHARMACEUTICALS INC	80.4%
SIGA TECHNOLOGIES INC (SIGA)	73.3%
SIERRA ONCOLOGY INC (SRRA)	71.6%
HEMISPHERE MEDIA GROUP INC (HMTV)	67.0%

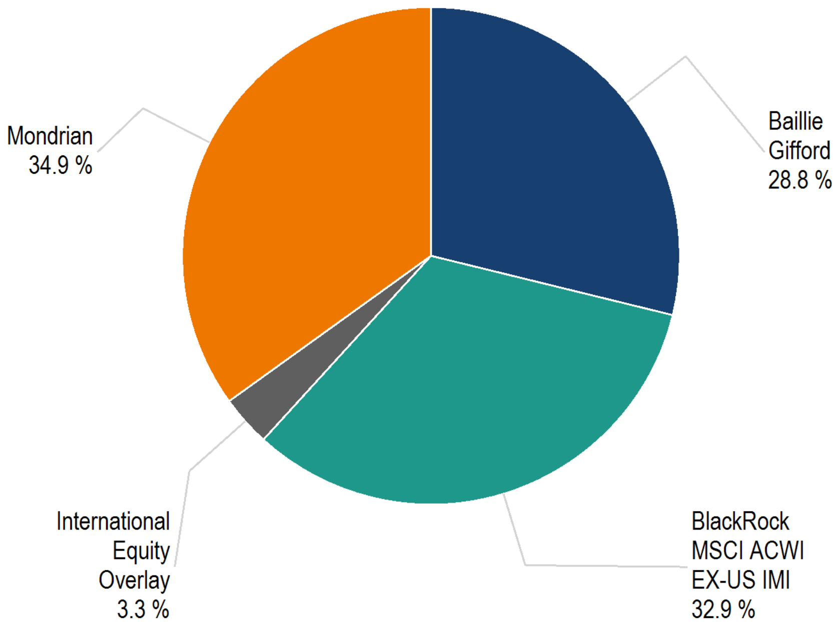
Worst Performers

	Return %
GENOCEA BIOSCIENCES INC (GNCA)	-98.6%
SPERO THERAPEUTICS INC (SPRO)	-91.5%
AKERNA CORP (KERN)	-87.9%
AGILE THERAPEUTICS INC (AGRX)	-86.1%
RUBIUS THERAPEUTICS INC (RUBY)	-84.6%
AUTOWEB INC (AUTO)	-83.5%
AVAYA HOLDINGS CORP (AVYA)	-82.3%
VAPOTHERM INC (VAPO)	-81.8%
CARVANA CO (CVNA)	-81.1%
MARATHON DIGITAL HOLDINGS INC (MARA)	-80.9%

US Equity Performance Attribution vs. Russell 3000

	Attribution Effects						Returns		Sector Weights	
	Total Effects		Selection Effect		Allocation Effect		Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	0.0%		-0.1%		0.1%		0.0%	-7.5%	-5.7%	4.5%	3.4%
Materials	0.2%		0.1%		0.0%		0.1%	-13.1%	-18.0%	5.0%	2.6%
Industrials	0.1%		0.1%		0.0%		0.0%	-14.6%	-15.8%	9.2%	8.9%
Consumer Discretionary	0.6%		0.6%		0.0%		0.0%	-20.6%	-25.6%	11.4%	11.7%
Consumer Staples	0.4%		0.1%		0.3%		0.0%	-3.1%	-5.0%	8.0%	5.7%
Health Care	-0.1%		-0.1%		0.0%		0.0%	-7.9%	-7.3%	13.6%	13.7%
Financials	0.1%		0.1%		0.0%		0.0%	-15.9%	-17.0%	10.4%	11.8%
Information Technology	0.5%		0.4%		0.3%		-0.1%	-20.0%	-21.3%	22.2%	27.5%
Communication Services	0.4%		0.4%		0.0%		0.0%	-15.2%	-20.2%	8.8%	8.5%
Utilities	0.1%		0.0%		0.1%		0.0%	-4.6%	-5.2%	3.7%	2.7%
Real Estate	-0.1%		-0.1%		0.0%		0.0%	-17.5%	-15.5%	2.8%	3.6%
Cash	0.0%		0.0%		0.0%		0.0%	0.1%	--	0.2%	0.0%
Unclassified	0.0%		0.0%		0.0%		0.0%	-15.7%	--	0.1%	0.0%
Portfolio	**2.5%**	**=**	**1.6%**	**+**	**0.8%**	**+**	**0.1%**	**-14.1%**	**-16.6%**	**100.0%**	**100.0%**

U.S. Effective Style Map



	Actual $	Actual %	Manager Contribution to Excess Return %
Baillie Gifford	$275,951,848	28.8%	-1.6%
Mondrian	$334,254,860	34.9%	0.6%
BlackRock MSCI ACWI EX-US IMI	$315,409,645	32.9%	0.1%
International Equity Overlay	$31,668,510	3.3%	0.0%
Actual vs. Policy Weight Difference			0.6%
Total	**$957,284,863**	**100.0%**	**-0.3%**

Statistics Summary

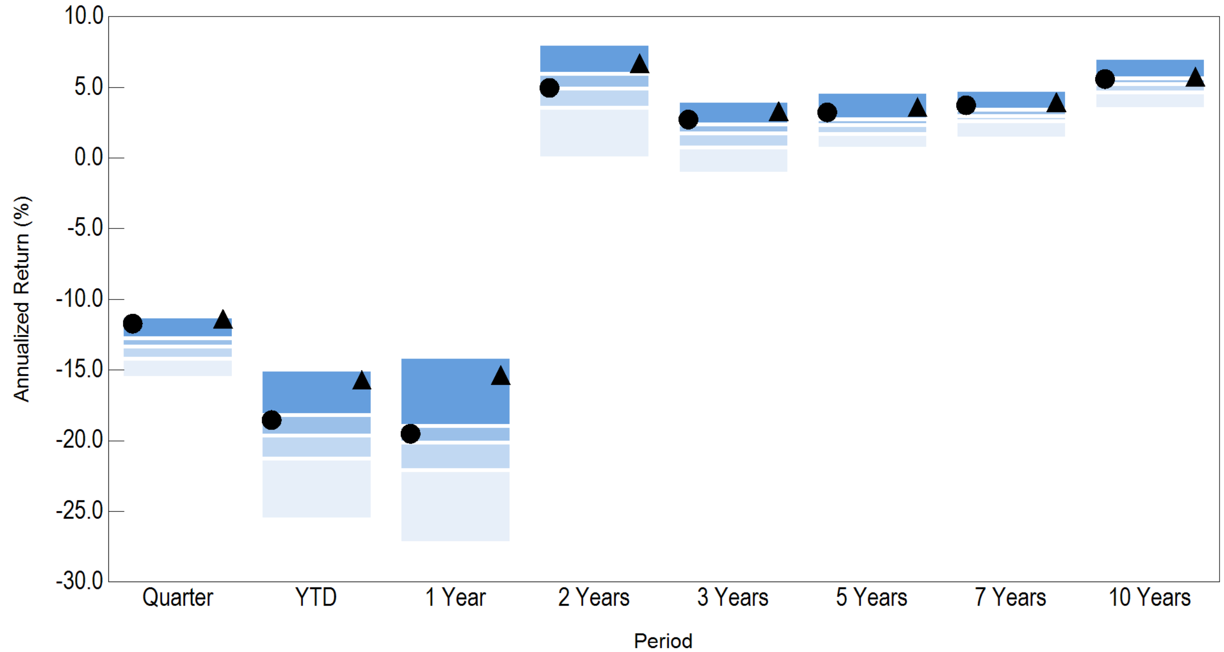
3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
International Equity	2.7%	16.3%	0.1	-0.3	2.0%
Blended International Equity Index	3.3%	16.0%	0.2	--	0.0%
Baillie Gifford	0.9%	19.9%	0.0	-0.1	8.6%
MSCI ACWI ex US	1.8%	17.5%	0.1	--	0.0%
Mondrian	0.4%	18.8%	0.0	-0.3	2.9%
MSCI ACWI ex USA Value Gross	1.2%	20.0%	0.0	--	0.0%

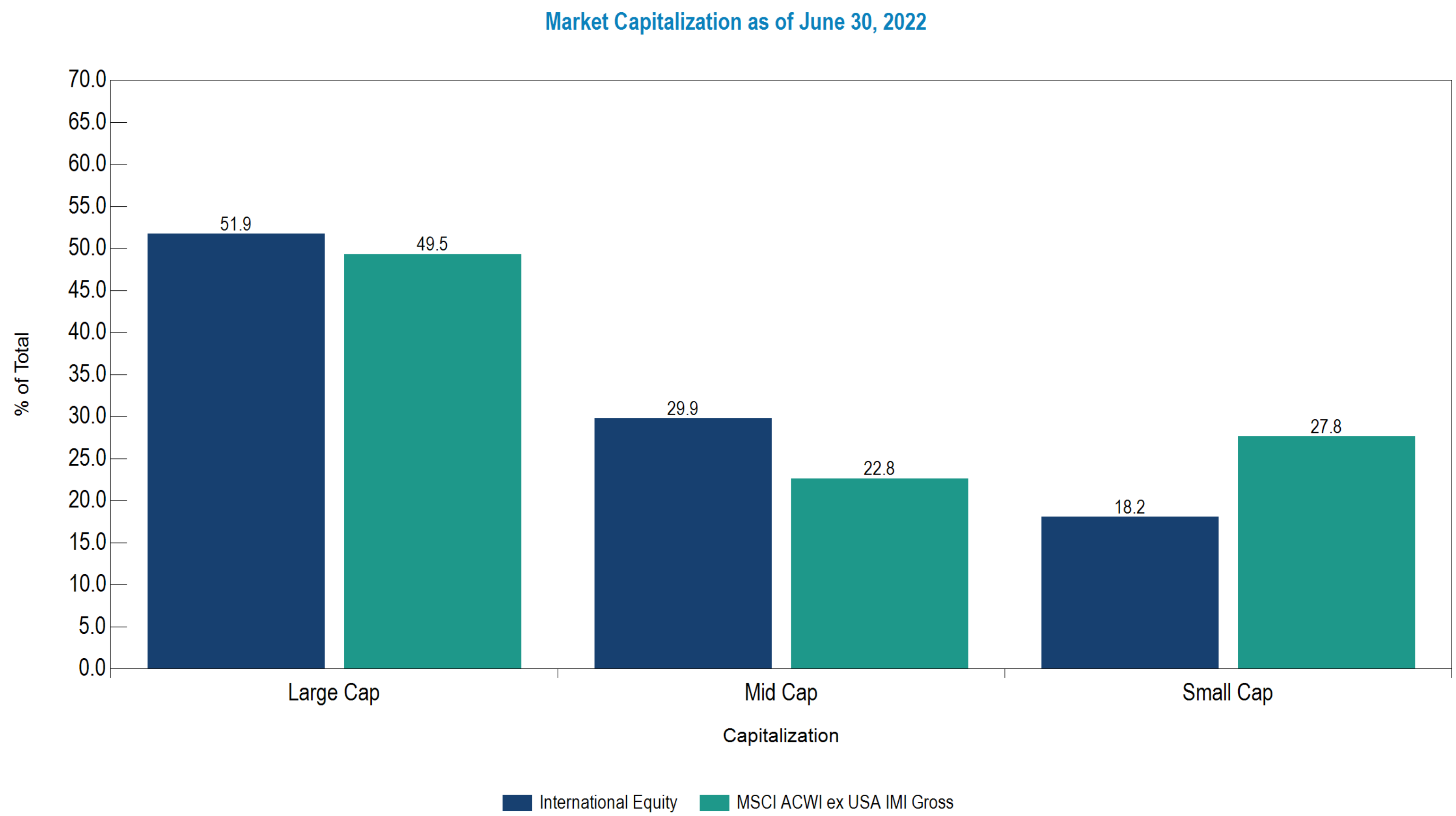
Statistics Summary

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
International Equity	3.2%	14.8%	0.1	-0.2	1.7%
Blended International Equity Index	3.6%	14.7%	0.2	--	0.0%
Baillie Gifford	2.5%	17.8%	0.1	-0.1	7.4%
MSCI ACWI ex US	3.0%	15.7%	0.1	--	0.0%
Mondrian	1.4%	16.4%	0.0	-0.2	2.6%
MSCI ACWI ex USA Value Gross	1.9%	17.4%	0.0	--	0.0%



Return (Rank)	Quarter		YTD		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	-11.2		-15.0		-14.1		8.1		4.0		4.7		4.8		7.1	
25th Percentile	-12.7		-18.2		-18.9		6.0		2.4		2.8		3.4		5.7	
Median	-13.3		-19.6		-20.1		4.9		1.8		2.4		3.0		5.3	
75th Percentile	-14.2		-21.2		-22.0		3.6		0.8		1.7		2.6		4.7	
95th Percentile	-15.5		-25.5		-27.2		0.0		-1.1		0.7		1.4		3.5	
# of Portfolios	160		160		159		157		157		146		131		106	
● International Equity	-11.7	(9)	-18.5	(37)	-19.5	(42)	5.0	(50)	2.7	(24)	3.2	(16)	3.7	(17)	5.6	(30)
▲ Blended International Equity Index	-11.4	(6)	-15.7	(7)	-15.3	(8)	6.7	(13)	3.3	(15)	3.6	(10)	4.0	(12)	5.8	(24)



See appendix for the market capitalization breakpoints.

Characteristics

	Portfolio	MSCI ACWI ex USA IMI Gross
Number of Holdings	6,707	6,419
Weighted Avg. Market Cap. ($B)	68.7	70.6
Median Market Cap. ($B)	1.6	1.6
Price To Earnings	13.1	12.2
Price To Book	2.3	2.3
Price To Sales	1.2	1.2
Return on Equity (%)	14.2	14.2
Yield (%)	3.0	3.5

Top Holdings

ALIBABA GROUP HOLDING LTD	1.6%
UNITED OVERSEAS BANK LTD	1.5%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.3%
HOUSING DEVELOPMENT FINANCE CORP LTD	1.2%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	1.1%
CK HUTCHISON HOLDINGS LTD	1.1%
NOVARTIS AG	1.1%
PING AN INSURANCE GROUP	1.1%
SANOFI	1.1%
TAKEDA PHARMACEUTICAL CO LTD	1.0%

Best Performers

	Return %
KOOLEARN TECHNOLOGY HOLDING LTD	373.6%
PT PANIN FINANCIAL TBK	139.1%
OGK-2 JSC	135.7%
YATSEN HOLDING LTD ADR	125.8%
HAICHANG OCEAN PARK HOLDINGS LTD	103.7%
INTER RAO UES (RS:IRA)	99.1%
KINTOR PHARMACEUTICAL LTD COMMON STOCK USD.0001	91.4%
CHONG QING CHANGAN AUTOMOBILE CO LTD	89.9%
SARAS RAFFINERIE SARDE SPA	87.0%
THE GO-AHEAD GROUP PLC	77.2%

Worst Performers

	Return %
CFE (B:CFE)	-93.9%
GOME RETAIL HOLDINGS LTD	-92.3%
DAFA PROPERTIES GROUP LTD	-88.8%
SKYFAME REALTY HOLDINGS	-85.9%
LEADING HOLDINGS GROUP LTD HK06999	-85.0%
CORESTATE CAPITAL HOLDING SA	-85.0%
FIREFINCH LTD	-82.4%
ARGONAUT GOLD INC (AR.)	-82.2%
FUITURE RETAIL LTD	-79.5%
PETROPAVLOVSK PLC	-78.0%

International Equity Performance Attribution vs. MSCI ACWI ex USA IMI Gross

	Attribution Effects					Returns		Sector Weights	
	Total Effects		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	-0.1%		0.0%	-0.1%	0.1%	-5.8%	-4.6%	3.9%	5.1%
Materials	0.6%		0.1%	0.3%	0.2%	-19.7%	-21.3%	5.5%	9.4%
Industrials	-0.1%		0.0%	0.0%	-0.1%	-16.7%	-16.6%	14.9%	13.4%
Consumer Discretionary	-0.3%		-0.2%	0.1%	-0.2%	-11.5%	-9.4%	14.1%	11.1%
Consumer Staples	0.0%		0.0%	0.0%	0.0%	-7.5%	-7.6%	8.2%	8.0%
Health Care	0.2%		0.2%	0.1%	-0.1%	-8.1%	-10.1%	10.6%	8.9%
Financials	0.3%		0.0%	0.0%	0.3%	-13.5%	-14.0%	14.9%	19.1%
Information Technology	-0.2%		0.1%	-0.2%	-0.1%	-21.6%	-22.4%	14.2%	12.2%
Communication Services	-0.1%		0.0%	0.0%	-0.2%	-12.3%	-11.5%	7.9%	5.9%
Utilities	-0.1%		-0.1%	0.0%	0.0%	-12.0%	-9.1%	3.5%	3.2%
Real Estate	0.2%		0.0%	0.0%	0.1%	-14.6%	-14.9%	1.3%	3.7%
Cash	0.1%		0.0%	0.1%	0.0%	0.1%	--	1.1%	0.0%
Unclassified	0.0%		--	--	--	--	--	0.0%	0.0%
Portfolio	**0.4%**	**=**	**0.1%**	**+ 0.4%**	**+ -0.1%**	**-13.5%**	**-13.9%**	**100.0%**	**100.0%**

Int'l Equity Performance Attribution vs. MSCI ACWI ex USA IMI Gross

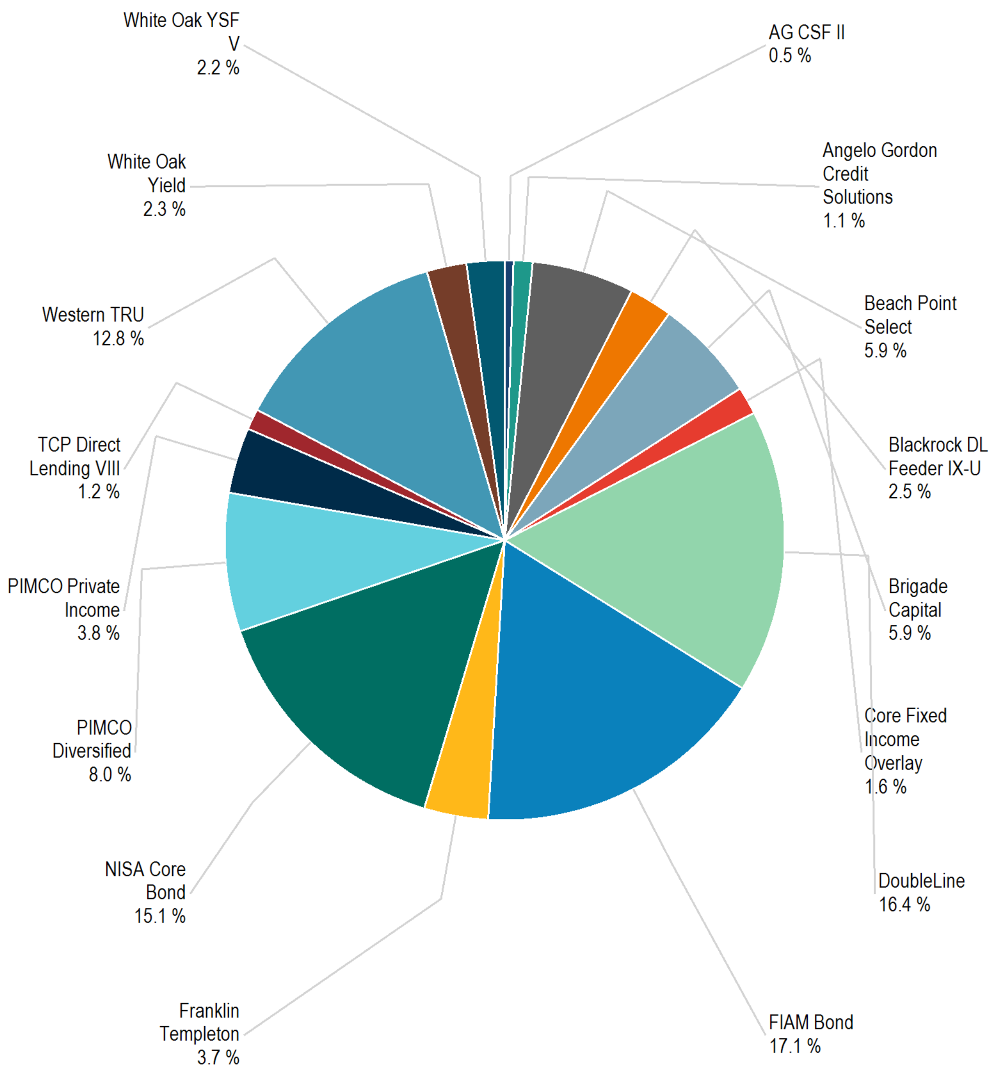
	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Europe									
Austria	-17.5%	-15.6%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Belgium	-16.7%	-14.2%	0.2%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Czech Republic*	-2.8%	-2.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Denmark	-12.1%	-11.8%	0.8%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Finland	-12.5%	-11.9%	0.3%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%
France	-10.7%	-14.4%	5.9%	6.5%	0.3%	0.0%	0.0%	0.0%	0.3%
Germany	-26.2%	-17.6%	3.8%	5.0%	-0.5%	0.0%	0.1%	0.1%	-0.2%
Greece*	-14.4%	-14.3%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Hungary*	-26.1%	-26.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Ireland	-21.9%	-17.6%	0.5%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Italy	-14.6%	-16.6%	2.3%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Luxembourg	-35.8%	-13.9%	0.4%	0.0%	0.0%	0.0%	0.0%	-0.1%	-0.1%
Netherlands	-16.8%	-18.6%	4.4%	2.6%	0.1%	-0.1%	-0.1%	0.0%	-0.1%
Norway	-18.1%	-17.3%	0.2%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Poland*	-24.1%	-24.6%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Portugal	-6.2%	-4.2%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Spain	-13.3%	-8.3%	1.5%	1.4%	-0.1%	0.0%	0.0%	0.0%	-0.1%
Sweden	-22.9%	-22.4%	2.9%	2.6%	0.0%	0.0%	0.0%	0.0%	-0.1%
Switzerland	-12.5%	-14.2%	3.7%	6.1%	0.1%	0.1%	0.1%	0.0%	0.2%
United Kingdom	-11.6%	-11.6%	12.4%	9.9%	0.0%	0.1%	-0.2%	0.0%	-0.1%

Int'l Equity Performance Attribution vs. MSCI ACWI ex USA IMI Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
AsiaPacific									
Australia	-18.1%	-19.3%	2.5%	5.4%	0.1%	0.1%	0.2%	0.0%	0.3%
China*	5.0%	3.5%	7.8%	7.6%	0.1%	0.0%	0.0%	0.0%	0.1%
Hong Kong	-4.9%	-1.5%	4.1%	1.7%	-0.1%	0.2%	0.0%	-0.1%	0.0%
India*	-13.7%	-13.8%	4.3%	4.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Indonesia*	-11.6%	-8.2%	0.4%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
Japan	-13.6%	-14.0%	19.1%	14.7%	0.1%	0.2%	-0.5%	0.0%	-0.2%
Korea*	-21.8%	-21.1%	3.0%	3.7%	0.0%	0.0%	0.0%	0.0%	0.1%
Malaysia*	-13.0%	-12.3%	0.2%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%
New Zealand	-29.4%	-18.3%	0.5%	0.2%	0.0%	0.0%	0.0%	0.0%	-0.1%
Philippines*	-19.4%	-19.2%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Singapore	-17.9%	-14.8%	2.0%	1.0%	0.0%	0.0%	0.0%	0.0%	-0.1%
Taiwan*	-19.8%	-19.4%	4.8%	4.8%	-0.1%	0.0%	0.0%	0.0%	0.0%
Thailand*	-10.8%	-10.6%	0.3%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Americas									
Argentina*	-46.5%	-28.1%	0.6%	0.0%	0.0%	-0.1%	0.0%	-0.1%	-0.2%
Brazil*	-21.5%	-23.9%	1.7%	1.7%	0.0%	0.0%	0.0%	0.0%	0.0%
Canada	-21.4%	-16.0%	3.5%	8.2%	-0.5%	0.2%	0.1%	0.3%	0.2%
Chile*	-14.7%	-14.8%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Colombia*	-23.9%	-23.8%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
Mexico*	-15.3%	-12.9%	0.6%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Peru*	-28.3%	-30.2%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
United States	-18.5%	-16.9%	1.1%	0.0%	0.0%	-0.1%	0.0%	0.0%	-0.1%

Int'l Equity Performance Attribution vs. MSCI ACWI ex USA IMI Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Other									
Egypt*	-20.2%	-19.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Israel	-19.6%	-19.8%	0.2%	0.7%	0.0%	0.0%	0.0%	0.0%	0.1%
Kuwait*	-6.3%	-6.3%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%
Qatar*	-10.4%	-10.4%	0.1%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%
Saudi Arabia*	-12.6%	-12.6%	0.4%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%
South Africa*	0.1%	-22.0%	0.7%	1.1%	0.3%	0.0%	0.0%	-0.1%	0.2%
Turkey*	-6.2%	-6.5%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%
United Arab Emirates*	-18.0%	-17.9%	0.1%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Totals									
Americas	-22.6%	-17.1%	7.9%	10.8%	-0.7%	0.1%	0.2%	0.2%	-0.2%
Europe	-15.0%	-14.7%	40.1%	40.3%	0.0%	0.0%	-0.1%	0.0%	-0.1%
Asia/Pacific	-11.6%	-12.2%	49.2%	44.9%	0.3%	0.1%	-0.2%	0.0%	0.2%
Other	-8.2%	-16.4%	1.7%	4.0%	0.4%	0.1%	0.1%	-0.2%	0.3%
Cash	0.1%	--	1.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%
Total	**-13.6%**	**-13.9%**	**100.0%**	**100.0%**	**0.0%**	**0.4%**	**-0.1%**	**0.0%**	**0.3%**
Totals									
Developed	-14.7%	-14.8%	73.1%	71.9%	0.2%	0.0%	-0.2%	0.0%	0.0%
Emerging*	-11.1%	-11.8%	25.8%	28.1%	0.1%	0.0%	0.2%	0.0%	0.3%
Cash	0.1%	--	1.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%



	Actual $	Actual %	Manager Contribution to Excess Return %
AG CSF Annex Dislocation Fund	$360	0.0%	0.0%
AG CSF II	$6,382,449	0.5%	0.0%
Angelo Gordon Credit Solutions	$15,091,917	1.1%	0.0%
Angelo Gordon Opportunistic	$591,165	0.0%	0.0%
Beach Point Select	$82,863,307	5.9%	0.1%
Blackrock DL Feeder IX-U	$35,845,149	2.5%	0.0%
Brigade Capital	$83,344,120	5.9%	0.1%
DoubleLine	$231,879,985	16.4%	-0.1%
FIAM Bond	$241,742,771	17.1%	-0.1%
Franklin Templeton	$52,698,572	3.7%	-0.2%
NISA Core Bond	$214,102,329	15.1%	0.0%
PIMCO Diversified	$113,829,436	8.0%	0.0%
PIMCO Private Income	$54,026,389	3.8%	0.3%
TCP Direct Lending VIII	$16,842,515	1.2%	0.0%
Western TRU	$181,747,537	12.8%	-0.6%
White Oak Yield	$32,143,903	2.3%	0.0%
White Oak YSF V	$31,204,662	2.2%	0.0%
Core Fixed Income Overlay	$21,968,734	1.6%	0.0%
Actual vs. Policy Weight Difference			1.3%
Total	**$1,416,305,299**	**100.0%**	**0.8%**

Statistics Summary

3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Fixed Income	0.4%	4.4%	0.0	0.4	2.0%
Blended Fixed Income Index	-0.5%	5.3%	-0.2	--	0.0%
Core Fixed	-0.9%	4.2%	-0.3	0.1	1.5%
Bloomberg US Aggregate TR	-0.9%	4.6%	-0.3	--	0.0%
FIAM Bond	0.1%	5.0%	-0.1	0.7	1.5%
Bloomberg US Aggregate TR	-0.9%	4.6%	-0.3	--	0.0%
Western TRU	-1.3%	7.3%	-0.2	-0.3	7.3%
3-Month Libor Total Return USD	0.8%	0.2%	1.3	--	0.0%
Opportunistic Credit	2.6%	7.1%	0.3	0.4	4.8%
Bloomberg BA Intermediate HY	0.6%	9.0%	0.0	--	0.0%
Angelo Gordon Opportunistic	7.7%	20.0%	0.4	0.4	20.0%
Bloomberg US Aggregate TR	-0.9%	4.6%	-0.3	--	0.0%
Beach Point Select	8.0%	9.1%	0.8	1.3	5.6%
Bloomberg BA Intermediate HY	0.6%	9.0%	0.0	--	0.0%
Brigade Capital	4.0%	12.3%	0.3	0.5	7.5%
Bloomberg BA Intermediate HY	0.6%	9.0%	0.0	--	0.0%
PIMCO Diversified	-2.4%	8.1%	-0.4	-0.5	1.2%
Blended PIMCO Diversified Index	-1.8%	8.7%	-0.3	--	0.0%
Franklin Templeton	-8.0%	7.4%	-1.2	-0.7	7.1%
Bloomberg Multiverse TR	-3.2%	6.0%	-0.6	--	0.0%

Statistics Summary

3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Private Credit	6.5%	4.3%	1.4	-0.8	2.5%
Cliffwater Direct Lending Index	8.5%	5.7%	1.4	--	0.0%
PIMCO Private Income	9.1%	8.7%	1.0	0.9	9.9%
Bloomberg BA Intermediate HY	0.6%	9.0%	0.0	--	0.0%
TCP Direct Lending VIII	5.5%	3.1%	1.6	-0.6	5.0%
Cliffwater Direct Lending Index	8.5%	5.7%	1.4	--	0.0%
White Oak Yield	5.3%	2.9%	1.7	-0.9	3.6%
Cliffwater Direct Lending Index	8.5%	5.7%	1.4	--	0.0%

Statistics Summary

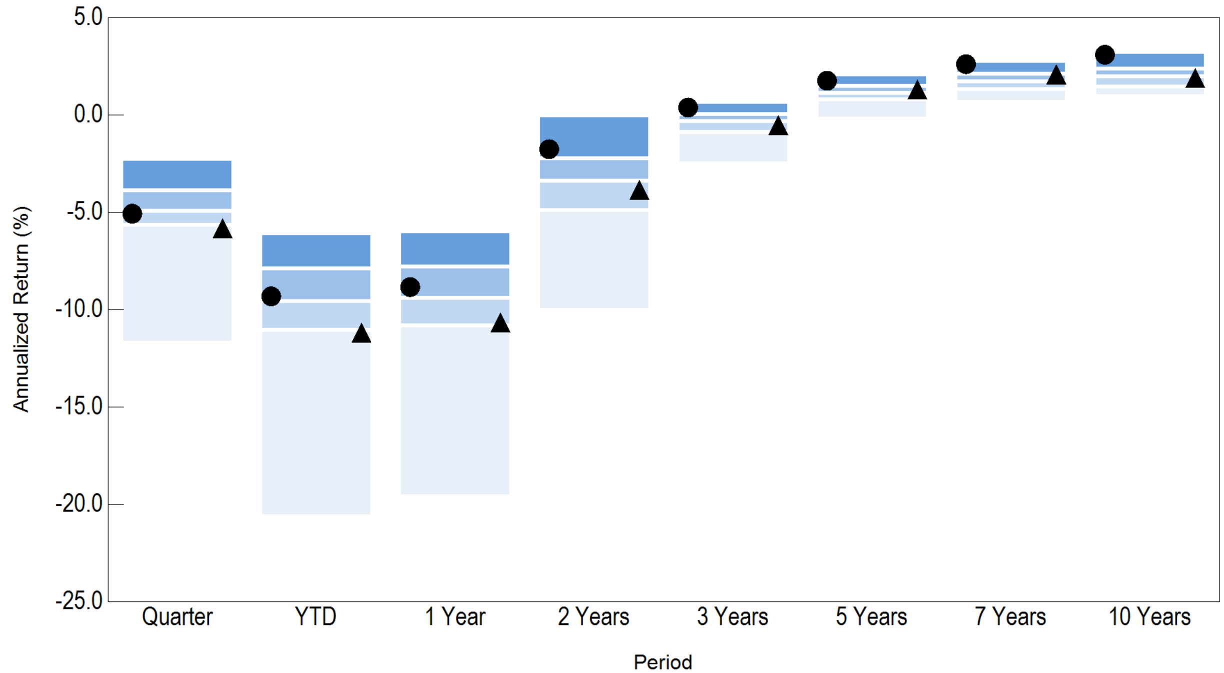
5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Fixed Income	1.8%	3.7%	0.2	0.3	1.8%
Blended Fixed Income Index	1.3%	4.5%	0.1	--	0.0%
Core Fixed	0.8%	3.6%	-0.1	-0.1	1.3%
Bloomberg US Aggregate TR	0.9%	4.0%	0.0	--	0.0%
FIAM Bond	1.6%	4.3%	0.1	0.6	1.2%
Bloomberg US Aggregate TR	0.9%	4.0%	0.0	--	0.0%
Western TRU	0.2%	6.1%	-0.1	-0.2	6.1%
3-Month Libor Total Return USD	1.4%	0.3%	1.1	--	0.0%
Opportunistic Credit	3.6%	5.7%	0.5	0.3	4.0%
Bloomberg BA Intermediate HY	2.3%	7.4%	0.2	--	0.0%
Angelo Gordon Opportunistic	11.7%	16.7%	0.6	0.6	16.7%
Bloomberg US Aggregate TR	0.9%	4.0%	0.0	--	0.0%
Beach Point Select	7.2%	7.4%	0.8	1.1	4.7%
Bloomberg BA Intermediate HY	2.3%	7.4%	0.2	--	0.0%
Brigade Capital	3.8%	9.8%	0.3	0.2	6.2%
Bloomberg BA Intermediate HY	2.3%	7.4%	0.2	--	0.0%
Franklin Templeton	--	--	--	--	--
Bloomberg Multiverse TR	-0.5%	5.3%	-0.3	--	0.0%

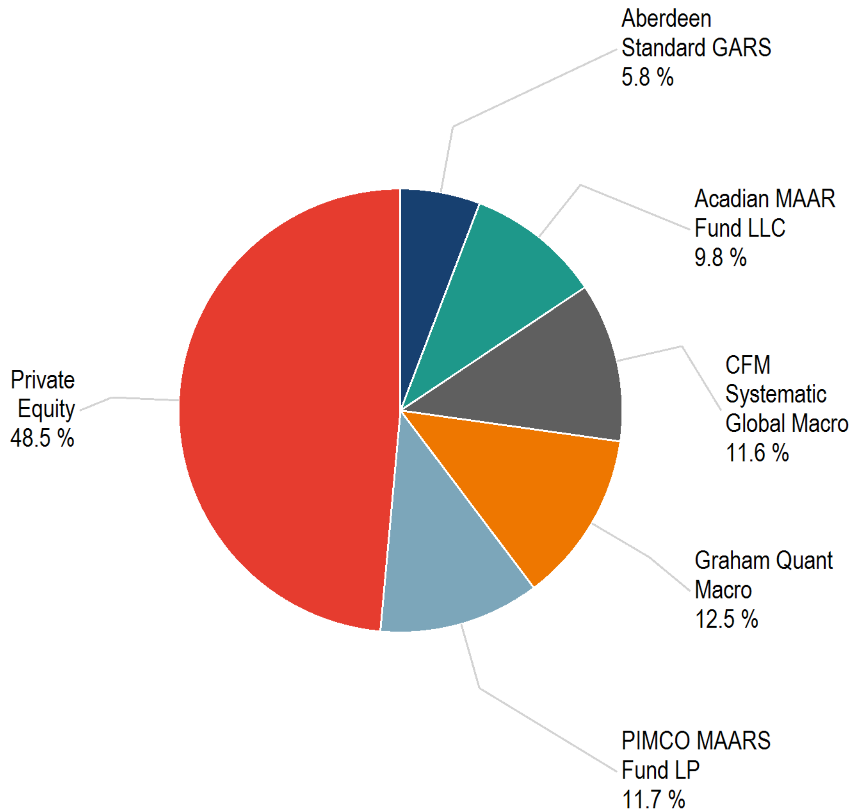
Statistics Summary

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Private Credit	6.8%	3.5%	1.6	-0.7	2.7%
Cliffwater Direct Lending Index	8.6%	4.9%	1.5	--	0.0%
TCP Direct Lending VIII	6.2%	2.6%	2.0	-0.5	4.7%
Cliffwater Direct Lending Index	8.6%	4.9%	1.5	--	0.0%
White Oak Yield	5.7%	3.2%	1.4	-0.9	3.3%
Cliffwater Direct Lending Index	8.6%	4.9%	1.5	--	0.0%



	Quarter		YTD		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
	Return (Rank)															
5th Percentile	-2.3		-6.1		-6.0		0.0		0.6		2.1		2.8		3.2	
25th Percentile	-3.9		-7.9		-7.8		-2.2		0.1		1.5		2.1		2.4	
Median	-4.9		-9.6		-9.4		-3.4		-0.3		1.2		1.7		2.0	
75th Percentile	-5.6		-11.0		-10.8		-4.9		-0.9		0.8		1.4		1.5	
95th Percentile	-11.7		-20.6		-19.6		-10.0		-2.5		-0.2		0.7		1.0	
# of Portfolios	129		129		128		128		128		119		110		88	
● **Fixed Income**	-5.1	(61)	-9.3	(46)	-8.8	(40)	-1.8	(16)	0.4	(13)	1.8	(13)	2.6	(7)	3.1	(7)
▲ **Blended Fixed Income Index**	-5.8	(77)	-11.2	(82)	-10.7	(73)	-3.9	(64)	-0.5	(57)	1.3	(40)	2.1	(27)	1.9	(58)



	Actual $	Actual %	Manager Contribution to Excess Return %
Aberdeen Standard GARS	$49,095,019	5.8%	-0.3%
Acadian MAAR Fund LLC	$82,593,530	9.8%	0.2%
CFM Systematic Global Macro	$97,221,639	11.6%	1.1%
Graham Quant Macro	$105,072,621	12.5%	0.9%
PIMCO MAARS Fund LP	$98,751,020	11.7%	0.8%
Private Equity	$408,182,534	48.5%	0.1%
Actual vs. Policy Weight Difference			-0.2%
Total	**$840,916,364**	**100.0%**	**2.6%**

Statistics Summary

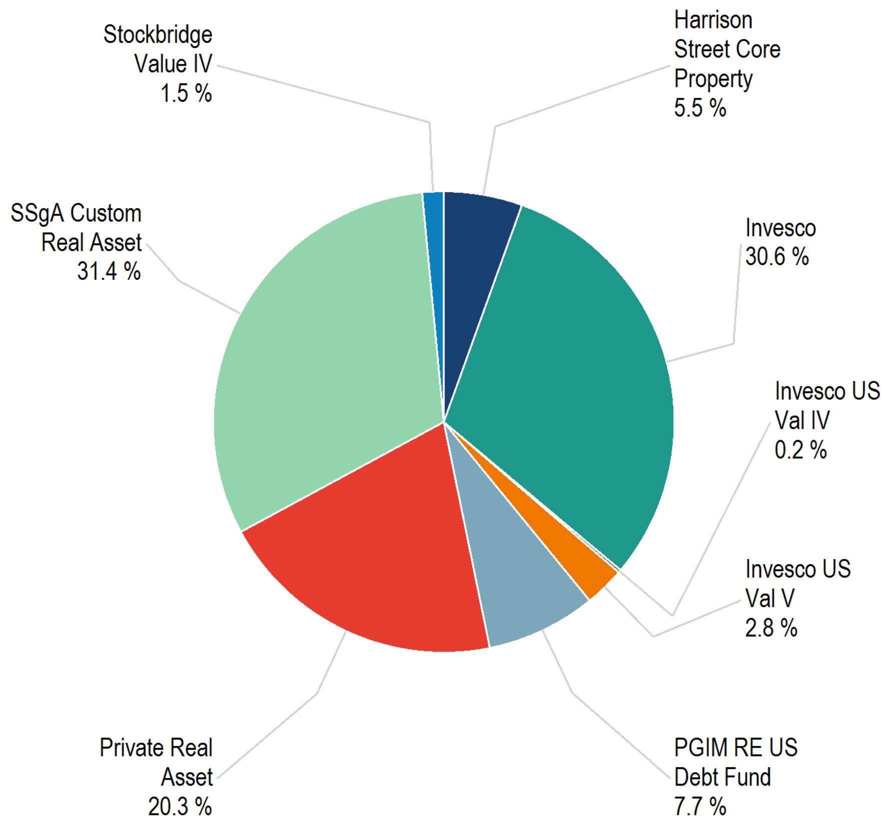
3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Alternatives	18.1%	15.0%	1.2	0.4	14.7%
Blended Alternatives Index	12.6%	8.7%	1.4	--	0.0%
Private Equity	33.0%	26.0%	1.3	0.5	25.7%
Blended Private Equity Index	21.3%	17.9%	1.2	--	0.0%
Hedge Fund/Absolute Return	0.9%	7.4%	0.0	-0.5	7.4%
Absolute Return Custom Index	4.6%	0.2%	16.6	--	0.0%
Aberdeen Standard GARS	0.1%	5.0%	-0.1	-0.9	5.0%
Absolute Return Custom Index	4.6%	0.2%	16.6	--	0.0%

Statistics Summary

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Alternatives	12.1%	12.1%	0.9	0.1	12.0%
Blended Alternatives Index	11.5%	8.0%	1.3	--	0.0%
Private Equity	24.2%	20.7%	1.1	0.3	21.1%
Blended Private Equity Index	17.8%	16.2%	1.0	--	0.0%
Hedge Fund/Absolute Return	-1.4%	6.5%	-0.4	-1.0	6.6%
Absolute Return Custom Index	5.1%	0.3%	14.2	--	0.0%
Aberdeen Standard GARS	0.5%	4.7%	-0.1	-1.0	4.7%
Absolute Return Custom Index	5.1%	0.3%	14.2	--	0.0%



	Actual $	Actual %	Manager Contribution to Excess Return %
Harrison Street Core Property	$61,153,198	5.5%	0.1%
Invesco	$339,129,671	30.6%	0.0%
Invesco US Val IV	$2,174,468	0.2%	0.0%
Invesco US Val V	$31,109,956	2.8%	-0.1%
PGIM RE US Debt Fund	$85,891,507	7.7%	-0.3%
Stockbridge Value IV	$16,527,824	1.5%	-0.1%
Private Real Asset	$224,961,495	20.3%	-0.8%
SSgA Custom Real Asset	$348,874,791	31.4%	0.0%
Actual vs. Policy Weight Difference			-2.1%
Total	**$1,109,822,910**	**100.0%**	**-3.3%**

Statistics Summary

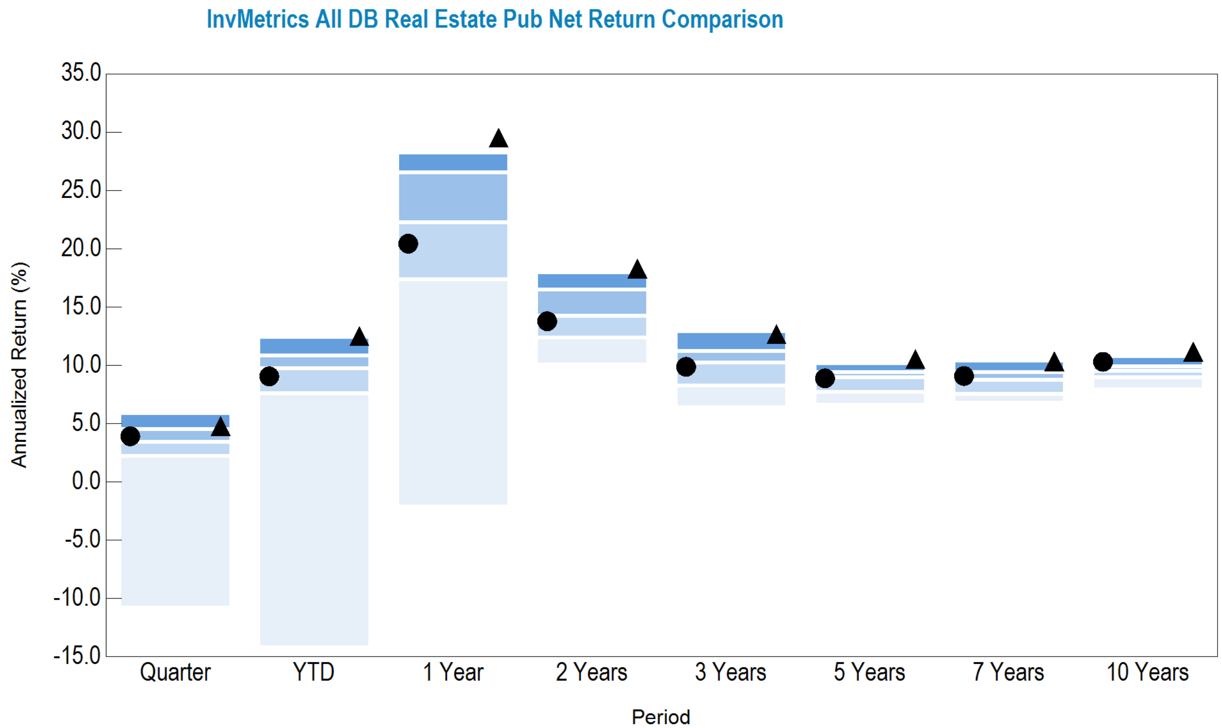
3 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error
Inflation Hedge	6.8%	7.7%	0.8	-1.1	4.4%
Blended Inflation Hedge Index	11.6%	7.7%	1.4	--	0.0%
Real Estate	9.9%	5.9%	1.6	-1.0	2.8%
NCREIF ODCE	12.7%	7.8%	1.6	--	0.0%
Invesco	11.3%	7.9%	1.4	-0.6	2.5%
NCREIF ODCE	12.7%	7.8%	1.6	--	0.0%
Invesco US Val IV	5.8%	7.5%	0.7	-0.8	8.7%
NCREIF ODCE	12.7%	7.8%	1.6	--	0.0%
Invesco US Val V	13.3%	9.4%	1.4	0.1	7.0%
NCREIF ODCE	12.7%	7.8%	1.6	--	0.0%
PGIM RE US Debt Fund	5.2%	1.5%	3.1	-1.0	7.6%
NCREIF ODCE	12.7%	7.8%	1.6	--	0.0%
Private Real Asset	13.4%	13.0%	1.0	0.1	22.3%
Blended Private Real Asset Index	11.5%	20.1%	0.5	--	0.0%
Public Real Assets	1.6%	19.8%	0.1	-1.0	4.2%
Blended Public Real Asset Index	5.9%	16.8%	0.3	--	0.0%
SSgA Custom Real Asset	5.9%	16.6%	0.3	0.0	0.9%
SSgA Custom Real Asset Index	5.9%	16.8%	0.3	--	0.0%

Statistics Summary

5 Years

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio	Tracking Error Rank
Inflation Hedge	5.9%	6.5%	0.8	-1.0	--
Blended Inflation Hedge Index	9.4%	6.5%	1.3	--	--
Real Estate	8.9%	5.0%	1.6	-0.7	36
NCREIF ODCE	10.5%	6.3%	1.5	--	1
Invesco	9.7%	6.4%	1.3	-0.4	--
NCREIF ODCE	10.5%	6.3%	1.5	--	--
Invesco US Val IV	8.2%	6.8%	1.1	-0.3	--
NCREIF ODCE	10.5%	6.3%	1.5	--	--
Private Real Asset	5.3%	12.0%	0.4	-0.2	--
Blended Private Real Asset Index	9.0%	17.1%	0.5	--	--
Public Real Assets	2.7%	16.9%	0.1	-0.9	--
Blended Public Real Asset Index	5.7%	14.6%	0.3	--	--
SSgA Custom Real Asset	5.8%	14.5%	0.3	0.1	--
SSgA Custom Real Asset Index	5.7%	14.6%	0.3	--	--



	Return (Rank)															
5th Percentile	5.9		12.4		28.2		17.9		12.9		10.2		10.4		10.8	
25th Percentile	4.5		10.8		26.6		16.5		11.3		9.4		9.4		9.9	
Median	3.5		9.8		22.3		14.3		10.3		9.0		8.8		9.5	
75th Percentile	2.2		7.6		17.4		12.4		8.3		7.8		7.6		9.0	
95th Percentile	-10.7		-14.2		-2.1		10.1		6.4		6.6		6.8		8.0	
# of Portfolios	65		65		65		65		65		61		61		55	
● Real Estate	3.9	(44)	9.0	(60)	20.4	(60)	13.8	(62)	9.9	(60)	8.9	(55)	9.1	(35)	10.3	(15)
▲ NCREIF ODCE	4.8	(20)	12.5	(5)	29.5	(2)	18.3	(5)	12.7	(6)	10.5	(3)	10.3	(6)	11.2	(4)

Aberdeen Standard (ASI) Global Absolute Return Strategy (GARS)

The Aberdeen Standard Global Absolute Return Strategy (GARS) was designed in 2005 to address the needs of Standard Life's own Defined Benefit pension plan, with an objective to generate absolute returns with significantly less volatility than equity investments. The GARS investment process is designed to capitalize on an array of research and investment techniques and draws together the team's three-year investment insights. The team then examines and reviews position proposals to approve a high conviction, short list of positions that should work well together. The GARS strategy is built using a broad range of return-seeking positions (i.e. multi-strategy) that incorporate multiple risk views when constructing the portfolio. The strategy will take some directional risk at times if the portfolio management team believes that it will earn positive returns over their three-year time horizon. Given the scale of the GARS portfolio, the team requires all investment positions to be both scalable and suitably liquid. In addition, the strategy's risk-based approach requires the team to be able to reliably model the risk behavior of each selected investment, so all assets used must be well-understood from a risk perspective before going into the portfolio.

Acadian Asset Management – Acadian U.S. Managed Volatility

Acadian's goal is to build a portfolio focused on absolute return and risk with the aim of achieving an absolute return similar to or better than that of a domestic equity index but with lower volatility over the long term. Acadian targets absolute risk to be 25-35% less than a typical capitalization-weighted benchmark. That said, tracking error is not a major consideration and can appear relatively high due in part to Acadian's comfort with carrying large sector variations versus the benchmark. Acadian seeks to combine the values of all of the security-level factors to determine a peer-relative return forecast for each stock. Separately they make a top-down forecast for the stock's peer group, and then add that forecast to the stock's score. Acadian's managed volatility strategies utilize the same alpha forecasts as Acadian's active equity strategies but with risk being the initial consideration when constructing portfolios. Alpha forecasts play a modest role relative to the importance of risk estimates but are important to the goal of achieving a higher risk-adjusted return. Incorporation of alpha forecasts generally results in higher exposure to value, size and quality.

Acadian Asset Management – MAARS Fund

Acadian Multi-Asset Absolute Return (MAARS) strategy was incepted in November 2017. MAARS targets a volatility of 6%-8% and a return of cash plus 5%. This is a multi-factor strategy that aims to exploit behavioral inefficiencies within and across global markets and is designed to be diversifying, dynamic and defensive. It is market neutral, implemented using long and short positions across five primary asset classes (equity, fixed income, currency, commodities, and volatility) and over 100 underlying assets with a focus on liquid instruments. Return forecasts incorporate asset-specific and macroeconomic insights and are utilized to harvest active returns from within and across asset classes through market selection and directional positioning. The strategy integrates risk and return across asset classes. Avoidance of downside events is highlighted in the approach with a greater weighting in their models allocated to down market beneficiaries, such as quality factors, and asymmetric positioning which reduces positions when risk rises. Differentiated attributes of this approach are its approach and weighting to commodities and its volatility sleeve which can incorporate long volatility.

Angelo, Gordon & Co. – AG Opportunistic Whole Loan Fund

The Angelo Gordon Opportunistic Whole Loan (OWL) Fund was established to make investments primarily in a portfolio of non-performing loans (NPLs) and re-performing loans (RPLs). AG sees a lot of operational inefficiency in the market place. By acquiring these loans at a discounted price and replacing original servicers with better-focused special servicers, AG believes it can improve operational efficiency and generate attractive returns. In addition, OWL may also include investments in new residential mortgage loans and excess mortgage servicing rights. Opportunistic investments in commercial mortgage loans and other mortgage related investments may also be included in the Fund's portfolio. OWL is towards the end of its fund life and is continuing to sell down the fund's holdings and distribute proceeds to LPs.

Angelo, Gordon & Co. – Credit Solutions

The Angelo Gordon (AG) Credit Solutions Fund (CSF) expects to hold concentrated positions of 5-8% of NAV (averaging 30 positions over the life of the Fund with recycling). The Fund is targeting a net 15% IRR with a 5-7% current yield. The Fund should be 70% concentrated in the U.S. with the balance in Europe. Finally, while the opportunities can be sourced from both the public markets and the private markets, AG is finding compelling sources of return at this time through structuring new privately placed secured term loans out of public investments made by the firm. CSF will address corporate credit-based opportunities created in three main areas: 1) trading-based price dislocations that reduce creation multiples (price through the debt that must be repaid before value accrues to other stakeholders) while generating high current income; 2) opportunities in issuers tied to industries directly impacted by COVID-19 where the market's perception of the impact differs from the actual impact; and 3) corporate debt issuers that will be materially impacted by the pandemic and will need to restructure, but whose creation value is materially lower than the issuer's intrinsic value.

Angelo, Gordon & Co. – CSF (Annex) Dislocation

Angelo Gordon completed syndication of its AG Credit Solutions Fund ("CSF") in December of 2019. CSF was designed to capture opportunities in a late-cycle credit market and the initial stages of a market dislocation. Angelo Gordon designed and documented CSF to allow the placement of an annex fund in times of dislocation and credit deterioration. Given the price movements in the credit markets in March of 2020, driven by the lack of liquidity, financing needs of investment grade and non-investment grade borrowers, and anticipated impacts (restructurings, rescue financings, liquidations, etc.), Angelo Gordon came to market with the $1.8 billion AG CSF Annex Dislocation Fund ("ADF"). ADF's investment aim is to target senior securities of world-class businesses with irreplaceable assets and strong cash flow profiles which, because of market stress, can be purchased at a material discount to what they believe is a company's long-term intrinsic value. ADF will address corporate credit-based opportunities created in three main areas: 1) trading-based price dislocations that reduce creation multiples (price through the debt that must be repaid before value accrues to other stakeholders) while generating high current income; 2) opportunities in issuers tied to industries directly impacted by COVID-19 where the market's perception of the impact differs from the actual impact; and 3) corporate debt issuers that will be materially impacted by the pandemic and will need to restructure, but whose creation value is materially lower than the issuer's intrinsic value.

Angelo, Gordon & Co. – Credit Solutions II

Like its predecessor funds, the Angelo Gordon (AG) Credit Solutions Fund II (CSF II) is an all-weather, solutions-based strategy that targets net returns of 14+% with 5-7% current yield. The Fund will invest in single-name opportunities where price movements and credit documents afford creative financing solutions. This could include companies with upcoming debt maturities, working capital issues, or inefficient capital structures that are inflating financing costs. In these cases, AG will seek to work with management and other creditors to structure a bespoke transaction that avoids bankruptcy and solves the issue for the company in exchange for debt securities with conservative attachment points and healthy yield. While the opportunities are likely to be sourced 75% from the public markets and 25% from the private markets, the "solutions" will likely be private products. During periods of dislocation, the Fund can pivot towards trading-oriented strategies where there is not a need for additional financing, such as sourcing debt in the secondary markets at discounts to intrinsic value. CSF II expects to hold concentrated positions of 5-8% of NAV (averaging 30 positions over the life of the Fund with recycling). The fund should be 70% concentrated in the U.S. with the balance in Europe.

Baillie Gifford – ACWI ex US Focus Equities

ACWI ex US Focus is a fundamental growth strategy. Research is organized primarily by regional teams, with each member of the ACWI ex US Focus Portfolio Construction Group representing a regional team. Four global sector groups also contribute research. Baillie Gifford conducts approximately 2000 company meetings annually both in Edinburgh and onsite. Companies are evaluated on their growth opportunity relative to the average company, their ability to execute on that opportunity, and the degree to which probability of future success is already valued by the market. Baillie Gifford's basic philosophy is that share prices ultimately follow earnings. They believe that the stock market has a recurring tendency to under-appreciate the value of long-term compound growth. The process seeks to add value through use of proprietary fundamental research to identify companies exhibiting some combination of sustained above average growth, and attractive financial characteristics. The portfolio generally holds 60-90stocks, with country and sector weights +/-10% relative to the index and stock weights +/- 5% relative to the index.

Beach Point Capital Management, L.P. - Beach Point Select Fund

Beach Point Select Fund is a commingled fund vehicle within the firm's Opportunistic Credit strategy. This fund focuses on off-the-run, complex, and less-liquid securities. It is a best ideas portfolio of distressed debt, special situations, private/direct loans, catalyst-driven high yield bonds and bank loans, and credit-informed equities with a North American and European focus. The Select Fund differs from other funds and accounts in the Opportunistic Credit strategy by pursuing a more concentrated portfolio and emphasizing a higher percentage of less-liquid/private investments. Beach Point invests up and down the entire capital structure and it constructs portfolios with a bottom-up, research-driven approach that also takes into account top-down macro considerations. Its investment process includes idea generation, detailed credit analysis, relative value decision making and investment selection, portfolio construction and on-going monitoring. The ultimate goal of its investment process is to produce a well-diversified investment portfolio with limited downside risk and substantial upside potential.

BlackRock – MSCI ACWI ex US IMI Index

The ACWI ex US IMI Index Fund seeks to replicate the return of the MSCI ACWI ex US IMI Index. This index represents the developed equity markets outside of North America, including small cap equity. BlackRock monitors their funds daily to ensure that additions and deletions to the indexes, mergers and acquisitions, restructurings and other capitalization changes are made to the fund in such a way as to minimize tracking error and transactions costs.

BlackRock – Russell 1000 Index

The Russell 1000 Index Fund tracks large U.S. companies and achieve broad diversification with low costs by fully replicating the Russell 1000 Index. BlackRock monitors their funds daily to ensure that additions and deletions to the indexes, mergers and acquisitions, restructurings and other capitalization changes are made to the fund in such a way as to minimize tracking error and transactions costs.

BlackRock (formerly Tennenbaum Capital Partners) - Direct Lending Funds VIII and IX

TCP Direct Lending Fund VIII is a private investment fund managed by Tennenbaum Capital Partners ("TCP"). The Fund is designed to continue TCP's successful strategy of investing in privately-originated, performing senior secured debt primarily in North America-based companies with target enterprise values between $100 million and $1.5 billion. The Fund will include positions in 1st lien, 2nd lien and unitranche debt, with a preference for floating-rate debt, which TCP believes provides better flexibility to adapt to market conditions. TCP's direct lending strategy has generated attractive investment opportunities across market cycles, as evidenced by the Firm's prior direct lending track record. Fund VIII targets an unlevered annual yield of approximately 9-12%, with its return primarily driven by current income. SamCERA committed $35 million to DLF VIII in June 2016 in its unlevered fund sleeve and $35 million to the DLF IX in June 2019.

Brigade – Opportunistic Credit

Opportunistic Credit is a fundamental, bottom-up strategy focused on high yield corporate bonds and bank loans with tactical allocations to structured securities, convertibles, and other sectors of the bond markets as they become attractive on a relative value basis. While performing credits represent the majority, Brigade will invest up to 35% of the portfolio in distressed securities and restructuring situations if these types of opportunities are attractive on a risk-adjusted basis and the timing is right with respect to the credit cycle. The portfolio is comprised of mostly North American issuers, but they are not restricted geographically and expect to have a moderate allocation to Europe over time. Although the portfolio is generally long-only, Brigade has the ability to implement a limited amount of tactical macro hedges.

CFM - Systematic Global Macro

Capital Fund Management (CFM) Systematic Global Macro (SCM) is a directional strategy that takes long and short positions in liquid future and forwards across 130+ markets and across equities, bonds, currencies, and commodities. It is a new strategy that draws on model signals from existing strategies at the firm – Discus (diversified CTA), CFM ISTrends (trend following) and CFM ISTrend Equity Capped (defensive trend following) - and SamCERA is a seed investor with an attractive fee. SGM's objective is to provide absolute returns that are uncorrelated with traditional asset classes over a long time horizon with an annualized volatility target between 8% and 12%. SGM uses a diverse set of trading strategies that are based on factors (momentum, value, carry, macro and sentiment) across asset classes. These technical and fundamental factors operate at different time scales and can have varying degrees of influence on performance depending on market and economic conditions. An additional global macro defensive overlay is combined with these outputs in constructing the final portfolio. CFM uses a form of portfolio construction known as agnostic risk parity to ensure that the SGM portfolio is diversified on an out-of-sample basis. The goal of SGM is to generate consistent returns while limiting drawdowns.

DE Shaw – DE Shaw US Broad Market Core Alpha Extension Fund

The D. E. Shaw group believes that there exist some market inefficiencies that may be identified through quantitative analysis, advanced technology, and the insight of practitioners. Identifying these inefficiencies involves a process of hypothesis formulation, testing, and validation. Importantly, to avoid data-mining, the hypothesis formulation precedes the analysis of the historical data. D.E. Shaw's Structured Equity strategies rely largely on quantitative and computational investment techniques developed by the D. E. Shaw over the last two decades in the course of research conducted for purposes of managing the firm's hedge funds. D.E. Shaw's investment process involves a suite of quantitative models, each designed to capitalize on a distinct and uncorrelated set of market inefficiencies. Some of these models are technical in nature and involve price and volume inputs. Other models rely on fundamental data, such as figures gleaned from corporate balance sheets or income statements. Still others, again quantitative, anticipate or react to a particular corporate event or set of events. These models typically operate with forecast horizons of a few weeks to many months. The ability to trade on shorter-term signals distinguishes D.E. Shaw from many of its long only and 130/30 peers. Portfolio construction involves the use of a proprietary optimizer which runs dynamically throughout the trading day. The portfolio is broadly diversified with several hundred long and short positions. Over- and under-weighting of sectors and industries relative to the benchmark will be quite modest, with the intention that most of the alpha be generated by security selection. The US Broad Market Core Alpha Extension Fund is a 130/30 strategy which maintains a beta that is approximately neutral to the Russell 1000 Index.

DoubleLine – Securitized Income

The DoubleLine Securitized Income strategy is an actively managed, liquid, long only, intermediate-term fixed income product. The primary objective of the strategy is to seek and maximize current income and total return by utilizing a combination of Agency MBS and structured credit. The DoubleLine Structured Products team aims to offer clients investment grade exposure to both interest rate duration and credit spread to provide a more attractive total return profile compared to the benchmark. Securitized Income seeks to maximize income and total return by investing across the structured products universe, focusing on agency mortgage-backed securities (MBS) and investment grade securitized credit. DoubleLine takes a barbelled approach to investing in the securitized market, and they will separate rates from credit and will adjust the allocations to both at the based on the economic cycle and opportunities. Duration positioning is achieved through Agency MBS, Agency CMBS, and treasuries while credit exposure is attained through all areas of structured credit.

Fidelity (FIAM) – Broad Market Duration Commingled Pool

Pyramis' Broad Market Duration (BMD) investment strategy seeks to achieve absolute and risk-adjusted returns in excess of the BC U.S. Aggregate Index, focusing its investments in US Treasuries, agencies, investment grade corporate bonds, mortgage-backed and asset-backed securities. The BMD commingled pool can also hold small, opportunistic positions in out-of-benchmark securities, such as inflation-linked bonds. The investable universe includes all US dollar denominated, investment grade debt securities. The BMD investment approach emphasizes issuer and sector valuation and individual security selection. Through the integration of fundamental and quantitative research and trading, the BMD strategy is implemented in a team environment. Risk management technology is utilized to explicitly quantify benchmark exposures on a daily basis, and Pyramis uses the same analytical framework to assess both index and portfolio risk. Tracking error should range between 40 and 60 basis points per annum over the benchmark, and stringent portfolio construction risk control rules are strictly adhered to.

Franklin Templeton Investments – Global Fixed Income

Franklin Templeton manages the global bond mandate in an unconstrained fashion using a top-down, fundamental framework. In the short term and on a country-by-country basis there are often inefficiencies in global bond and currency markets, however, over the longer term the market will generally price to fundamentals. Thus, FT focuses on fundamental research to identify long-term opportunities and uses short-term market inefficiencies to build positions in such investments. The investment and portfolio construction process begin with the determination of the Fund's or institutional client's investment objectives, resulting in a set of risk-return parameters and exposure limits within which the portfolio is managed. Next the firm's global economic outlook for the industrialized countries is developed, with a focus on interest rate and exchange rate forecasts. The portfolio's interest rate outlook is a function of global general equilibrium macroeconomic analysis as well as country-specific research. Macroeconomic conditions in the G-3 economies are analyzed first, primarily with respect to how current and projected growth and inflation dynamics are expected to influence monetary policy. This analysis is then extended out to the rest of the industrialized countries (G-13) as well as emerging markets, which results in broad targets for cash, duration, currencies and the developed/emerging market mix. Using the firm's interest rate and exchange rate outlook, probability-weighted horizon returns for bonds of various countries are then calculated. This analysis is used to establish specific country weights and duration targets based on risk-adjusted expected total return measured in the portfolio's base currency. Analysis of emerging markets includes sovereign credit analysis along with greater emphasis on capital flows, inter-market dynamics and trends in the level of risk aversion in the market.

Graham – Quant Macro Fund

Graham Quant Macro ("GQM") is a directional, long and short strategy that utilizes fundamental and price-based indicators to establish return forecasts across global interest rates, foreign exchange, stock indices and commodities. The strategy incorporates a variety of submodels that generate macro fundamental forecasts, assess yield and earnings differentials, compare current valuations relative to historic fair value, and analyze directional price trends across markets. Quantitative risk management and portfolio construction techniques are used to diversify risk across the portfolio and enhance risk-adjusted returns. Historically, the average holding period has been approximately eight to ten weeks, although the sub-models will make daily adjustments to positions. The strategy is designed to have low correlation to traditional markets and other alternative strategies and has the potential to provide significant portfolio diversification benefits.

Harrison Street Core Property

Based in Chicago, Harrison Street's exclusive focus since inception in 2005 has been investing in non-core property sectors of the real estate market. The Harrison Street Core Fund is an open-end fund that invests primarily in stabilized education, healthcare, and self-storage real estate assets in the United States using modest leverage with an emphasis on generating current income. The focus on these alternative property types is intended to concentrate on areas of the real estate market that are less GDP sensitive with demand drivers that are more demographic driven such as aging populations, education growth and healthcare delivery. Each of these areas tend to be less tied to the business cycle, have fragmented ownership and more operationally intensive. The fund acts as a diversifier within real estate portfolios with sector exposures that are not a typical focus of other core ODCE funds.

INVESCO Realty Advisors – INVESCO Core Equity, LLC

SamCERA is a founding member of INVESCO's open-end Core Equity real estate fund and rolled its separate account properties into the fund. INVESCO Core Equity, LLC (the "Fund") is a perpetual life, open-end vehicle which invests in a diversified portfolio of institutional quality office, retail, industrial and multifamily residential real estate assets. The Fund buys core properties that are located within the United States, typically requiring an investment of $10 million or more. The portfolio cannot be more than 30% leveraged.

INVESCO Realty Advisors – INVESCO US Val IV

Invesco has provided SamCERA with Core Real Estate exposure since 2004 through the Invesco Core Equity Fund. The Invesco real estate team manages around $62B in assets with investments and offices around the globe. Invesco Value Fund IV looks to acquire fundamentally sound but broken "core" assets that can be repositioned into institutional-quality, income producing properties. Investments are limited to direct equity interests in office, multi-family, retail and industrial properties across the US. The Fund is expected to be geographically concentrated in U.S. gateway cities and top 25 Metropolitan Statistical Areas (MSA's). Invesco Value Fund IV provides a complement to the more conservative Invesco Core Fund and offers the potential of enhanced returns to the SamCERA Real Estate portfolio.

INVESCO Realty Advisors – INVESCO US Val V

Invesco has provided SamCERA with Core Real Estate exposure since 2004 through the Invesco Core Equity Fund and through the Invesco US Value IV Fund since December 2015. The Invesco real estate team manages around $62B in assets with investments and offices around the globe. Invesco Value Fund V will be similar to the Value Add IV and look to acquire fundamentally sound but broken "core" assets that can be repositioned into institutional-quality, income producing properties. Investments will be limited to direct equity interests in office, multi-family, retail and industrial properties across the US. The Fund is expected to be geographically concentrated in U.S. gateway cities and top 25 Metropolitan Statistical Areas (MSA's).

Mondrian Investment Partners – International Equity

Mondrian is a value-oriented, defensive manager whose investment philosophy is based on the principle that investments must be evaluated for their fundamental long-term value. The firm's philosophy involves three stated investment objectives: 1) provide a rate of return meaningfully greater than the client's domestic rate of inflation, 2) structure client portfolios that preserve capital during protracted international market declines, and 3) provide portfolio performance that is less volatile than benchmark indices and other international managers. Mondrian applies typical value screening criteria to a universe of 1,500 stocks, from which 500 are selected for more detailed work. Through fundamental research, and the deliberations of the Investment Committee, the universe is further reduced to a list of 150 stocks. The investment team conducts detailed fundamental analysis on the remaining stocks, a process which includes applying the firm's dividend discount model consistently across all markets and industries. Mondrian also uses a purchasing power parity model to give an accurate currency comparison of the value of the stocks under consideration. The firm will only consider buying stocks in countries with good investor protection practices and relatively simple repatriation procedures. A computer-based optimization program is employed in the portfolio construction process. Mondrian's portfolio holds 80-125 issues.

NISA – Core Bond

NISA applies a risk-controlled approach to all of its fixed income portfolios. This approach does not permit large bets or positions that generate significant tracking error versus the benchmark. Instead, NISA invests in a large number of small, diversified, active positions which seek tight tracking error to the chosen benchmark. Benchmark weight is a significant consideration when constructing and managing portfolios. The investment strategy is comprised of strategic (top-down) and tactical (bottom-up) decisions. Strategic decisions include sector selection and yield curve positioning while tactical decisions include industry and security selection and trading activity. Review of both strategic and tactical decisions is continual. The amount of portfolio risk budget devoted to one aspect versus the other will change as market conditions warrant. In general, strategic decisions change relatively infrequently, while tactical decisions, especially security selection, will change fairly often as market conditions provide opportunities. Over a typical market cycle, the bottom-up is expected to contribute to 70% of value-added while top-down is roughly 30%.

PanAgora Asset Management – Defensive U.S. Equity Low Volatility

PanAgora's Defensive Equity strategy seeks to harness the 'low-volatility premium' through a systematic, factor-based investment approach focused on achieving market-like returns with less risk. This is accomplished by leveraging PanAgora's proprietary Risk Parity portfolio construction methodology, which seeks to efficiently capture the equity premium associated with low volatility, while taking minimal unintended risks. Since the firm's inception, PanAgora has been using quantitative techniques to integrate fundamental insights with large amounts of dynamic market data. They score individual securities on a factor basis and also on a diversification basis, in the context of a broadly diversified portfolio. The portfolio construction process optimizes the portfolio around the intended factor exposure (volatility) while maintaining equal risk contribution across sectors (ex., overweight utilities and consumer staples, underweight financials and technology). Shorter term volatility and longer term correlation analysis is combined in the approach. The result for the US Defensive Equity strategy is a portfolio expected to have lower volatility (beta around 0.65-0.75), and similar returns relative to the capitalization-weighted benchmark over a full market cycle. PanAgora expects the strategy to participate in approximately 75% of up markets and 55% in down markets.

Parametric Overlay – Cash Overlay and Currency Hedge

Parametric's cash overlay program is an efficient way for SamCERA to maintain its target asset allocation in a systematic fashion through cash securitization at the fund and manager level, transition/reallocation support and asset class rebalancing back to target within defined bands. The cash overlay program is invested synthetically using liquid futures with cash balances reviewed daily. A combination of large and small cap futures implementation is the proxy for private equity. SamCERA's investment guidelines initially allowed only for cash overlay. Rebalancing was added to the SamCERA program in January 2014. Cash overlay and rebalancing is expected to add 10-20 bps to the portfolio over time. An additional currency overlay hedge placed on half of the notional value of developed international equities. The addition of currency hedging started in September 2018 and was fully implemented on 10/1/2019. The purpose of the currency is first and foremost to lower portfolio risk and secondarily to add incremental performance.

PIMCO Diversified

PIMCO's Diversified Income (DI) Fund is a multi-sector strategy that invests across a broad spectrum of global credit market sectors, including investment grade and high yield corporate debt, as well as emerging markets. The allocation among these will vary based on PIMCO's assessment of global trends and relative valuations. This active and dynamic approach allows for increased responsiveness in asset allocation to changing economic and market conditions while remaining anchored by PIMCO's investment process and longer-term orientation. The ability to invest globally helps to improve diversification and may allow investors to benefit from differences in business cycles across regions and credit quality trends across credit sectors. PIMCO's DI investment strategy seeks to provide high yield-like returns with lower volatility against a blended index (1/3 Bloomberg Barclays Global Agg Credit ex-EM; 1/3 BofA Merrill Lynch BB-B rated Developed Markets High Yield; 1/3 JPMorgan EMBI Global). The fund allows for a duration band of 3-8 years. The team focuses its investments into these groups: credit strategies (investment grade, high yield, emerging markets and non-core credits including MBS, municipals and other govt-related sectors); duration strategies (U.S. and non-U.S. duration) and currencies (tactical non-USD exposure).

PIMCO – MAARS

PIMCO MAARS is an alternative risk premia strategy that looks for risks associated with: (1) Supply and Demand Constraints, (2) Behavioral Biases, and (3) Asymmetric Risks (event risk). As reflected in the design of the MAARS strategies, PIMCO believes that alternative risk premia strategies are best implemented using a systematic approach that minimizes the discretionary inputs in day-to-day portfolio management. MAARS places a greater emphasis and weighting on global interest rates, currencies and commodities and a lesser emphasis on equities than many of its Alt Beta peers. Relative to Alt Beta peers, the strategy's rates and currency (FX) models are particularly robust, reflective of PIMCO's core competency and long history managing these asset classes using derivative instruments.

PIMCO Private Income Fund

PIMCO Private Income Fund (PIF) uses an opportunistic and flexible approach to global private credit. PIF provides a total return oriented global credit exposure utilizing both top-down sector relative value and bottom up security selection. The strategy invests across private residential, commercial, corporate and specialty finance markets. PIMCO's Private Income Fund (PIF) is targeting 8-12% net returns with income providing most of the fund's returns. The Private Income Investment Committee (IC) identifies market themes and direction for their relative value framework, and sector specialists provide recommendations to the PM team within that construct. PIF has the ability to invest throughout the capitalization structure. The fund can use a moderate amount of leverage to enhance portfolio returns (1.5 times with a hard cap of 2 times).

PGIM RE Debt

PGIM Real Estate US Debt Fund (PREDS) focuses on a loan origination strategy with a mix of 20% senior long duration loans on stable assets, 60% senior short/medium duration loans on stable and transitional assets, and 20% mezzanine mid/long duration debt. SamCERA was a founding investor in the PREDS strategy which invests in US commercial real estate debt in an open-ended vehicle with a return target of 7-8% (gross) coming from stable current income. The fund makes investments in first lien mortgages and mezzanine debt. First lien mortgages can be floating rate or fixed rate, but only floating rate loans will use leverage. Subordinate investments (mezzanine debt and preferred equity) will be limited by design. The fund can source and invest in secondary loans through a variety of Prudential real estate professionals, but the primary focus will be on direct origination through the real estate finance team.

Quantitative Management Associates – QMA Small-Cap Core

Quantitative Management Associates (QMA) utilizes a bottom-up quantitative framework in order provide a diversified exposure to core U.S. small-cap stocks, while attempting to produce consistent outperformance versus the benchmark with moderate tracking error levels. QMA uses an adaptive, systematic investment process to exploit opportunities created by mispriced securities to consistently add value over long time periods. Bottom-up stock selection drives exposure to key sources of alpha (valuation, growth, and quality). The QMA stock selection model adapts to changes in company growth rates and market environments by putting more emphasis on valuation for slowly growing companies, and more emphasis on future growth projections for companies with higher projected growth rates.

State Street Global Advisors (SSgA) Custom Real Asset

SSgA Custom Real Asset portfolio uses a portfolio of liquid real assets to proxy private real assets. The portfolio is comprised of equal weightings of the Bloomberg Roll Select Commodity Index, S&P Global Mid-Large Cap Natural Resources Index, S&P Global Infrastructure Index, and Bloomberg Barclays TIPS Index. SSgA provides beta exposure through these underlying liquid components which can be customized to changing client needs (ex., TIPS was added in May 2020 with the other three parts of the portfolio reduced pro-rata). The portfolio is used to fund upcoming private real asset mandates.

Stockbridge Value IV

Stockbridge Value IV will implement a value-added strategy that will seek to own assets that are undervalued, underutilized, and/or not operating to their full potential. The manager will add value with their internal asset management team through active strategies including additional capital investment, leasing, recapitalization, renovation and/or development. The fund will target three to five year holding periods for investments, with disposition taking place after the completion of the value-add strategy. The fund will target 15 to 25 mid-sized investments, diversified by geography and property type. The strategy will target 21 markets in the United States in which the firm has boots on the ground coverage with dedicated acquisitions professionals and asset managers responsible for knowing each market extensively with a vast network of relationships.

Western Asset Management – Total Return Unconstrained (TRU)

Western Asset's Total Return Unconstrained strategy (TRU) seeks to provide bond-like risk and return over the long term but does not have a benchmark. This allows for asset allocation based on value rather than using the construction of a benchmark as baseline positioning. The investment approach is active with very broad latitude on duration (-3 to +8 years) and on asset allocation across all of the eligible sectors in a core plus mandate. The portfolio must have at least 50% of its holdings in investment-grade securities. The flexibility offered by this strategy allows for defensive positioning in rising rate environments and opportunistic deployment of capital when value opportunities arise. It also allows the portfolio managers to emphasize (or deemphasize) either credit or rates when one or the other appears to offer greater (or lesser) value.um non-US exposure.

White Oak - White Oak Yield Spectrum Fund

The White Oak Yield Spectrum Fund's objective is to earn substantial current income by originating, extending, and/or investing in a diversified portfolio of primarily senior secured corporate credit and debt instruments consisting of term loans, asset-based loans and equipment leases and loans issued by small to middle-market companies located primarily in the United States and Canada. It focuses on providing self-originated deals for predominantly non-sponsored, privately-held borrowers.

White Oak - White Oak Yield Spectrum Fund V

The White Oak Yield Spectrum Fund's objective is to earn substantial current income by originating, extending, and/or investing in a diversified portfolio of primarily senior secured corporate credit and debt instruments consisting of term loans, asset-based loans and equipment leases and loans issued by small to middle-market companies located primarily in the United States and Canada. It focuses on providing self-originated deals for predominantly non-sponsored, privately-held borrowers.

Total Plan Policy Index	As of 2/1/21	1/1/21	7/1/20	4/1/20	10/1/19	7/1/19	4/1/19	1/1/19	10/1/18	4/1/18	10/1/17	2/1/17	1/1/17
10 Year Treasury +2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
60/40 MSCI World/Bloomberg Global Aggregate (RP)	0.0%	0.0%	0.0%	4.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
60/40 Russell 3000/Bloomberg US Aggregate (RP)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
91 Day T-Bills	1.0%	1.0%	1.0%	1.0%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg Aggregate	18.0%	21.0%	21.0%	18.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	14.0%	12.0%	10.0%
Bloomberg BA Intermediate HY	10.0%	10.0%	10.0%	8.0%	8.0%	7.0%	7.0%	7.0%	7.0%	7.0%	7.0%	6.0%	6.0%
Bloomberg BBB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg Credit BAA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg Multiverse	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.0%	3.0%
Bloomberg TIPS	0.0%	0.0%	0.0%	0.0%	1.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Bloomberg Commodity	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Citigroup non-US WGBI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
CPI + 5% (RA)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Blended Public Real Asset	4.0%	4.0%	4.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	0.0%	0.0%	0.0%
Blended Private Real Asset	4.0%	3.0%	3.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	8.0%	7.0%	5.0%
Libor +4% (HF)	0.0%	0.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	5.0%
SOFR +4% (HF)	7.0%	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex US IMI 100% Hedged (Net)	9.5%	9.0%	9.0%	9.0%	9.0%	7.6%	5.7%	3.8%	1.9%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US IMI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	19.0%	19.0%
MSCI ACWI ex-US IMI (Net)	9.5%	9.0%	9.0%	9.0%	9.0%	11.4%	13.3%	15.2%	17.1%	19.0%	19.0%	0.0%	0.0%
MSCI EAFE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
NCREIF ODCE	9.0%	10.0%	10.0%	9.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	7.0%	7.0%
NCREIF Property	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 1000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 1000 Value	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 2000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 3000	22.0%	21.0%	21.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	21.0%	21.0%	23.0%	28.0%
Russell 3000 +3% (PE)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.0%	7.0%	7.0%
Russell 3000 +3% 1Q Lag (PE)	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%	7.0%	0.0%	0.0%	0.0%
S&P 500	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Total Plan Policy Index	As of: 10/1/16	9/1/16	1/1/16	7/1/14	1/1/14	2/1/13	1/1/11	10/1/10	1/1/09	5/1/07	6/1/00	3/1/99	9/1/98	7/1/96
10 Year Treasury +2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.0%	10.0%	10.0%
60/40 MSCI World/Bloomberg Global Aggregate (RP)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
60/40 Russell 3000/Bloomberg US Aggregate (RP)	8.0%	8.0%	8.0%	8.0%	8.0%	6.0%	6.0%	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
91 Day T-Bills	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg Aggregate	10.0%	10.0%	10.0%	10.0%	9.3%	11.0%	11.0%	12.9%	27.0%	27.0%	29.0%	25.0%	21.0%	21.0%
Bloomberg BA Intermediate HY	6.0%	5.0%	5.0%	5.0%	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg BBB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg Credit BAA	0.0%	0.0%	0.0%	0.0%	0.0%	3.5%	3.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg Multiverse	3.0%	3.0%	3.0%	3.0%	3.8%	4.4%	4.4%	4.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg TIPS	2.0%	2.0%	2.0%	2.0%	2.0%	3.1%	3.3%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg Commodity	0.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Citigroup non-US WGBI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	9.0%	9.0%
CPI + 5% (RA)	0.0%	2.0%	2.0%	2.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Blended Public Real Asset	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Blended Private Real Asset	5.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Libor +4% (HF)	5.0%	5.0%	5.0%	4.0%	4.0%	3.0%	3.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
SOFR +4% (HF)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US	0.0%	0.0%	0.0%	0.0%	0.0%	18.0%	18.0%	18.0%	21.0%	21.0%	15.0%	0.0%	0.0%	0.0%
MSCI ACWI ex US IMI 100% Hedged (Net)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US IMI	19.0%	20.0%	20.0%	20.0%	20.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US IMI (Net)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI EAFE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.0%	20.0%	20.0%
NCREIF ODCE	7.0%	7.0%	7.0%	6.0%	6.0%	5.0%	5.0%	5.0%	6.0%	0.0%	0.0%	0.0%	0.0%	0.0%
NCREIF Property	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	6.0%	6.0%	0.0%	0.0%	0.0%
Russell 1000	0.0%	0.0%	24.0%	24.0%	24.0%	28.0%	28.0%	28.0%	37.0%	37.0%	40.0%	22.0%	20.0%	20.0%
Russell 1000 Value	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	5.0%	0.0%
Russell 2000	0.0%	0.0%	4.0%	6.0%	6.0%	7.0%	7.0%	7.0%	9.0%	9.0%	10.0%	15.0%	15.0%	15.0%
Russell 3000	28.0%	28.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 3000 +3% (PE)	7.0%	7.0%	7.0%	7.0%	7.0%	8.0%	8.0%	8.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 3000 +3% 1Q Lag (PE)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
S&P 500	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Public Equity Benchmark	As of: 2/1/21	7/1/20	10/1/19	7/1/19	4/1/19	1/1/19	10/1/18	10/1/17	2/1/17	10/1/16	9/1/16	1/1/16	1/1/14	10/1/10	5/1/07	6/1/00	3/1/99	9/1/98	1/1/96
MSCI ACWI ex-US	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	34.0%	31.3%	23.1%	0.0%	0.0%	0.0%
MSCI ACWI ex US IMI 100% Hedged (Net)	23.2%	23.1%	22.5%	18.5%	13.9%	9.3%	4.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex-US IMI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	47.5%	45.2%	40.4%	41.7%	41.7%	40.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI ACWI ex US IMI (Net)	23.2%	23.1%	22.5%	27.8%	32.4%	37.0%	41.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
MSCI EAFE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	32.3%	33.3%	33.3%
Russell 1000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	48.0%	52.8%	55.2%	61.5%	35.5%	33.3%	33.3%
Russell 1000 Value	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.0%	8.4%	0.0%
Russell 2000	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.3%	12.0%	13.2%	13.5%	15.4%	24.2%	25.0%	25.0%
Russell 3000	53.7%	53.9%	55.0%	53.7%	53.7%	53.7%	53.7%	52.5%	54.8%	59.6%	58.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
S&P 500	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.4%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

US Equity Benchmark	As of: 9/1/16	1/1/16	6/1/00	3/1/99	9/1/98	7/1/96	1/1/95
Russell 1000	0.0%	85.7%	80.0%	52.0%	50.0%	50.0%	69.0%
Russell 1000 Value	0.0%	0.0%	0.0%	12.0%	12.5%	0.0%	0.0%
Russell 2000	0.0%	14.3%	20.0%	36.0%	37.5%	37.5%	14.0%
Russell 3000	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
S & P 500	0.0%	0.0%	0.0%	0.0%	0.0%	12.5%	17.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

International Equity Benchmark	As of: 10/1/19	7/1/19	4/1/19	1/1/19	10/1/18	10/1/17	1/1/14	6/1/00	1/1/96
MSCI ACWI ex US	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%
MSCI ACWI ex US IMI 100% Hedged (Net)	50.0%	40.0%	30.0%	20.0%	10.0%	0.0%	0.0%	100.0%	0.0%
MSCI ACWI ex US IMI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0.0%	0.0%
MSCI ACWI ex US IMI (Net)	50.0%	60.0%	70.0%	80.0%	90.0%	100.0%	0.0%	0.0%	0.0%
MSCI EAFE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Fixed Income Benchmark	As of: 2/1/21	7/1/20	4/1/20	10/1/19	10/1/17	2/1/17	10/1/16	4/1/16	7/1/14	1/1/14	2/1/13	1/1/11	10/1/10	6/1/00	3/1/99	7/1/96
Bloomberg Aggregate	64.3%	67.7%	69.2%	63.6%	66.7%	57.1%	52.6%	55.5%	50.0%	46.3%	50.0%	50.0%	58.6%	100.0%	83.3%	70.0%
Bloomberg BA Intermediate HY	35.7%	32.3%	30.8%	36.4%	33.3%	28.6%	31.6%	27.8%	25.0%	25.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg BBB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	7.3%	0.0%	0.0%	0.0%
Bloomberg Credit BAA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.0%	15.0%	0.0%	0.0%	0.0%	0.0%
Bloomberg Multiverse	0.0%	0.0%	0.0%	0.0%	0.0%	14.3%	15.8%	16.7%	15.0%	18.8%	20.0%	20.0%	20.5%	0.0%	0.0%	0.0%
Bloomberg TIPS	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	10.0%	10.0%	14.0%	15.0%	13.6%	0.0%	0.0%	0.0%
Citigroup non-US WGBI	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	16.7%	30.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Opportunistic Credit Benchmark	As of: 1/1/14	12/1/09
Bloomberg BA Intermediate HY	100.0%	0.0%
Bloomberg Credit BAA	0.0%	100.0%
	100.0%	100.0%

Alternatives Benchmark	As of: 2/1/21	1/1/21	10/1/18	4/1/18	2/1/17	4/1/16	1/1/16	1/1/14	1/1/11
60/40 Russell 3000/Bloomberg US Aggregate (RP)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	30.0%
Bloomberg Commodity	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	17.7%	18.8%	15.0%
CPI + 5% (RA)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11.8%	12.5%	0.0%
Libor +4% (HF)	0.0%	0.0%	50.0%	46.2%	46.2%	41.7%	29.4%	25.0%	15.0%
SOFR +4% (HF)	53.8%	50.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Russell 3000 +3% (PE)	0.0%	0.0%	0.0%	0.0%	53.8%	58.3%	41.2%	43.8%	40.0%
Russell 3000 +3% 1Q Lag (PE)	46.2%	50.0%	50.0%	53.8%	0.0%	0.0%	0.0%	0.0%	0.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Private Equity Benchmark	As of: 4/1/18	10/1/10
Russell 3000 +3% 1Q Lag	100.0%	0.0%
Russell 3000 +3%	0.0%	100.0%
	100.0%	100.0%

Hedge Fund Benchmark	As of: 1/1/21	10/1/10
Libor +4%	0.00%	100.00%
SOFR +4%	100.0%	0.0%
	100.0%	100.0%

Inflation Hedge	As of: 2/1/21	7/1/20	4/1/20	10/1/19	4/1/18	2/1/17	10/1/16	4/1/16
Bloomberg TIPS	0.00%	0.00%	0.00%	5.88%	11.1%	12.5%	14.3%	14.3%
Bloomberg Commodity	0.00%	0.00%	0.00%	0.00%	0.0%	0.0%	0.0%	21.4%
CPI + 5% (RA)	0.00%	0.00%	0.00%	0.00%	0.0%	0.0%	0.0%	14.3%
Blended Public Real Asset	23.53%	23.53%	35.29%	35.29%	33.3%	0.0%	0.0%	0.0%
Blended Private Real Asset	23.53%	17.65%	11.77%	11.77%	11.1%	43.8%	35.7%	0.0%
NCREIF ODCE	52.94%	58.82%	52.94%	47.06%	44.4%	43.8%	50.0%	50.0%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Public Real Asset Benchmark	As of: 5/1/20	10/1/16	1/1/14
Bloomberg Roll Select Commodity	25.0%	34.0%	0.0%
S&P Global Large-MidCap Commodity and Resources	25.0%	33.0%	0.0%
S&P Global Infrastructure	25.0%	33.0%	0.0%
CPI + 5%	0.0%	0.0%	100.0%
Bloomberg TIPS	25.0%	0.0%	0.0%
	100.0%	100.0%	100.0%

Private Real Asset Benchmark	As of: 1/1/21	4/1/18	10/1/16	1/1/14
Bloomberg Roll Select Commodity	0.00%	0.00%	34.00%	0.0%
S&P Global Large-MidCap Commodity and Resources	0.00%	0.00%	33.00%	0.0%
S&P Global Infrastructure	0.00%	0.00%	33.00%	0.0%
50/50 S&P Global Infra & Lrg-MidCap Com & Resources +2% 1QL	0.00%	100.00%	0.00%	0.0%
75/25 S&P Global Infra & Lrg-MidCap Com & Resources +2% 1QL	100.00%	0.00%	0.00%	0.0%
CPI + 5%	0.00%	0.00%	0.00%	100.0%
	100.0%	100.0%	100.0%	100.0%

Private RA Secondary Benchmark	As of: 9/1/14
Cambridge Associates Private Natural Resources 1 Qtr Lag	50.0%
Cambridge Associates Private Infrastructure 1 Qtr Lag	50.0%
	100.0%

Real Estate Benchmark	As of: 1/1/09	6/1/00	7/1/96
10 Year Treasury +2%	0.0%	0.0%	100.0%
NCREIF ODCE	100.0%	0.0%	0.0%
NCREIF Property	0.0%	100.0%	0.0%
	100.0%	100.0%	100.0%

Baillie Gifford Benchmark	**As of:**	
	1/1/14	**5/1/12**
MSCI ACWI ex-US	100.0%	0.0%
MSCI EAFE	0.0%	100.0%
	100.0%	**100.0%**

Baillie Gifford Secondary Benchmark	**As of:**	
	1/1/14	**5/1/12**
MSCI ACWI ex-US Growth	100.0%	0.0%
MSCI EAFE Growth	0.0%	100.0%
	100.0%	**100.0%**

Brigade Secondary Benchmark	**As of:**
	8/1/10
Bloomberg High Yield	50.0%
Credit Suisse Leveraged Loans	50.0%
	100.0%

PIMCO Diversified	**As of:**
	9/1/17
JPMorgan EMBI Global	33.333%
BofAMLBB-BRatedDvlpdMktsHYHdgdUSD	33.333%
Global Agg Credit Ex EM USD hedged	33.334%
	100.0%

SSgA Custom Real Asset	**As of:**	
	5/1/20	**11/1/16**
Bloomberg Roll Select Commodity	25.00%	33.33%
S&P Global Large-MidCap Commodity and Resources	25.00%	33.33%
S&P Global Infrastructure	25.00%	33.34%
Bloomberg TIPS	25.00%	0.00%
	100.0%	**100.0%**

Acadian Asset Management

First $50 million:	0.27% per annum
Next $50 million:	0.225% per annum
Thereafter:	0.18% per annum

Baillie Gifford

First $25 million:	0.60% per annum
Next $75 million:	0.50% per annum
Next $300 million:	0.40% per annum
Thereafter:	0.30% per annum

BlackRock-Russell 1000 Index Fund

On All Assets:	0.01% per annum

BlackRock-MSCI ACWI ex US IMI Index Fund

On All Assets:	0.045% per annum

DoubleLine

On All Assets:	0.30% per annum

NISA

First $500 million:	0.15% per annum
Next $1 billion:	0.125% per annum
Next $1 billion:	0.105% per annum
Next $1.5 billion	0.085% per annum
Thereafter:	0.065% per annum

Franklin Templeton Investment

First $50 million:	0.40% per annum
Next $50 million:	0.30% per annum
Thereafter:	0.25% per annum

FIAM Bond

First $50 million:	0.25% per annum
Next $50 million:	0.20% per annum
Next $100 million:	0.125% per annum
Thereafter:	0.10% per annum

PanAgora Asset Management

First $50 million:	0.25% per annum
Next $50 million:	0.15% per annum
Thereafter:	0.10% per annum

Parametric Overlay

First $50 million:	0.12% per annum
Next $100 million:	0.10% per annum
Thereafter:	0.05% per annum
Plus monthly reporting fee of $1500	

Parametric Currency Overlay

First $250 million:	0.05% per annum
Thereafter:	0.03% per annum

PIMCO Diversified

On All Assets:	0.75% per annum

QMA

First $100 million:	0.55% per annum
Next $100 million:	0.53% per annum
Thereafter:	0.49% per annum

Western Asset Management

On All Assets:	0.25% per annum
Performance Fee:	20.00%

Mondrian Investment Partners

First $50 million:	1.00% per annum
Next $150 million:	0.19% per annum
Thereafter:	0.33% per annum

Name	Primary Benchmark	Rule 1	Rule 2	Rule 3
Acadian US MGD V	Russell 1000	--	--	--
DE Shaw	Russell 1000	⚐	✓	⚐
PanAgora Defuseq	Russell 1000	--	--	--
PGIM Quant Solutions	Russell 2000	⚐	⚐	⚐
Baillie Gifford	MSCI ACWI ex US	⚐	⚐	⚐
Mondrian	MSCI ACWI ex USA Value Gross	⚐	⚐	⚐
DoubleLine	Bloomberg US Aggregate TR	--	--	--
FIAM Bond	Bloomberg US Aggregate TR	✓	✓	✓
NISA Core Bond	Bloomberg US Aggregate TR	--	--	--
Western TRU	3-Month Libor Total Return USD	⚐	⚐	⚐
AG CSF II	Bloomberg BA Intermediate HY	--	--	--
Angelo Gordon Opportunistic	Bloomberg US Aggregate TR	✓	--	✓
Angelo Gordon Credit Solutions	Bloomberg BA Intermediate HY	--	--	--
Beach Point Select	Bloomberg BA Intermediate HY	✓	✓	✓
Brigade Capital	Bloomberg BA Intermediate HY	✓	✓	✓
PIMCO Diversified	Blended PIMCO Diversified Index	--	--	--
Franklin Templeton	Bloomberg Multiverse TR	--	--	--
Blackrock DL Feeder IX-U	Cliffwater Direct Lending Index	--	--	--
PIMCO Private Income	Bloomberg BA Intermediate HY	--	--	--
TCP Direct Lending VIII	Cliffwater Direct Lending Index	⚐	✓	✓
White Oak Yield	Cliffwater Direct Lending Index	⚐	✓	⚐
White Oak YSF V	Cliffwater Direct Lending Index	--	--	--
Aberdeen Standard GARS	Absolute Return Custom Index	⚐	⚐	⚐
Acadian MAAR Fund LLC	Absolute Return Custom Index	--	--	--
CFM Systematic Global Macro	Absolute Return Custom Index	--	--	--
Graham Quant Macro	Absolute Return Custom Index	--	--	--
PIMCO MAARS Fund LP	Absolute Return Custom Index	--	--	--

Rule 1 - Manager has underperformed the benchmark index for the five year period.
Rule 2 - Manager has underperformed the 50th percentile in the appropriate style universe for the five year period.
Rule 3 - Excess 5 Year Sharpe Ratio vs. Benchmark is positive

Name	Primary Benchmark	Rule 1	Rule 2	Rule 3
Acadian US MGD V	Russell 1000	--	--	--
DE Shaw	Russell 1000	⚑	✓	⚑
PanAgora Defuseq	Russell 1000	--	--	--
PGIM Quant Solutions	Russell 2000	⚑	⚑	⚑
Baillie Gifford	MSCI ACWI ex US	⚑	⚑	⚑
Mondrian	MSCI ACWI ex USA Value Gross	⚑	✓	⚑
DoubleLine	Bloomberg US Aggregate TR	--	--	--
FIAM Bond	Bloomberg US Aggregate TR	✓	✓	✓
NISA Core Bond	Bloomberg US Aggregate TR	--	--	--
Western TRU	3-Month Libor Total Return USD	⚑	⚑	⚑
AG CSF II	Bloomberg BA Intermediate HY	--	--	--
Angelo Gordon Opportunistic	Bloomberg US Aggregate TR	✓	--	✓
Angelo Gordon Credit Solutions	Bloomberg BA Intermediate HY	--	--	--
Beach Point Select	Bloomberg BA Intermediate HY	✓	✓	✓
Brigade Capital	Bloomberg BA Intermediate HY	✓	✓	✓
PIMCO Diversified	Blended PIMCO Diversified Index	--	--	--
Franklin Templeton	Bloomberg Multiverse TR	--	--	--
Blackrock DL Feeder IX-U	Cliffwater Direct Lending Index	--	--	--
PIMCO Private Income	Bloomberg BA Intermediate HY	--	--	--
TCP Direct Lending VIII	Cliffwater Direct Lending Index	⚑	✓	✓
White Oak Yield	Cliffwater Direct Lending Index	⚑	✓	⚑
White Oak YSF V	Cliffwater Direct Lending Index	--	--	--
Aberdeen Standard GARS	Absolute Return Custom Index	⚑	⚑	⚑
Acadian MAAR Fund LLC	Absolute Return Custom Index	--	--	--
CFM Systematic Global Macro	Absolute Return Custom Index	--	--	--
Graham Quant Macro	Absolute Return Custom Index	--	--	--
PIMCO MAARS Fund LP	Absolute Return Custom Index	--	--	--

Rule 1 - Manager has underperformed the benchmark index for the five year period.
Rule 2 - Manager has underperformed the 50th percentile in the appropriate style universe for the five year period.
Rule 3 - Excess 5 Year Sharpe Ratio vs. Benchmark is positive

Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

3RD QUARTER 2022
Investment Landscape

Recent Verus research

Visit: https://www.verusinvestments.com/insights/

Topics of interest papers

A CLOSER LOOK AT CHINA

China's ascension over the past twenty years to the second largest economy in the world has changed the global landscape in a variety of ways. As China's economic size and market capitalization grows, many investors have reasonably been pondering how to treat their allocations to Chinese assets. In this Topic of Interest white paper, we offer some potential opportunities and threats around Chinese investment that should help provide context to investors in their decisions around this market.

A PRIMER: TIMBERLAND & FARMLAND

In this Topic of Interest white paper, we will aim to inform readers of the investment thesis for timberland and agriculture, detailing the return drivers and characteristics unique to each asset class. Next, we cover historical performance and how these asset classes might fit within institutional portfolios and contribute to portfolio return objectives. Here we touch on the commonly acknowledged issues around interpreting the volatility of private market assets, due to data lag and appraisal-smoothing effects. Last, we conclude with a Verus outlook on both Timberland and Agriculture in the current market environment.

Annual research

2022 REAL ASSETS OUTLOOK

For the first time in decades, high inflation has emerged and is creating challenges for consumers and investors. We believe inflation will likely begin falling later in 2022, though notable inflationary and deflationary forces are in play, and it is difficult to gauge which of these forces will have greater impacts. While inflation remains the topic most discussed in the media, and among many investors, how the Fed responds and whether the tightening path overcorrects is an issue we are discussing more today. Learning from history and the actions of the Volker Fed, we would not rule out the possibility that this inflation cycle quickly turns into deflation as recessionary forces take hold.

Verus business update

Since our last Investment Landscape webinar:

— Verus hired several new employees. **John Santopadre, CFA**, Director | Portfolio Management; **Colleen Flannery,** Associate Director | Public Markets; **Lukas Seeley**, Performance Analyst; **James Wadner**, Performance Analyst; **Jonah Coffee**, Performance Analyst; and **Nicholas Pecache**, Performance Analyst.

— The firm continues to grow with new clients that stretch from Hawaii to South Carolina. We now proudly serve clients in 26 states in every domestic time zone.

— Recent research found at *verusinvestments.com/insights*

- In May, we released our ***2022 Real Assets Outlook***
- In June, we published a ***Primer on Mortgage Income*** and ***A Primer: Timberland & Farmland***
- Earlier this month, we released a *Topics of Interest* paper on ***A Closer Look at China***

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2nd quarter summary

THE ECONOMIC CLIMATE

— U.S. real GDP fell again during Q2, down -0.9% annualized (+1.6% over the past full year). This stoked broad fears of recession, as two consecutive quarters of negative growth is a common definition of technical recession. ***p. 8***

— U.S. real personal consumption slowed to pre-COVID rates of growth, coming in at 2.1% year-over-year in May. The buying habits of consumers appear to have transitioned back towards services and away from goods, reversing the unprecedented spending shift that had occurred during the pandemic. This trend should help mitigate strained supply chains, as fewer goods require shipping. ***p. 13***

PORTFOLIO IMPACTS

— U.S. core CPI slowed to 5.9% year-over-year in June. Headline inflation, which includes food and energy prices, came in surprisingly hot at 9.1% year-over-year, exceeding expectations. Higher energy prices were a major driver of the inflation print, with energy commodities and gasoline moving more than 10% higher from May to June. ***p. 10***

— Credit markets sold off during Q2, impacted by concerns of a slowing economy and possibility of recession as the Fed signaled a willingness to raise rates until inflation slows. Bank loans performed the best at -4.4% and outperformed longer duration bonds such as investment grade and high yield (-7.3% and -9.8%, respectively). ***p. 23***

THE INVESTMENT CLIMATE

— Russia's invasion of Ukraine continued, resulting in heavy losses on both sides. Most fighting has taken place in the east, as Russia gradually advances. Both Finland and Sweden are in the process of joining NATO—a landmark move and result of war likely unforeseen by Russia. ***p. 16***

— Early in 2022 many investors feared a potential global commodity shortage—a product of underinvestment in production capacity in recent years. Russia's invasion of Ukraine further amplified these concerns, pushing commodities higher. This trend appears to have reversed, as recession is a notable possibility, and many commodities have seen sharp losses. ***p. 36***

ASSET ALLOCATION ISSUES

— Nearly every asset class delivered moderate to deeply negative returns during Q2. Global equities saw a -15.7% pullback (MSCI ACWI), fixed income experienced losses as interest rates rose and credit spreads widened (BBG US Aggregate -4.7%, BBG US High Yield -9.8%), and commodities saw a reversal (BBG Commodity -5.7%). ***p. 46***

— Value stocks outperformed Growth stocks by a wide margin again during Q2 (Russell 1000 Value -12.2% vs Russell 1000 Growth -20.9%) as many Growth stocks with lofty valuations were hit by rising rates and risk-off sentiment. Large capitalization stocks slightly outperformed small cap stocks (Russell 1000 -16.7%, Russell 2000 -17.2%). ***p. 29***

Most asset classes delivered further losses during Q2 over fears of inflation and recession

What drove the market in Q2?

"Inflation Surges Heap Pressure on Global Policy Makers"

HEADLINE CONSUMER PRICE INFLATION (YEAR-OVER-YEAR)

Jan	Feb	Mar	Apr	May	Jun
7.5%	7.9%	8.5%	8.3%	8.6%	9.1%

Article Source: Financial Times, April 13th, 2022

"Fed Raises Rates by 0.75%, Largest Increase Since 1994"

FED FUNDS RATE EXPECTED AT YEAR-END 2022

Jan	Feb	Mar	Apr	May	Jun
1.4%	1.4%	2.4%	2.9%	2.7%	3.4%

Article Source: Wall Street Journal, June 15th, 2022

"Risk of Global Recession by End of Year Rises on High Inflation"

IMF U.S. 2022 GDP GROWTH PROJECTIONS

Jul 21	Oct 21	Jan 22	Apr 22	Jun 22	Jul 22
4.9%	5.2%	4.0%	3.7%	2.9%	2.3%

Article Source: Bloomberg, April 11th, 2022

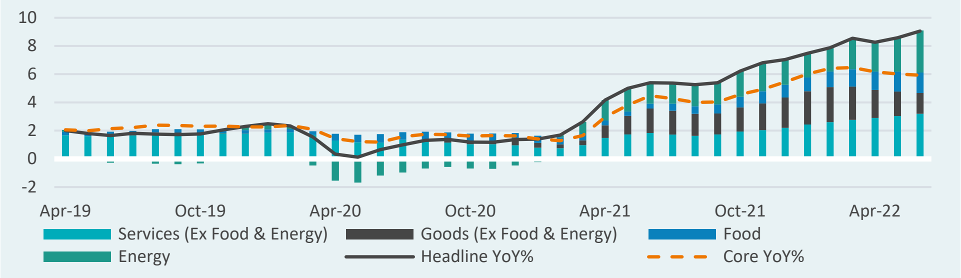
"Consumer Sentiment Plunges to Record Low Amid Surging Inflation"

UNIVERSITY OF MICHIGAN CONSUMER SENTIMENT INDEX

Jan	Fed	Mar	Apr	May	Jun
67.2	62.8	59.4	65.2	58.4	50.0

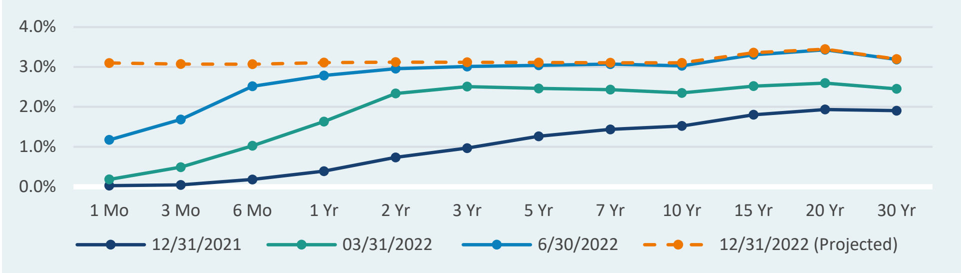
Article Source: CNN, June 10th, 2022

CONTRIBUTION TO HEADLINE CONSUMER PRICE INFLATION



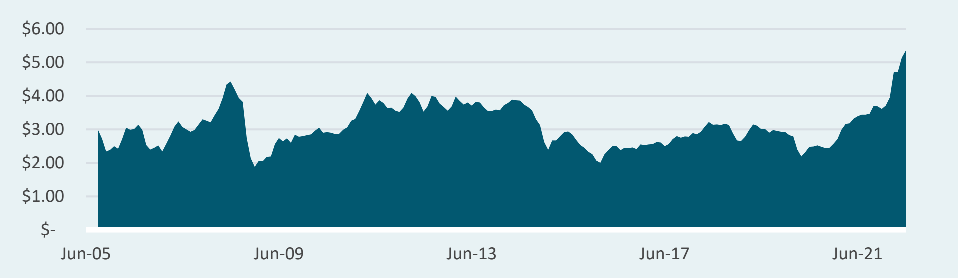
Source: Bureau of Labor Statistics, as of 6/30/22

U.S. TREASURY CURVE MOVEMENT



Source: Bloomberg, as of 6/30/22

AVERAGE U.S. GASOLINE PRICES (PER GALLON)



Source: Bloomberg, as of 6/30/22

Economic environment

U.S. economics summary

— U.S. real GDP fell -0.9% annualized during Q2 (+1.6% over the past full year). Most aspects of economic activity showed decline, including private investment (-2.7%), government spending (-0.3%), and imports (-0.5%). This stoked fears of recession, as two quarters of negative growth is a common definition of technical recession.

— The Federal Reserve's objective of a "soft landing" for the economy appears to have failed. An increasingly aggressive stance during the first half of the year contributed to a broad market selloff. The negative wealth effect of the market selloff, paired with a slowdown in big ticket purchases, has slowed the economy.

— U.S. core CPI, which excludes food & energy prices, slowed to 5.9% year-over-year in June. However, headline inflation which includes food and energy prices, came in surprisingly hot at 9.1% year-over-year, exceeding expectations. Higher energy prices were a major driver of the inflation print, with energy commodities and gasoline moving more than 10% higher just from May to June.

— Unemployment was unchanged at 3.6% during Q2. The broader U-6 unemployment rate tightened from 6.9% to 6.7%. A strong job market likely emboldens the Federal Reserve in its fight against high inflation, as the Fed holds a dual mandate to maximize employment and keep prices stable.

— Consumer sentiment collapsed to the lowest reading on record, according to the University of Michigan survey, which moved from 59.4 to 50.0. Survey respondents across all income, age, education, region, and political affiliation groups displayed deterioration in their outlook for the economy. Nearly half of respondents feel that inflation is damaging living standards.

	Most Recent	**12 Months Prior**
Real GDP *(YoY)*	1.6% *6/30/22*	12.2% *6/30/21*
Inflation *(CPI YoY, Core)*	5.9% *6/30/22*	4.4% *6/30/21*
Expected Inflation *(5yr-5yr forward)*	2.1% *6/30/22*	2.2% *6/30/21*
Fed Funds Target Range	1.50% – 1.75% *6/30/22*	0.00% – 0.25% *6/30/21*
10-Year Rate	2.89% *6/30/22*	1.45% *6/30/21*
U-3 Unemployment	3.6% *6/30/22*	5.9% *6/30/21*
U-6 Unemployment	6.7% *6/30/22*	9.8% *6/30/21*

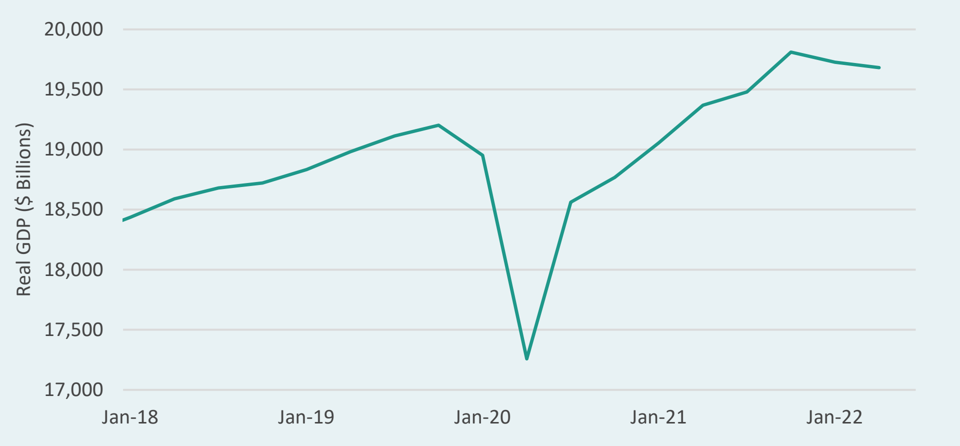
GDP growth

U.S. real GDP fell again in Q2, down -0.9% annualized (+1.6% over the past full year). Most aspects of economic activity showed decline, including private investment (-2.7%), government spending (-0.3%), and imports (-0.5%). This stoked fears of recession, as two consecutive quarters of negative growth is a common definition of technical recession. Interestingly, the definition of "recession" has become hotly debated, with some arguing that the relatively strong labor market suggests no recession. However, every instance of two consecutive quarters of negative GDP growth in modern history has ultimately been classified as an official recession. In other words, it would be extremely unusual if 2022 was not eventually labeled as an official recession.

A variety of economic data indicates further deceleration, and sentiment remains very poor across citizens and businesses. In July, the IMF cut its U.S. 2022 GDP growth forecast from 2.9% to 2.3%. The Federal Reserve's objective of a "soft landing" for the economy appears to have failed. An increasingly aggressive stance throughout the first half of the year contributed to a bear market for equities and other risk assets, as well as sharp losses for bonds. The negative wealth effect of market losses, paired with a slowdown in bigger ticket purchases such as homes and automobiles has created a drop in economic activity.

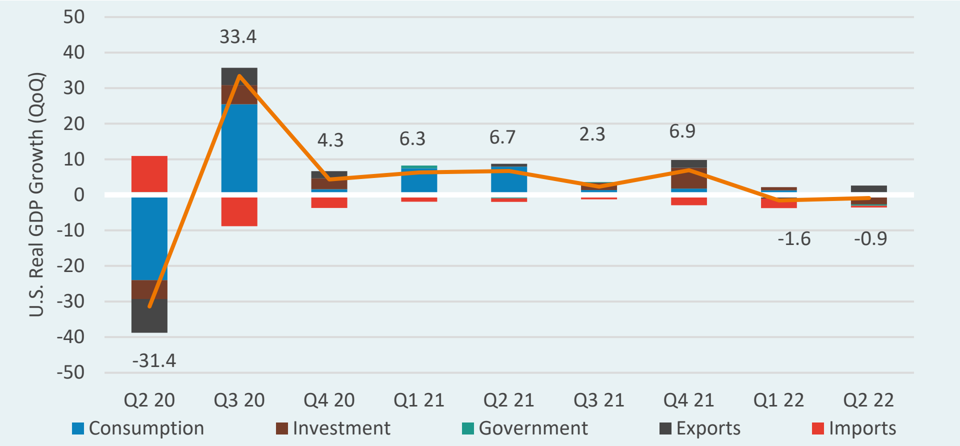
The U.S. has likely entered recession

U.S. REAL GROSS DOMESTIC PRODUCT



Source: FRED, as of 6/30/22

U.S. REAL GDP COMPONENTS (QOQ)



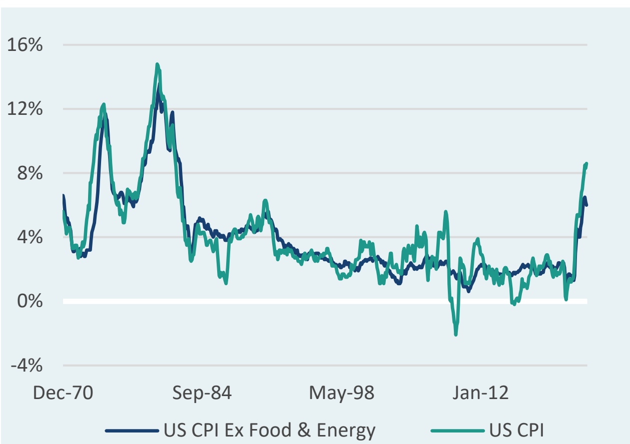
Source: FRED, as of 6/30/22

Inflation

U.S. core CPI, which excludes food & energy prices, slowed to 5.9% year-over-year in June. However, headline inflation which includes food and energy prices, came in surprisingly hot at 9.1% year-over-year, exceeding expectations. Higher energy prices were a major driver of the inflation print, with energy commodities and gasoline moving more than 10% higher from May to June. Inflation has been mixed during the quarter, with April showing very moderate price growth, May showing a hot print across almost all price categories, and then June also surprising to the upside.

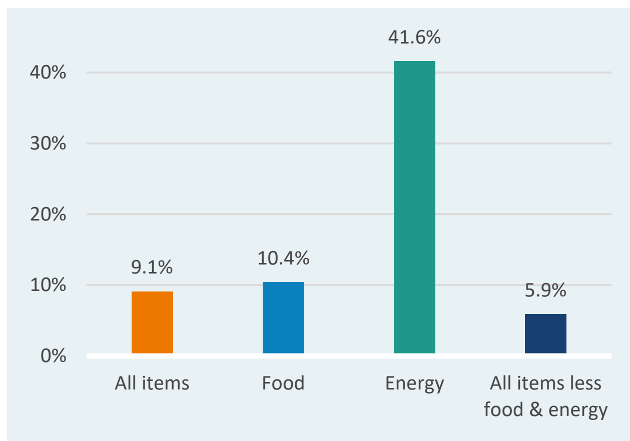
We believe there is a rising chance of economic deceleration coinciding with a drop in inflation. There appear to be a variety of forces that could contribute to this scenario, such as: the recent sharp fall in commodity prices, Federal Reserve tightening which has contributed to a slowdown in consumer demand, further easing of supply chain and shipping problems which reduces cost burdens on businesses, and reports that many businesses have *overbought* inventories which could lead to excesses and the need to offer more attractive pricing for quicker inventory liquidation.

U.S. CPI (YOY)



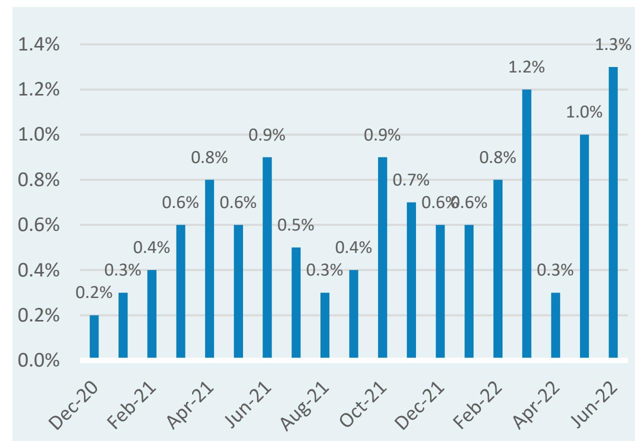
Source: BLS, as of 6/30/22

U.S. CPI (YOY)



Source: BLS, as of 6/30/22

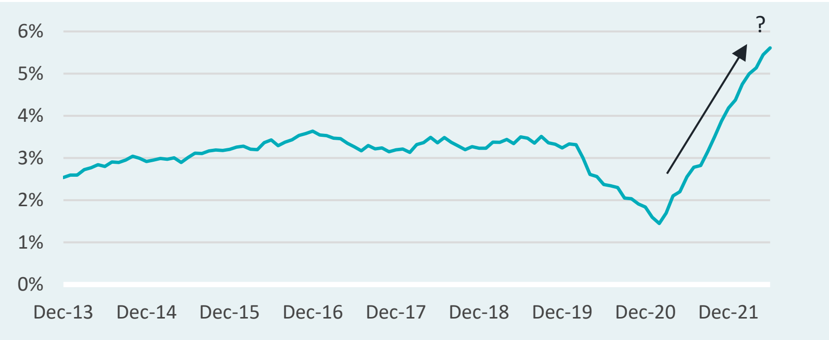
MONTHLY PRICE MOVEMENT



Source: BLS, as of 6/30/22

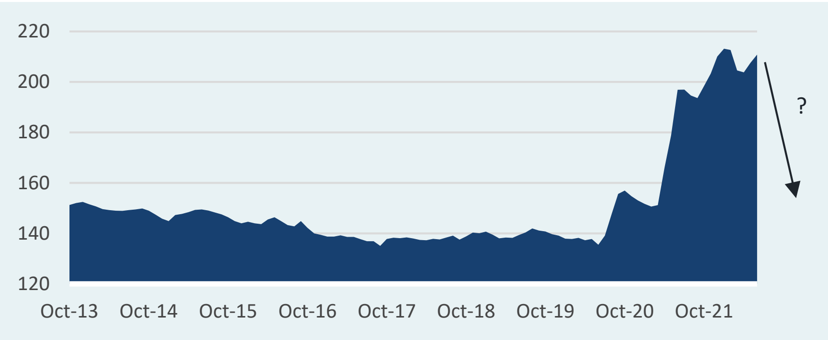
How are inflation conditions evolving?

CPI SHELTER COSTS (YEAR-OVER-YEAR)



Shelter costs, which account for 32% of CPI gauge, have moved considerably higher along with the broader real estate boom. The continuation of this trend could result in a higher floor for inflation near-term. This is possible since shelter CPI is survey-based and slow moving as consumers tend to anchor their survey responses on recent data.

USED CAR & TRUCK PRICES



Used auto prices remain high as the shortage of cars continues. If this pandemic-related price rise reverses, it could bring inflation down materially.

BLOOMBERG COMMODITY SPOT INDEX

Fears of a recession which would hinder the demand for commodities, and likely some easing of uncertainty around Ukraine, have contributed to a sharp drop in commodity prices. If weaker prices persist, the reversal in commodity markets should have a deflationary impact on broader consumer prices, though this effect may take time to flow through to broader prices.

Source: FRED, as of 6/30/22 (upper), Bloomberg, as of 6/30/22 (lower)

FREIGHTOS SHIPPING CONTAINER COST INDEX

Pandemic-related supply and demand complexities contributed to many supply shortages and price spikes. These shipping costs are quickly falling back towards pre-pandemic levels. We would expect the mitigation of shipping problems to have a deflationary effect on prices, assuming businesses begin to pass these cost savings on to customers.

Source: FRED, as of 6/30/22 (upper), Freightos, as of 7/10/22 (lower)

Inflation dynamics are complex. On this slide we take a look at a few potentially *inflationary* forces and *deflationary* forces

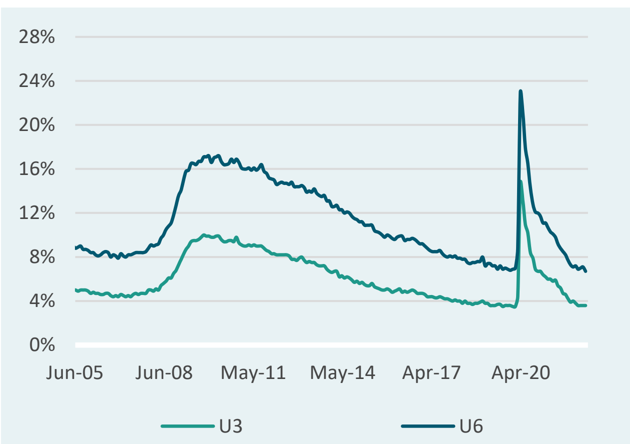
Labor market

The U.S. labor market continues to be strong. Unemployment was unchanged at 3.6% during the quarter. Meanwhile, the broader U-6 unemployment rate, which includes workers who are underemployed and those who are unemployed but have given up looking for work, tightened from 6.9% to 6.7%. Weekly *initial jobless claims* —a measure of the number of workers who filed for unemployment during any given week —moved higher during the quarter from a low of 166,000 in mid-March to 244,000 in early July.

A strong job market likely emboldens the Federal Reserve in its fight against high inflation, as the Fed holds a *dual mandate* to maximize employment and keep prices stable.

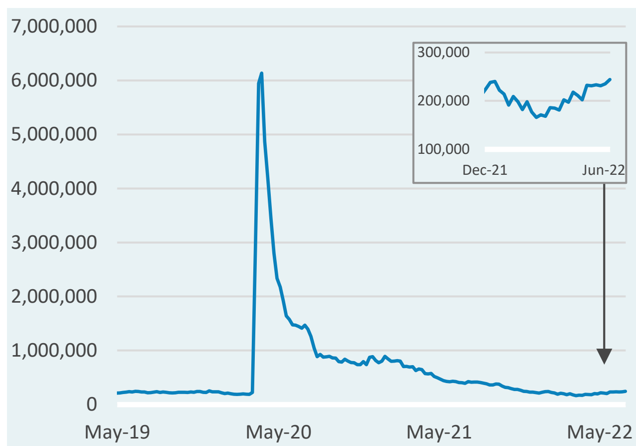
Abnormally early retirements of older workers during the pandemic had a large impact on the overall U.S. labor participation rate. While workers younger than age 55 have gradually gone back to work, much of the age 55+ cohort has not returned to the job market. In fact, more workers in the 55+ age cohort have dropped out of the labor force in 2022 than returned. Overall, there are materially fewer workers available nationwide now relative to pre-pandemic times.

U.S. UNEMPLOYMENT



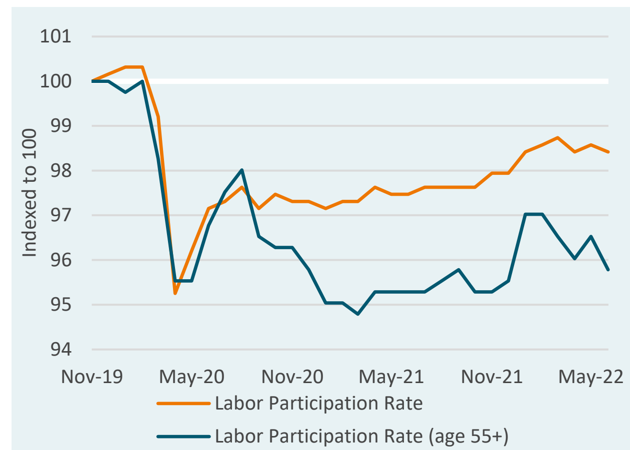
Source: FRED, as of 6/30/22

INITIAL JOBLESS CLAIMS



Source: FRED, as of 7/9/22

U.S. LABOR PARTICIPATION RATE



Source: FRED, as of 6/30/22

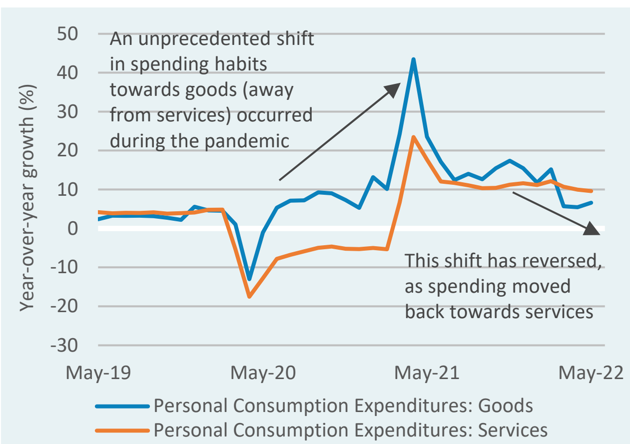
The consumer

U.S. real (inflation-adjusted) personal consumption expenditures slowed to pre-COVID rates of growth, coming in at 2.1% year-over-year in May. The buying habits of consumers appear to have transitioned back towards services and away from goods, reversing the unprecedented spending shift that had occurred during the pandemic. This trend should help mitigate strained supply chains, as fewer goods require shipping.

At the same time overall spending has slowed, savings rates have also dropped to 5.4%—the lowest level since 2009. Less saving but also less spending (inflation-adjusted) may indicate that household budgets are being squeezed by the higher prices of goods and services.

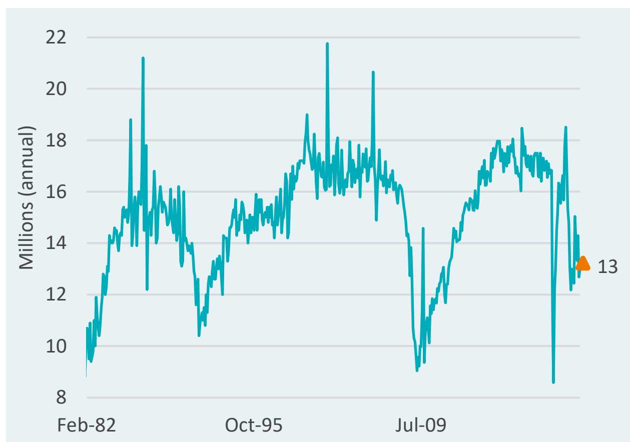
Auto sales activity remains very weak, at levels that have historically occurred during recession. The long-lasting semiconductor shortage has created widespread difficulties for auto manufacturers and has led to skyrocketing used vehicle prices. We also suspect that stimulus checks and heightened spending habits during the pandemic are contributing to the current slowdown, as this spending may have effectively *pulled forward* spending that would have otherwise occurred in years subsequent to the pandemic.

PERSONAL CONSUMPTION EXPENDITURES



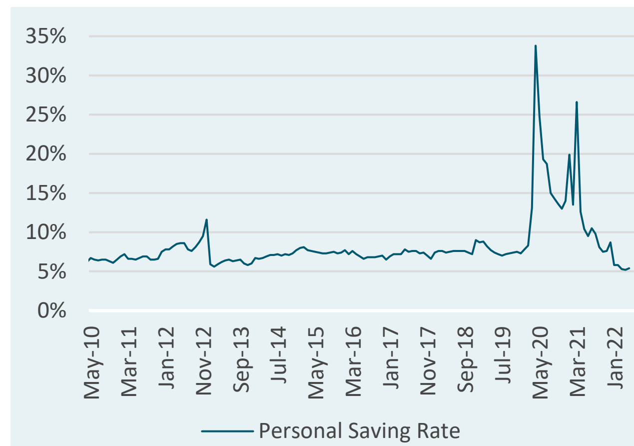
Source: FRED, as of 5/31/22

AUTO SALES



Source: Federal Reserve, as of 6/30/22

PERSONAL SAVINGS RATE



Source: FRED, as of 5/31/22

Sentiment

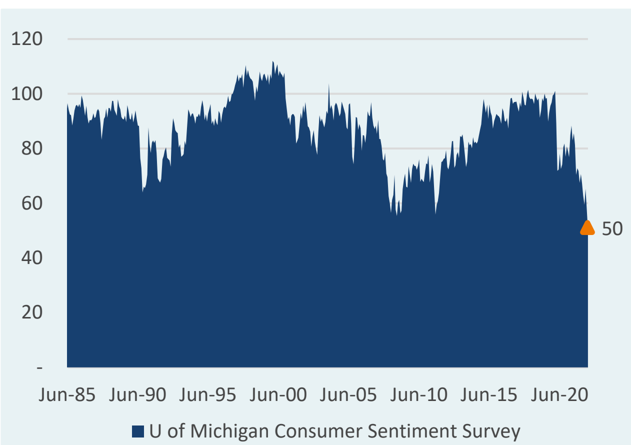
Consumer sentiment collapsed to the lowest reading on record, according to the University of Michigan survey, which fell from 59.4 to 50.0 during Q2. Survey respondents across all income, age, education, region, and political affiliation groups showed deterioration in their outlook for the economy. Nearly half of respondents pointed to inflation as damaging living standards. Around 79% of respondents expected bad times over the next year for business conditions, which was the highest reading since 2009.

In a June Economist/YouGov Poll, more than half of respondents said they believe the U.S. is in recession. Of those respondents, 43% called the recession moderate and 38% called it serious (only 19% called it mild). Interestingly, the survey suggested that most Americans view *the prices they pay for goods and services* as the most important indicator of recession. Much of the blame was generally placed on supply chain issues and COVID-19 for economic woes.

The NFIB Small Business Optimism index dropped substantially to the weakest level in 48 years. According to NFIB, expected business conditions have further weakened in every month of 2022. Twenty-eight percent of small businesses reported that inflation was the greatest problem to business operations. Owners remain pessimistic about the second half of 2022 and foresee supply chain issues, higher input prices, and labor shortages.

Sentiment, by most measures, is extremely poor

CONSUMER SENTIMENT



Source: University of Michigan, as of 6/30/22

WHAT TO BLAME FOR ECONOMIC PROBLEMS?

Source: The Economist / YouGov, June 11-14, 2022
Survey asked "How much, if at all, do you attribute economic problems in the U.S. to the following"?

NFIB SMALL BUSINESS SENTIMENT

Source: NFIB, as of 5/31/22

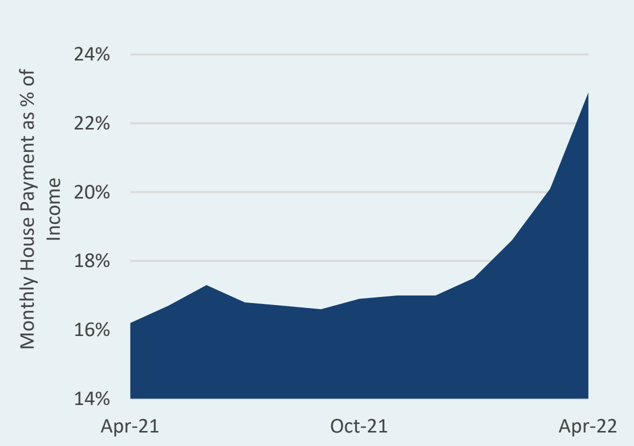
Housing

U.S. home prices rose 2.1% from March to April, continuing steady appreciation. Home prices were 7.9% higher year-to-date, as of April, and 20.3% higher year-over-year. The average 30-year fixed rate mortgage began the year at 2.67% and ended June at 5.70%.

High home prices coupled with a material jump in mortgage interest rates has acted as a double whammy for potential homebuyers. According to the National Association of Realtors, the cost for a family with an average income to buy an average priced home jumped from around 16% of that family's income one year ago, to more than 22% of that family's income in April (a 38% increase in overall cost). Housing and rent prices have contributed to higher inflation.

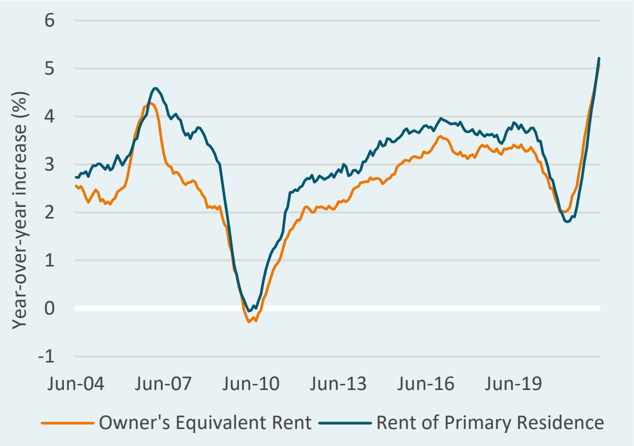
Historically, larger jumps in interest rates resulted in a softening of the real estate market and placed downward pressure on home values, all else equal. This effect appears to be occurring somewhat in recent months, as home sales have fallen to pre-pandemic levels and bidding wars have become less frequent. Conditions may result in a moderation of the real estate market, though continued tight inventory levels could act as an ongoing support to high prices.

CHANGE IN HOUSING AFFORDABILITY



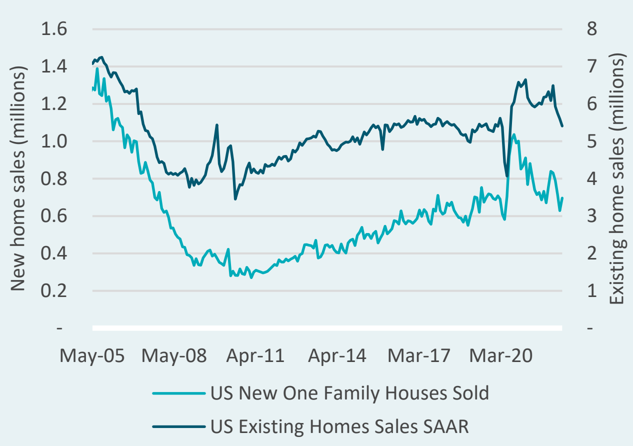
Source: National Association of Realtors, as of 4/30/22
Census Bureau median family income is compared here to the monthly cost (principal + interest) of an average priced home

HOUSING & RENT COSTS



Source: FRED, as of 5/31/22

HOME SALES ACTIVITY



Source: Bloomberg, as of 5/31/22

International economics summary

— Economic growth has moderated in most countries, moving toward average levels. Higher inflation continues to erode growth figures as GDP is typically quoted as *inflation-adjusted* growth.

— Inflation trends continue to be disparate around the world. Japan and China are experiencing very low inflation and muted price pressures, while Europe and the United States are coping with multidecade-high inflation. Countries with low inflation and countries with high inflation all appear to have experienced an uptick during the second quarter.

— Labor markets have been relatively stable in developed markets, with conditions in the Eurozone strengthening. Unemployment in emerging markets were mixed—Brazil and Russia experienced improvement, while India and China saw slight weakening.

— Russia's invasion of Ukraine continued in the second quarter, leading to heavy loss of life on both sides. Most fighting has taken place in the east, as Russia generally gradually pushing forward. Concerns around food shortages in nearby countries that depend on Ukrainian agriculture persist, though many commodity prices that had shot higher in March and April have eased, falling closer to pre-invasion costs.

— During the first week of July, millions of Chinese citizens were put back into lockdown, and subjected to mass testing, as small outbreaks have led to renewed restrictions. China continues to stick to a "zero COVID" approach, which is increasingly at odds with the recognition by most nations that civilization will have to live *with* the virus for the long-term, while moving back to normal life.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	1.6% *6/30/22*	9.1% *6/30/22*	3.6% *6/30/22*
Eurozone	5.4% *3/31/22*	8.6% *6/30/22*	6.6% *5/31/22*
Japan	0.4% *3/31/22*	2.3% *6/30/22*	2.6% *5/31/22*
BRICS Nations	4.4% *3/31/22*	4.6% *6/30/22*	5.2% *12/31/21*
Brazil	1.7% *3/31/22*	11.9% *6/30/22*	9.8% *5/31/22*
Russia	3.5% *3/31/22*	15.9% *6/30/22*	3.9% *5/31/22*
India	4.1% *3/31/22*	7.0% *6/30/22*	7.8% *6/30/22*
China	4.8% *3/31/22*	2.5% *6/30/22*	5.9% *5/31/22*

NOTE: India lacks reliable government unemployment data. Unemployment rate shown above is estimated from the Centre for Monitoring Indian Economy. The Chinese unemployment rate represents the monthly surveyed urban unemployment rate in China.

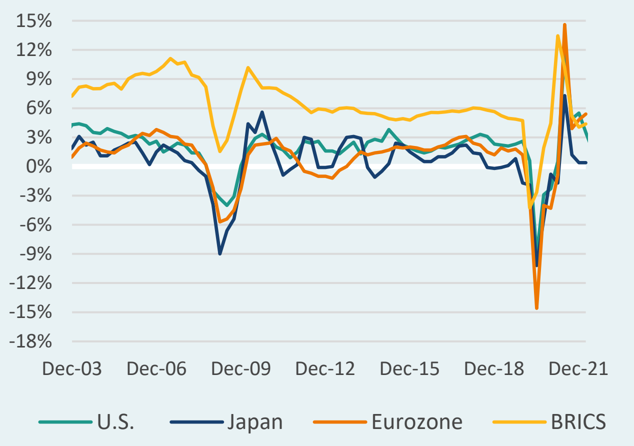
International economics

Economic growth has moderated in most countries, moving toward average levels. Inflation trends remain disparate across geographies. Japan and China are experiencing very low inflation and muted price pressures, while Europe and the United States are coping with multidecade-high inflation. Countries with low inflation and countries with high inflation all appear to have experienced an uptick during Q2.

For some central banks, the issue of fighting inflation has been made more challenging given economic deceleration, as overly aggressive monetary policy might quickly send an economy into recession. Inflation has become a lightning rod for political leaders, as rising prices squeeze household budgets and standards of living.

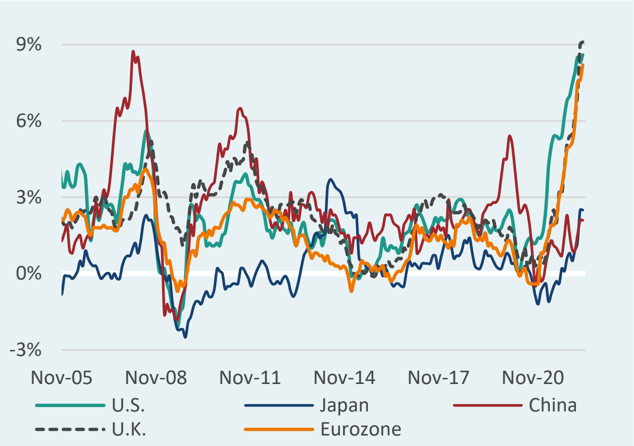
Unemployment rates were relatively stable in developed markets, with conditions in the Eurozone strengthening. Joblessness in emerging markets was mixed—Brazil and Russia experienced improvement, while India and China saw a slight weakening.

REAL GDP GROWTH (YOY)



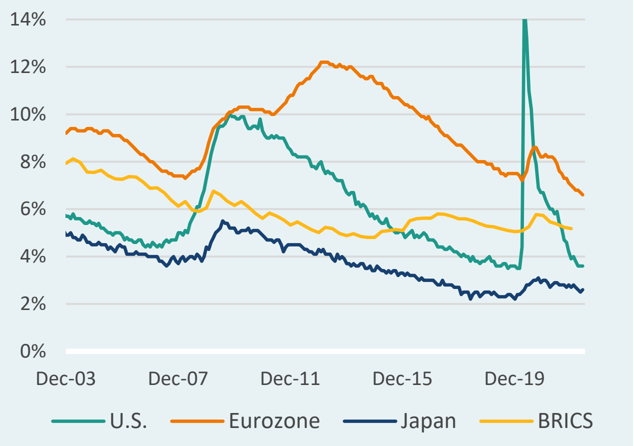
Source: Bloomberg, as of 6/30/22

INFLATION (CPI YOY)



Source: Bloomberg, as of 5/31/22 – or most recent release

UNEMPLOYMENT



Source: Bloomberg, as of 6/30/22 – or most recent release

Fixed income rates & credit

Fixed income environment

— The 10-year U.S. Treasury yield jumped during Q2 from 2.34% to nearly 3.50%, ending the quarter at 2.89%. Yields have fallen from their highs as recession fears mount. The Federal Reserve has a history of cutting interest rates during recession. This implies a higher chance of rate cuts as it appears the U.S. may currently be in recession.

— Credit markets sold off during Q2, impacted by concerns of a slowing economy and recession as the Fed signaled a willingness to raise rates until inflation slows. Bank loans performed the best at -4.4% and outperformed longer duration bonds such as investment grade and high yield (-7.3% and -9.8%, respectively).

— Credit spreads jumped considerably alongside the broader market selloff. U.S. high yield spreads increased from 3.4% to 5.6% and U.S. investment grade spreads headed from 1.2% to 1.6%. In contrast to the recent low yield environment, fixed income now offers investors more robust yields.

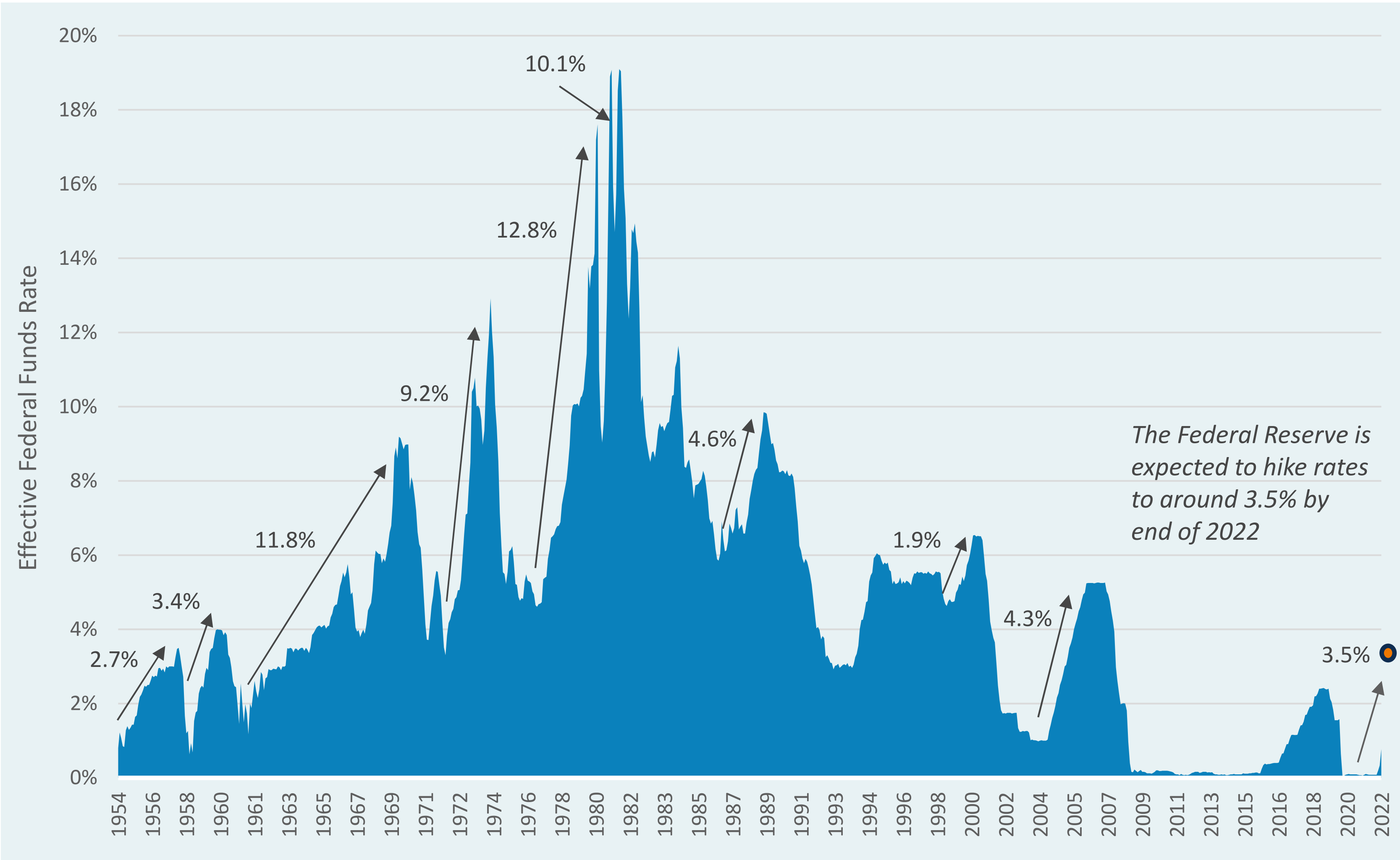
— The U.S. yield curve remained fairly flat during the second quarter. The 10-year minus 2-year yield spread fluctuated between -0.05% and 0.4%. Markets continue to price a flat or inverted yield curve, which is generally recognized as a sign of incoming recession.

— In June, the U.S. Federal Reserve began to unwind its $9 trillion balance sheet. Initially this action involved *not purchasing new bonds* and letting existing bonds mature and roll off. The Fed signaled plans to allow $30 billion of U.S. Treasuries and $17.5 billion of mortgage-backed securities to fall off the balance sheet by end of month. Leadership has admitted that this size of divestment program is essentially the first of its kind and that the committee will be moving with caution.

	QTD Total Return	**1 Year Total Return**
Core Fixed Income (Bloomberg U.S. Aggregate)	(4.7%)	(10.3%)
Core Plus Fixed Income (Bloomberg U.S. Universal)	(5.1%)	(10.9%)
U.S. Treasuries (Bloomberg U.S. Treasury)	(3.8%)	(8.9%)
U.S. High Yield (Bloomberg U.S. Corporate HY)	(9.8%)	(12.8%)
Bank Loans (S&P/LSTA Leveraged Loan)	(4.4%)	(2.7%)
Emerging Market Debt Local (JPM GBI-EM Global Diversified)	(8.6%)	(19.3%)
Emerging Market Debt Hard (JPM EMBI Global Diversified)	(11.4%)	(21.1%)
Mortgage-Backed Securities (Bloomberg MBS)	(4.0%)	(9.0%)

Source: Bloomberg, as of 6/30/22

How does this tightening cycle stack up?



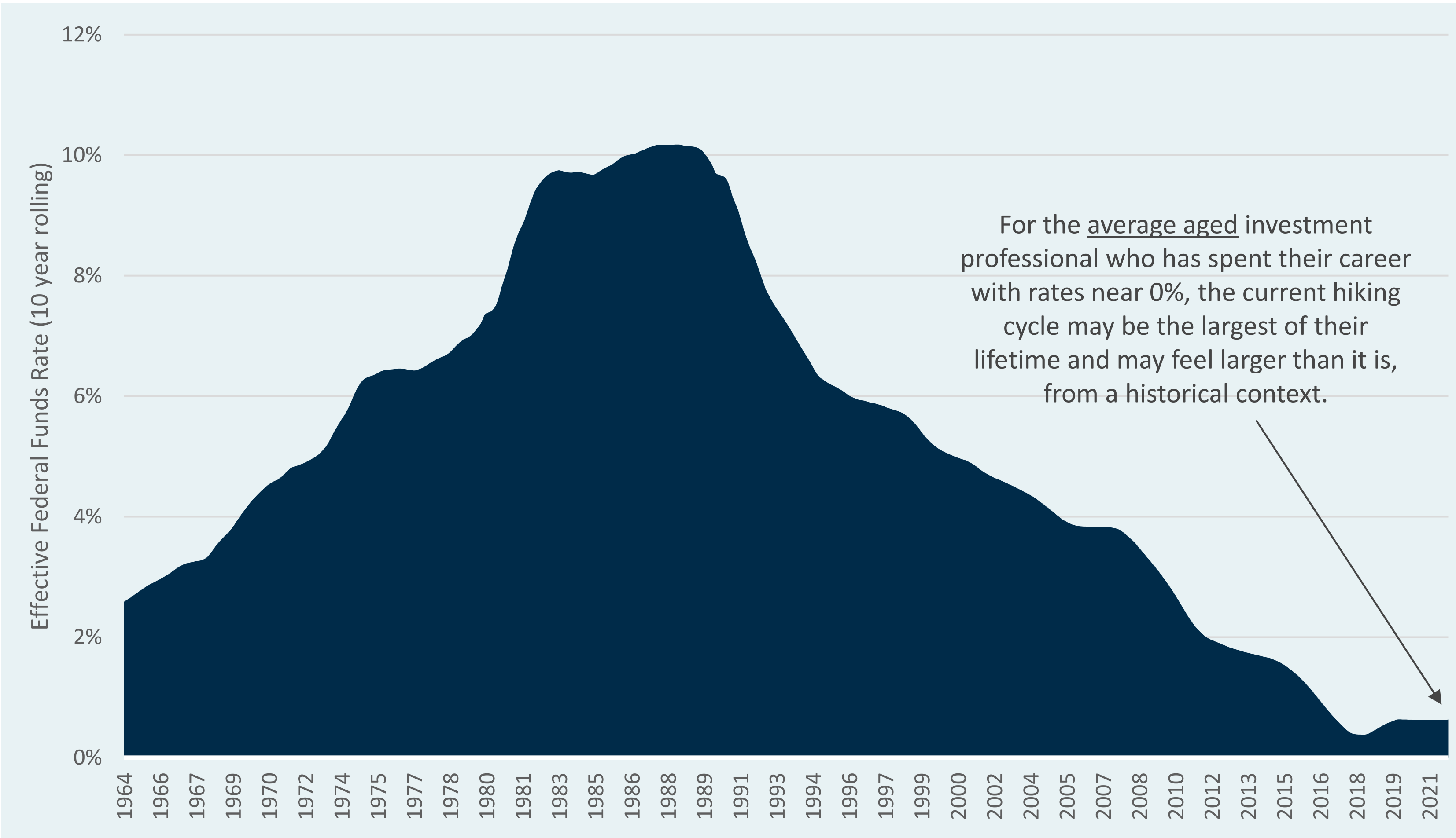
This tightening cycle is milder than most, in terms of total magnitude of hikes

The Fed's plans to reduce their large balance sheet does pose a unique challenge relative to past cycles, however

Source: FRED, as of 6/30/22 - rate hiking cycle of each economic cycle shown

How does this tightening cycle stack up?

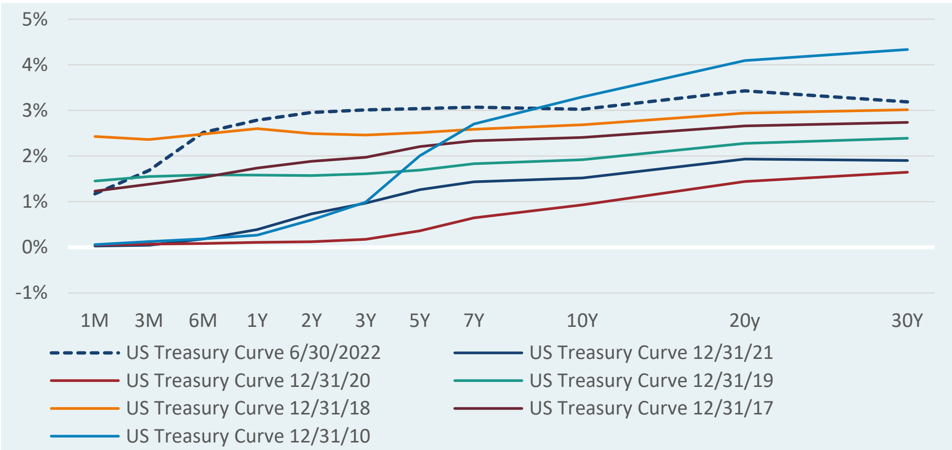
10 YEAR ROLLING AVERAGE FED FUNDS LEVEL



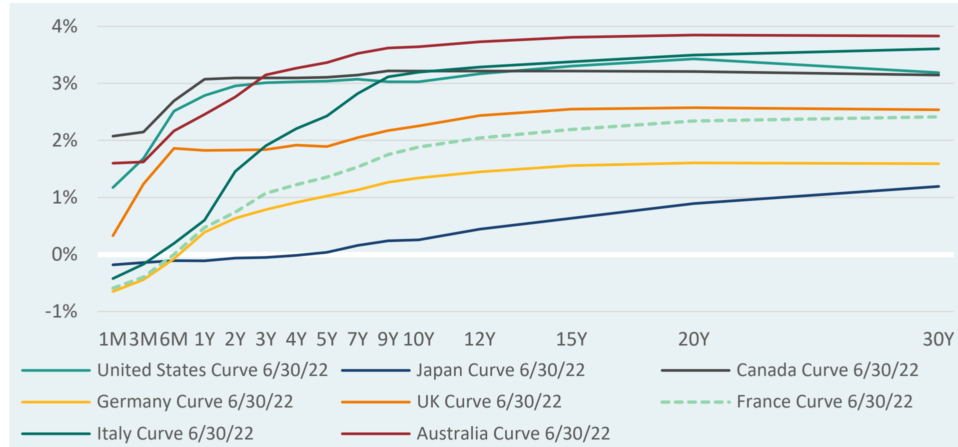
Source: FRED, Verus, as of 6/30/22

Yield environment

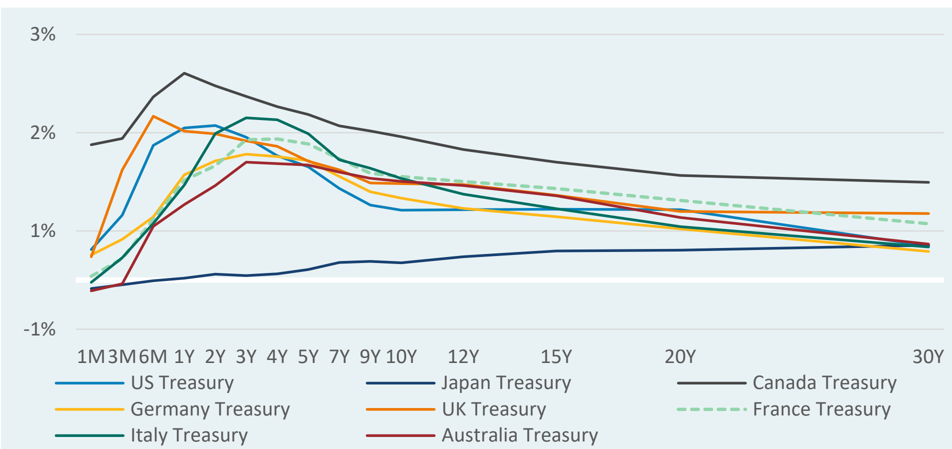
U.S. YIELD CURVE



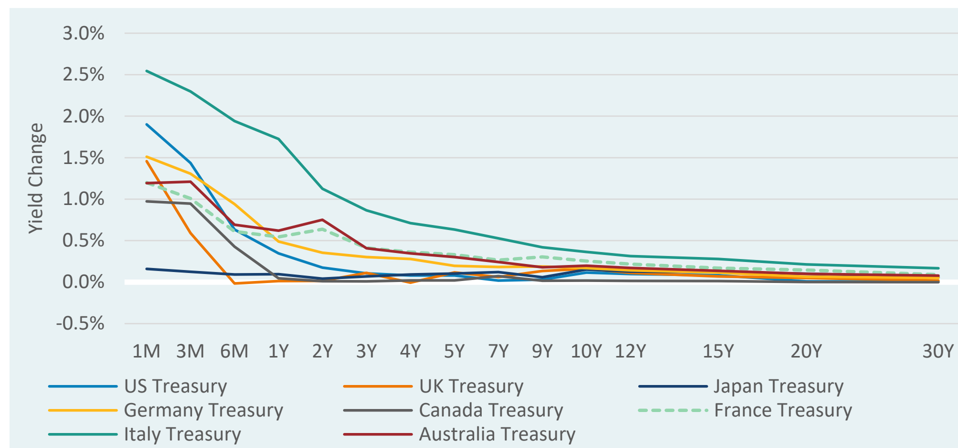
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 6/30/22

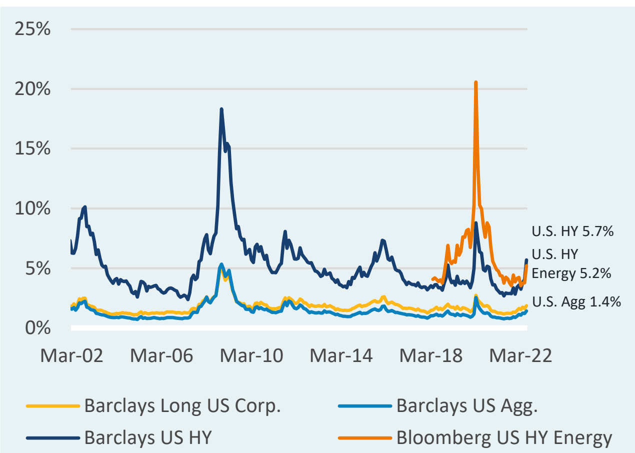
Credit environment

Credit markets experienced a broad selloff over the quarter impacted by concerns of slowing economic growth and recession as the Fed signaled a willingness to raise rates until inflation slows. Bank loans performed the best, returning -4.4% and outperforming higher duration exposures such as investment grade and high yield corporate credit which returned -7.3% and -9.8%, respectively. The decline in high yield was the third worst quarterly decline since 2000, behind the 18% decline experienced during Q4 of 2008 and the 13% decline experienced during Q1 of 2020.

Risk-off sentiment and elevated concerns over economic growth prospects contributed to spread widening during the quarter. Investment grade credit spreads increased 39 basis points to end the quarter at 155 bps. High yield spreads increased 163 basis points to end the quarter and 569 bps which was above the long term non-recessionary average of 454 bps.

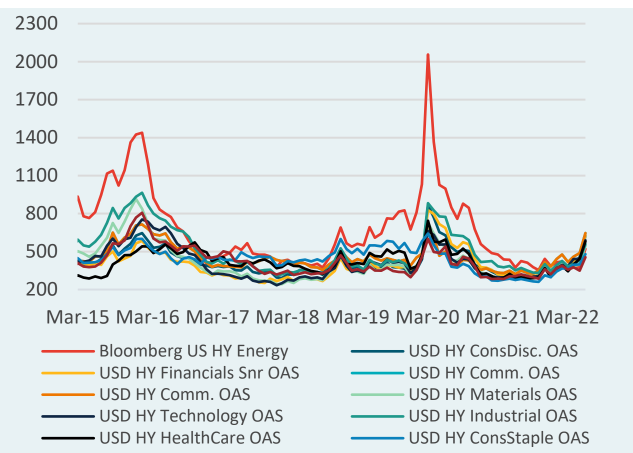
At the end of June, the Bloomberg US High Yield Index offered a yield just shy of 9%, up more than 4% from the beginning of the year. While these levels appear attractive in the context of the recent low yield environment, there is still potential for spreads to widen from these levels if recession concerns worsen.

SPREADS



Source: Barclays, Bloomberg, as of 6/30/22

HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 6/30/22

	Credit Spread (OAS)	
Market	**6/30/22**	**6/30/21**
Long U.S. Corp	1.9%	1.2%
U.S. Inv Grade Corp	1.6%	0.8%
U.S. High Yield	5.7%	2.7%
U.S. Bank Loans*	5.9%	4.3%

Source: Barclays, Credit Suisse, Bloomberg, as of 6/30/22
**Discount margin (4-year life)*

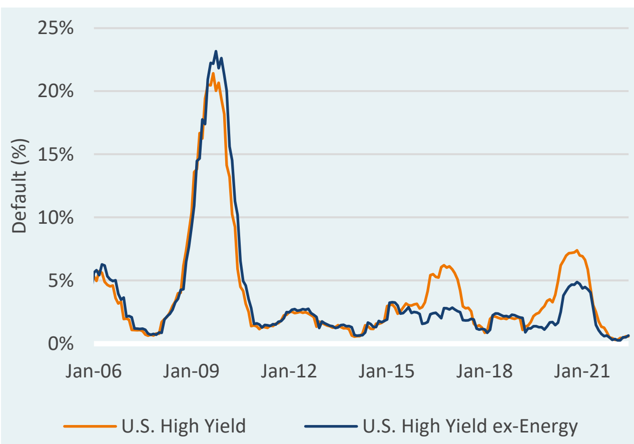
Default & issuance

Default activity picked up in the second quarter with seven companies defaulting on loans and bonds, totaling $15.6 billion. While default volumes have increased from the $1.2 billion experienced last quarter and $9.8 billion experienced throughout 2021, the volumes are in line with the 5-year quarterly average of $16 billion.

Default rates for par-weighted US high yield and bank loans ended the quarter at 0.76% and 0.74%, respectively—well below the longer-term historical averages of 3.2% and 3.1%. The default rate is expected to rise modestly over the remainder of 2022 and throughout 2023, given the prospects for lower growth, more restrictive financing rates, and an expected surge in rising stars exiting the high yield index. While modest increases in default rates are expected, record bond and loan refinancing activity totaling over $1 trillion in 2020 and 2021 has led to relatively healthy issuer fundamentals and very limited near-term financing needs.

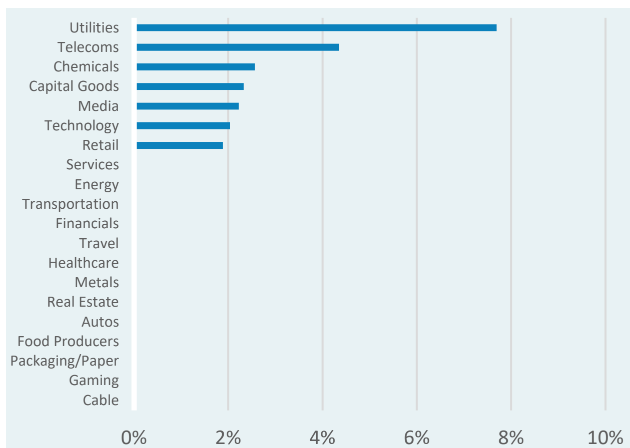
Leveraged credit issuance continued to be light amid high market volatility. The $24.6 billion of high yield bonds issued over the quarter was the lowest issuance since the fourth quarter of 2018 and second lowest total since 2009. Similarly, bank loan issuance totaled $60.6 billion, which was down from $120.5 billion issued in the first quarter. Notably, nearly all of the loans issued over the quarter were SOFR-linked deals as the discontinuation of LIBOR is expected to occur at the end of June 2023.

HY DEFAULT RATE (ROLLING 1-YEAR)



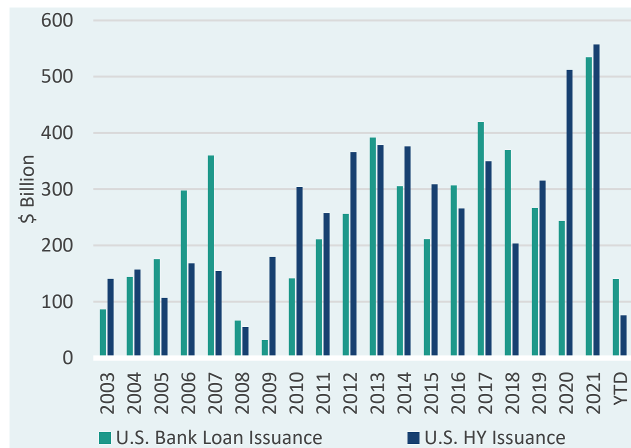
Source: BofA Merrill Lynch, as of 6/30/22

U.S. HY SECTOR DEFAULTS (LAST 12 MONTHS)



Source: BofA Merrill Lynch, as of 6/30/22 – par weighted

U.S. ISSUANCE ($ BILLIONS)



Source: BofA Merrill Lynch, as of 6/30/22

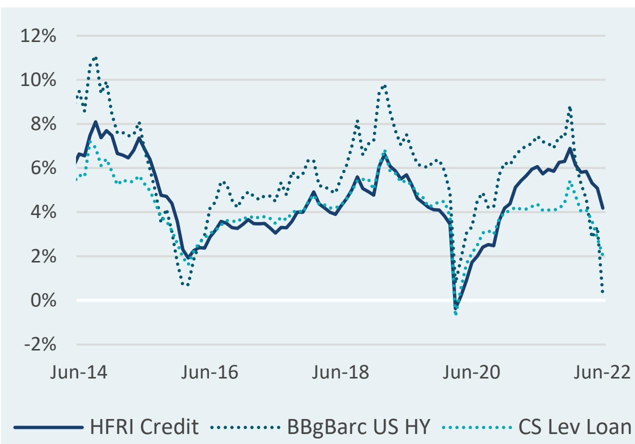
Alternative credit

Credit hedge fund strategies succumbed to overwhelming risk-off moves in fixed income markets during the quarter. The HFRI Credit Index lost 3.2% for Q2, slightly outperforming loan markets as hedges helped offset spread widening. On a three-year rolling basis, alternative credit strategies outperformed high yield bonds by nearly 4% annualized. The only other time since 2008 (the inception of the index) that HFRI Credit outperformed high yield on a three-year basis was a brief period after the 2015 energy sector sell-off.

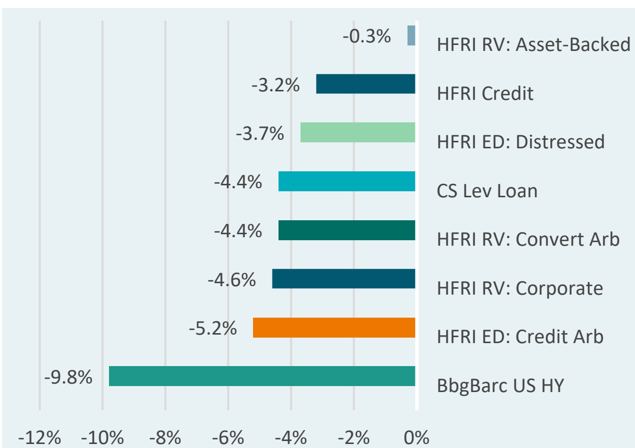
Looking closer within hedge fund credit, managers focused on structured credit remained the bright spot with only slightly negative returns for the quarter and continued outperformance relative to other credit strategies and fixed income markets.

The magnitude of losses in traditional credit markets began to impact even those strategies which try to minimize duration and credit spread risk, such as convertible arbitrage and credit arbitrage. These strategies typically involve substantial leverage or basis risk, and are susceptible to large down moves in extreme stress periods.

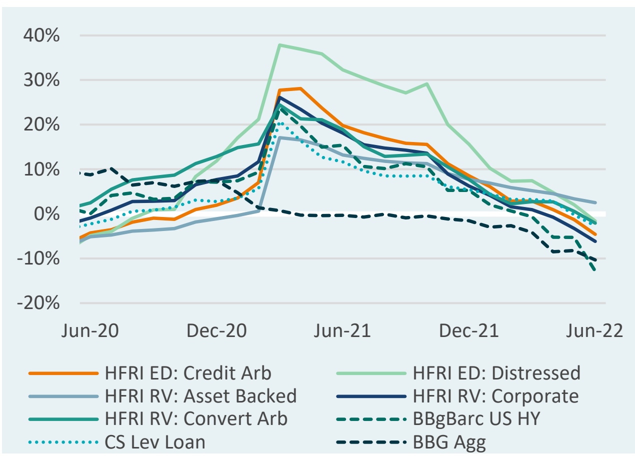
3 YEAR ROLLING ANNUALIZED RETURN



2Q 2022 QUARTERLY RETURN



1 YEAR ROLLING RETURN



Source: HFR, MPI, Morningstar, as of 6/30/22

Equity

Equity environment

— U.S. equities suffered large losses during the second quarter (S&P 500 -16.1%), as many highly priced growth stocks took an exceptionally large hit due to interest rate rises and risk-off sentiment. International developed equities (MSCI EAFE -14.5%) experienced similar losses, while emerging market equities (MSCI Emerging Markets -11.4%) outperformed materially, on an unhedged currency basis.

— As mentioned during Q2 earnings calls, a rising number of S&P 500 companies were concerned about material & commodity costs, COVID costs, and oil & gas prices. A decreasing number of companies were concerned about labor costs & shortages, supply chain disruptions, transport & freight costs, and Russia/Ukraine.

— Currency movement generated large losses for investors who do not hedge their foreign currency exposure. Investors in international developed markets would have seen a loss of approximately -7.3% with a currency hedging program, rather than the -14.5% loss of unhedged investors. Over the past full year, losses from currency movement were -12.4%.

— Value stocks outperformed Growth stocks by a wide margin again in Q2 (Russell 1000 Value -12.2% vs Russell 1000 Growth -20.9%) as many Growth stocks with lofty valuations suffered due to rising interest rates and broader risk-off sentiment. Large capitalization stocks outperformed small cap stocks slightly (Russell 1000 -16.7%, Russell 2000 -17.2%).

— The Cboe VIX Index rose during the quarter from 20.6% to 28.7%, as risk assets sold-off and investors began focusing on potential recession. Investors remain acutely focused on the path of inflation, and market volatility may ease if inflation does in fact begin to moderate in future months.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
U.S. Large Cap (S&P 500)	(16.1%)		(10.6%)	
U.S. Small Cap (Russell 2000)	(17.1%)		(25.2%)	
U.S. Equity (Russell 3000)	(16.7%)		(13.9%)	
U.S. Large Value (Russell 1000 Value)	(12.2%)		(6.8%)	
US Large Growth (Russell 1000 Growth)	(20.9%)		(18.8%)	
Global Equity (MSCI ACWI)	(15.7%)	(13.5%)	(15.8%)	(12.1%)
International Large (MSCI EAFE)	(14.5%)	(7.3%)	(17.8%)	(5.4%)
Eurozone (Euro Stoxx 50)	(15.3%)	(9.2%)	(23.1%)	(11.3%)
U.K. (FTSE 100)	(11.2%)	(3.6%)	(7.1%)	6.2%
Japan (NIKKEI 225)	(14.8%)	(4.2%)	(23.8%)	(6.0%)
Emerging Markets (MSCI Emerging Markets)	(11.4%)	(8.2%)	(25.3%)	(21.5%)

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 6/30/22

Domestic equity

U.S. equities saw sharp losses during the second quarter (S&P 500 -16.1%), underperforming global markets (MSCI ACWI ex-US -13.7%). U.S. sector dispersion was wide, with consumer discretionary stocks suffering the worst pain (-26.2%) and consumer staples faring the best (-4.6%).

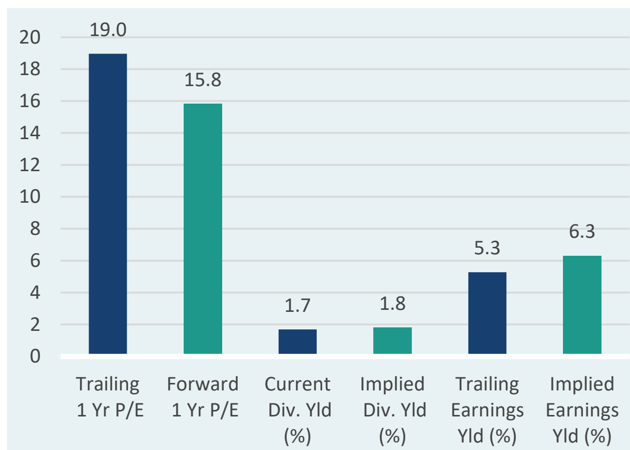
Calendar year 2022 bottom-up earnings estimates for the S&P 500 improved slightly during the quarter, despite the equity bear market. A rosier earnings outlook was fueled mostly by the energy and materials sectors, while consumer discretionary and communication services sectors saw worsening expectations. According to Factset, an increased number of companies issued negative earnings guidance during the quarter, though the balance of companies offering positive and negative guidance remains in a relatively normal range.

According to Q2 earnings calls, a rising number of S&P 500 companies were concerned about material & commodity costs, COVID costs, and oil & gas prices. A decreasing number of S&P 500 companies were concerned about labor costs & shortages, supply chain disruptions, transport & freight costs, and the economic impacts of Russia's invasion of Ukraine.

S&P 500 PRICE INDEX

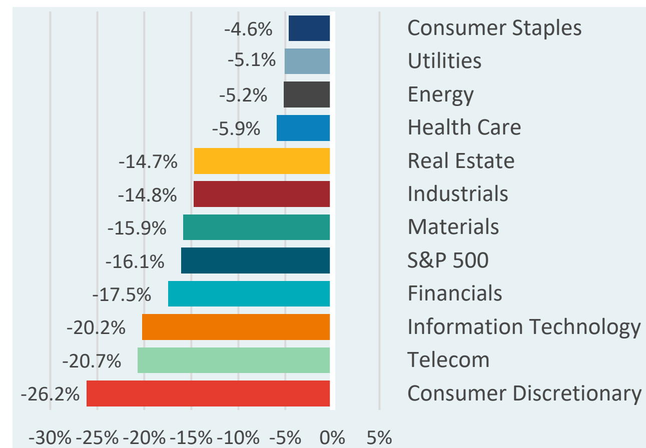
Source: Standard & Poor's, as of 6/30/22

S&P VALUATION SNAPSHOT



Source: Bloomberg, as of 6/30/22

Q2 SECTOR PERFORMANCE



Source: Morningstar, as of 6/30/22

Domestic equity size & style

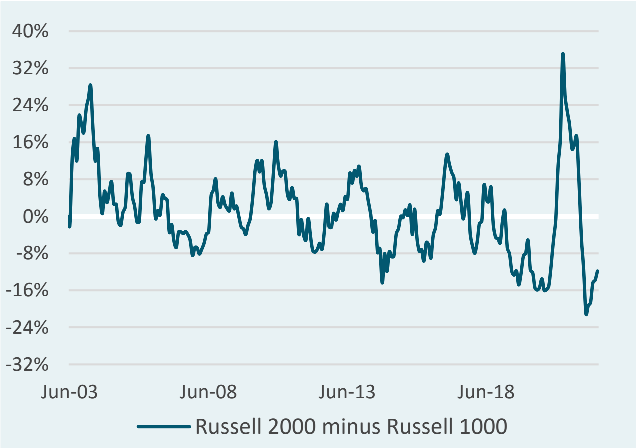
Value stocks outperformed Growth stocks by a wide margin once again in the second quarter (Russell 1000 Value -12.2% vs Russell 1000 Growth -20.9%) as many Growth stocks with lofty valuations suffered due to rising interest rates and broader risk-off sentiment. Large capitalization stocks outperformed small capitalization stocks slightly (Russell 1000 -16.7%, Russell 2000 -17.2%).

The recent drawdown of Growth stocks has helped partially close the historically wide price gap between Value and Growth, as reflected in the bottom right chart. Sector trends contributed to style performance during the quarter. The energy sector outperformed, and information technology was a poor performer. Other Value-concentrated sectors such as financials and materials performed closely in line with the overall index.

In last quarter's research commentary we mentioned that further tightening of Fed policy and interest rate hikes would likely impact Value and Growth stock behavior. This foresight was valid and we believe will remain so. Further Fed hawkishness and market risk-off behavior may lead to additional Growth underperformance, but a reversal by the Federal Reserve and easing of interest rates may bolster the returns of Growth, all else equal.

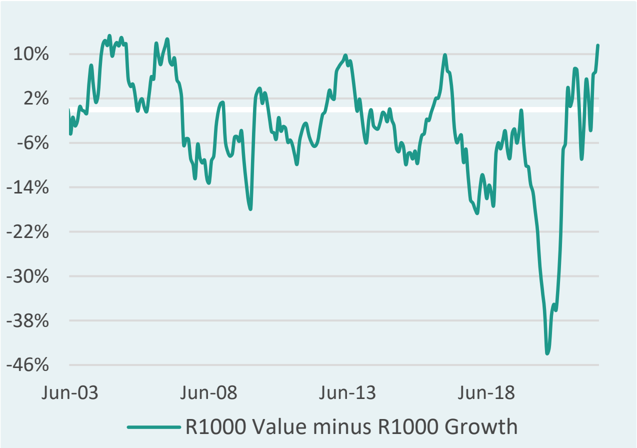
A rebound in Value continued during Q2

SMALL CAP VS LARGE CAP (YOY)



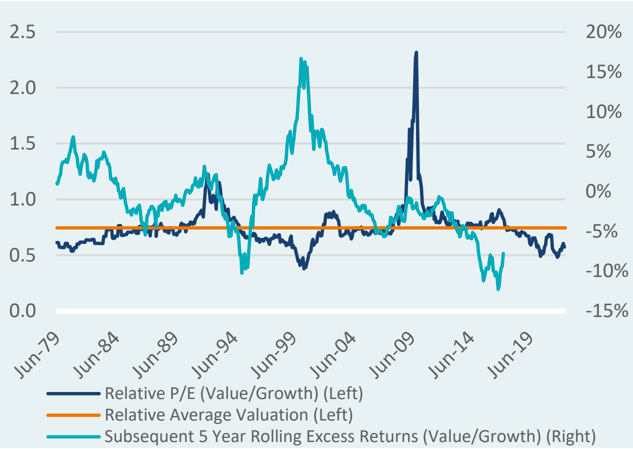
Source: FTSE, as of 6/30/22

VALUE VS GROWTH (YOY)



Source: FTSE, as of 6/30/22

VALUE VS. GROWTH RELATIVE VALUATIONS



Source: Standard & Poor's, as of 6/30/22

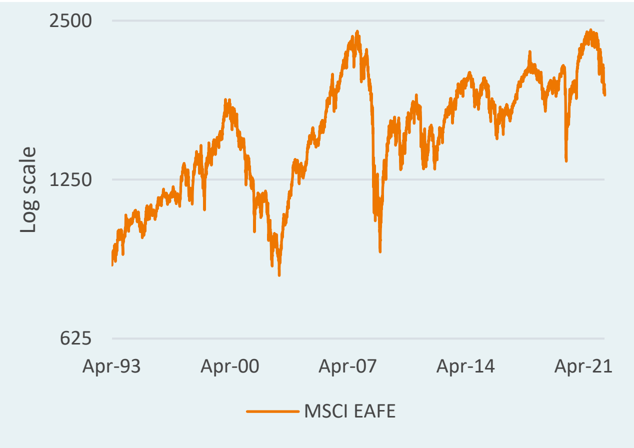
International developed equity

International developed equities fell during the quarter (MSCI EAFE -14.5%), mildly outperforming U.S. equities (S&P 500 -16.1%) and materially underperforming emerging market equities (MSCI Emerging Markets -11.4%), on an unhedged currency basis.

Currency movement during the quarter generated large losses for investors who do not hedge foreign currency exposure. Investors in international developed markets would have seen a loss of approximately -7.3% with a currency hedging program, rather than the -14.5% loss if currency was left unhedged. Over the past year, investors in international equities with a currency hedging program would have experienced roughly a -5.4% return, compared to a return of -17.8% if currency was left unhedged.

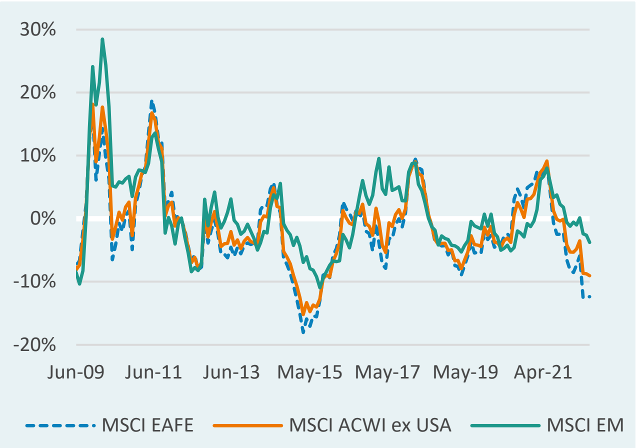
Eurozone equities provided the poorest performers during the quarter (MSCI Euro -11.1%), as EUR/USD reached parity for the first time in nearly 20 years. The United Kingdom market (MSCI UK 1.8%) and Japanese market (MSCI Japan -6.6%) lifted the overall MSCI EAFE Index.

INTERNATIONAL DEVELOPED EQUITY



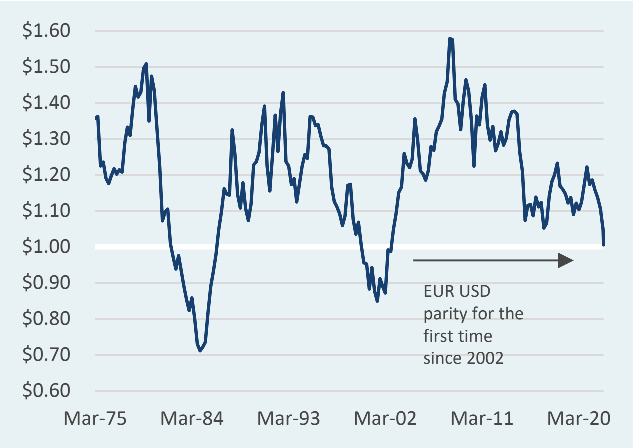
Source: MSCI, as of 6/30/22

EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 6/30/22

PRICE OF 1 EUR IN USD



Source: Bloomberg, as of 7/14/22

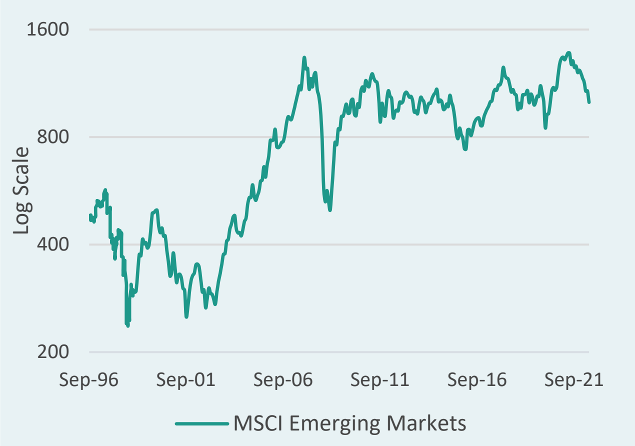
Emerging market equity

Emerging market equities have delivered broad outperformance throughout the global risk asset drawdown (MSCI EM -11.4%, MSCI ACWI -15.7%) on an unhedged currency basis. A bounce-back in Chinese equities over the quarter (MSCI China 3.5%) from their sharp recent losses helped lift overall performance of the asset class. Latin American markets lagged Asian markets (MSCI EM Latin America -21.9%%, MSCI EM Asia -9.3%), reversing last quarter's gains.

Strong returns from the consumer discretionary sector (12.9%)—the largest sector in the MSCI China Index—propelled Chinese equity performance forward. Outside of Chinese equities, emerging markets struggled, as central banks around the world tightened policy to fight inflation. Emerging market countries whose economies are reliant on raw goods exports were particularly impacted by tightening, as global commodity prices have drawn down from peaks seen earlier in the year.

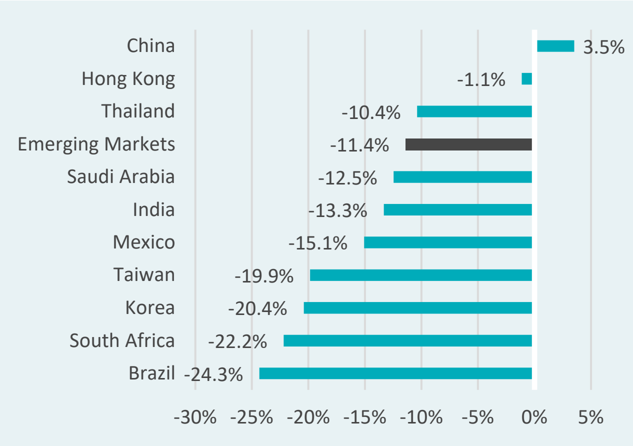
The strong dollar also provided a headwind to emerging market equity returns, as currency movement resulted in a -3.2% loss. Emerging market currencies remain far weaker than the historical average, which may allow performance upside if mean reversion were to occur.

EMERGING MARKET EQUITY



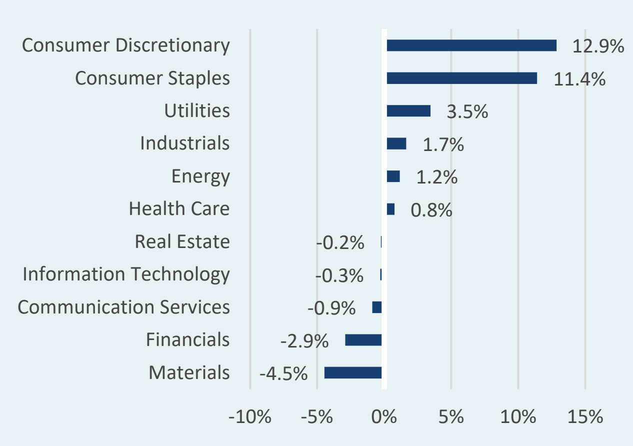
Source: MSCI, as of 6/30/22

Q2 PERFORMANCE – TOP 10 EM CONSTITUENTS



Source: Bloomberg, MSCI as of 6/30/22, performance in USD terms

MSCI CHINA Q2 SECTOR PERFORMANCE



Source: Bloomberg, MSCI as of 6/30/22, performance in USD terms

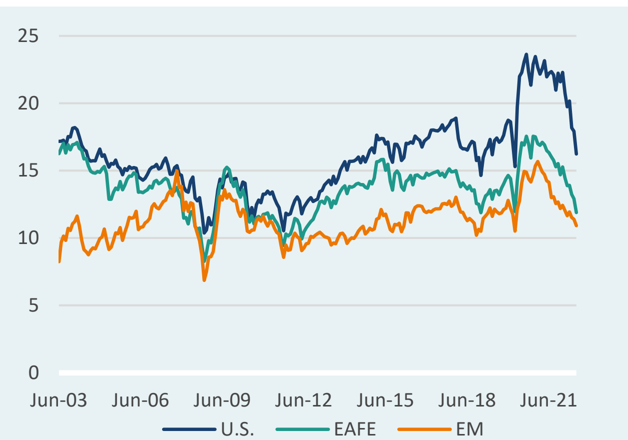
Equity valuations

Valuations fell substantially during the market selloff, bringing multiples closer in line with long-term historical averages. U.S. earnings forecasts have held strong, and analysts expect 2022 calendar year earnings growth of 10.4%. However, these earnings forecasts arguably contain greater uncertainty, given higher interest rates, higher input prices, and weakening consumer demand. The path of corporate earnings in 2022 will be a key variable in determining whether equity markets recover, remain subdued, or fall further. The bottom-up S&P 500 12-month analyst price target was 4,987 as of June 23rd.

Domestic equity valuations remain elevated relative to international developed and emerging markets, which translates to U.S. equities offering a lower yield and likely lower prospective total performance over the longer-term. Domestic equities trade at roughly a 50% valuation premium over international developed equities on a trailing price/earnings basis, and a 75% valuation premium over emerging market equities. While we are more pessimistic around the outlook for international developed equities and believe cheaper prices are justified, we are bullish around emerging markets which appear to offer attractive returns in the current environment.

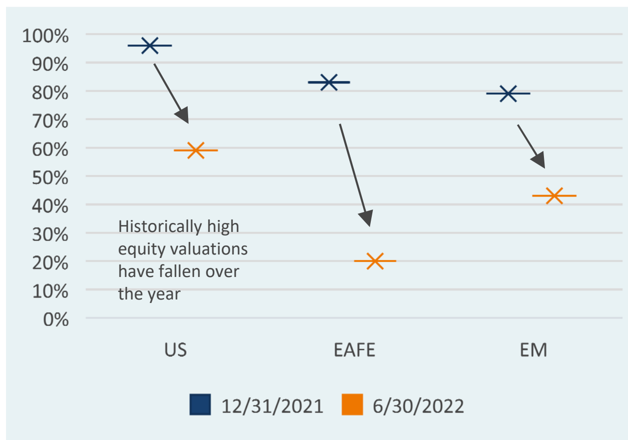
Most equity valuations have moved back towards normal levels, though U.S. prices remain rich

FORWARD P/E RATIOS



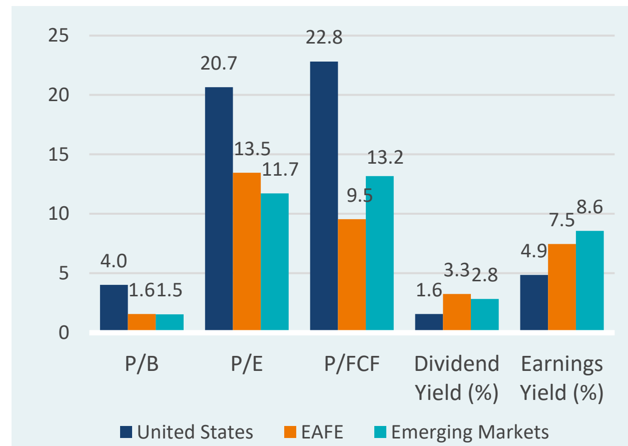
Source: MSCI, 12m forward P/E, as of 6/30/22

FORWARD P/E PERCENTILE RANKINGS



Source: Bloomberg, MSCI, as of 6/30/22

VALUATION METRICS (3-MONTH AVERAGE)



Source: Bloomberg, MSCI as of 6/30/22 - trailing P/E

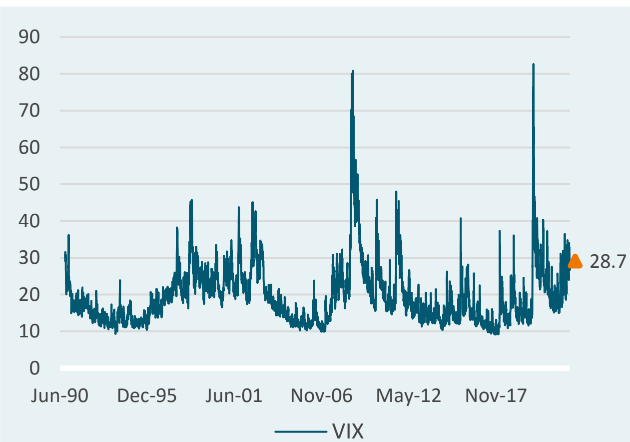
Equity volatility

The Cboe VIX Index rose during the quarter from 20.6% to 28.7%, as risk assets sold-off and investors began focusing on potential recession. Investors have been acutely focused on the path of inflation, and market volatility may ease if inflation does in fact begin to moderate in future months.

Realized volatility of equity markets over the past year has remained within an average range. U.S. markets were the most volatile relative to developed and emerging markets. This dynamic has been rare historically, and is likely driven in part by inflation and recession risks that are especially high in the United States.

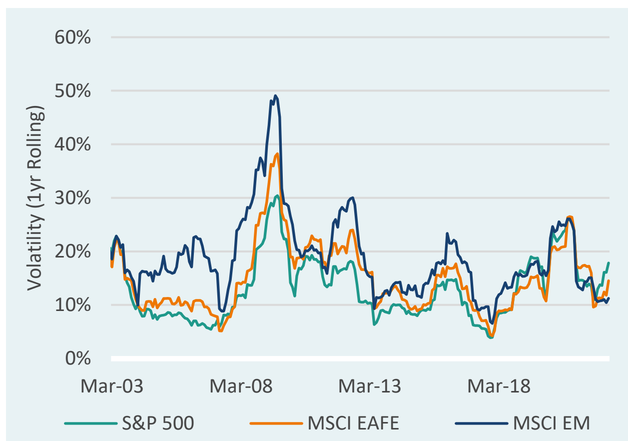
The 2022 equity bear market, while fairly moderate in speed and magnitude by historical standards, may justifiably feel severe for investors due to the broad-based nature of the selloff. Fixed income has delivered notable losses, failing to provide the diversification which investors expect. Commodities were a bright spot in Q1, but a sharp reversal in June led to quarterly Q2 loss of -5.7%. Currency markets also moved against investors, as U.S. dollar appreciation further compounded losses for unhedged international asset exposure. It seems there was nowhere to hide except for cash during the second quarter.

U.S. IMPLIED VOLATILITY (VIX)



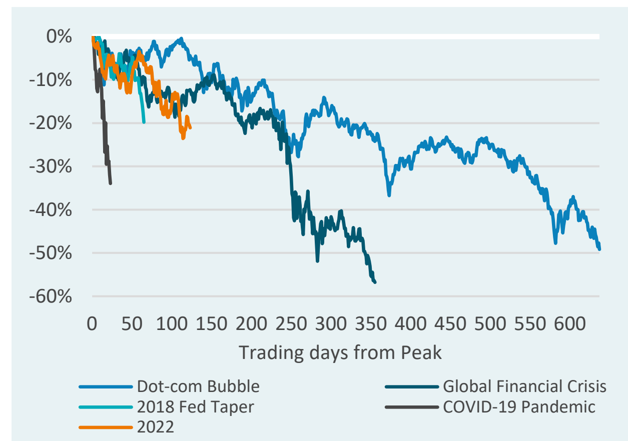
Source: Cboe, as of 6/30/22

REALIZED VOLATILITY



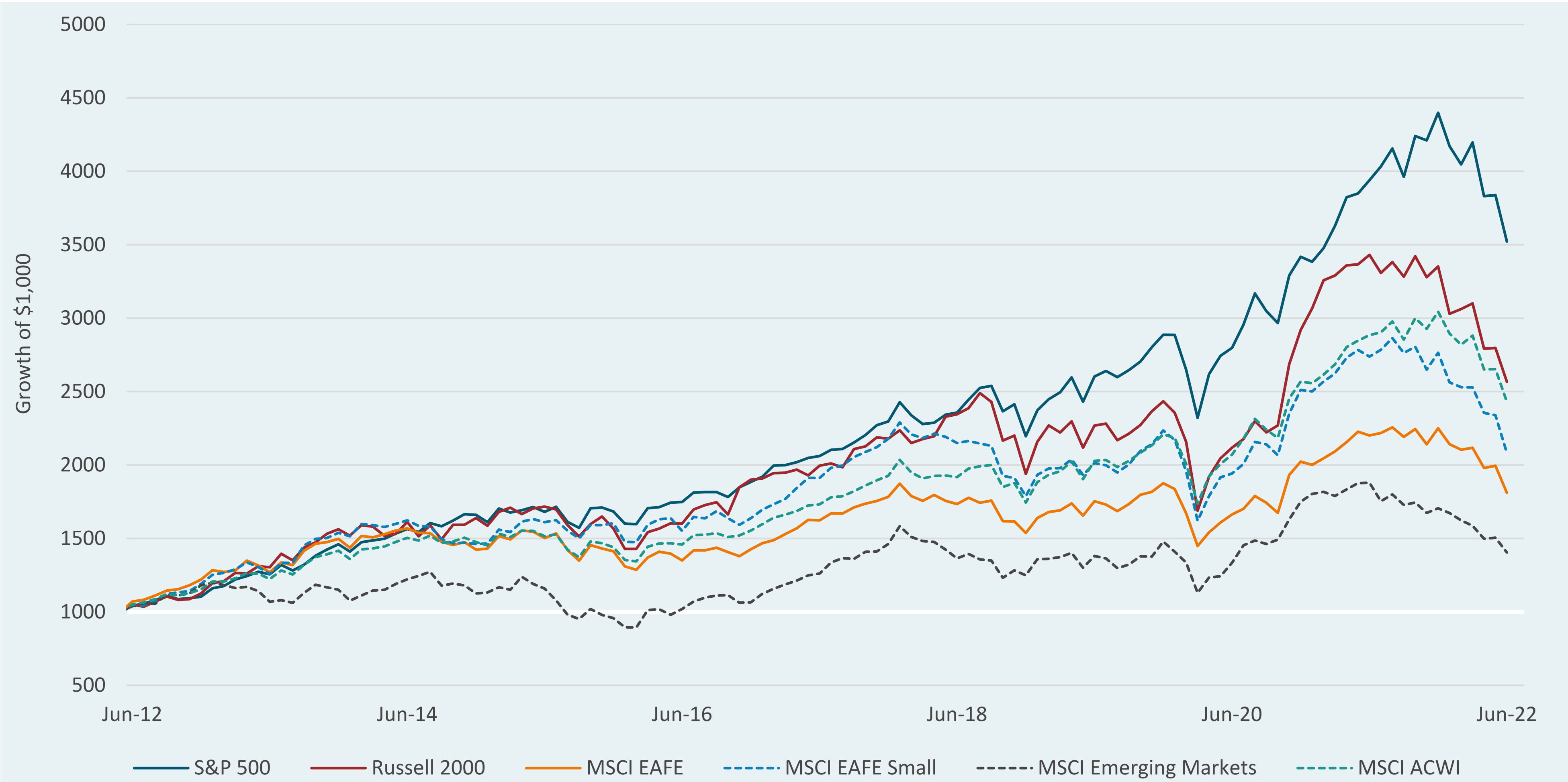
Source: Standard & Poor's, MSCI, as of 6/30/22

S&P 500 PEAK DRAWDOWNS



Source: Bloomberg, as of 6/30/22

Long-term equity performance



Source: Morningstar, as of 6/30/22

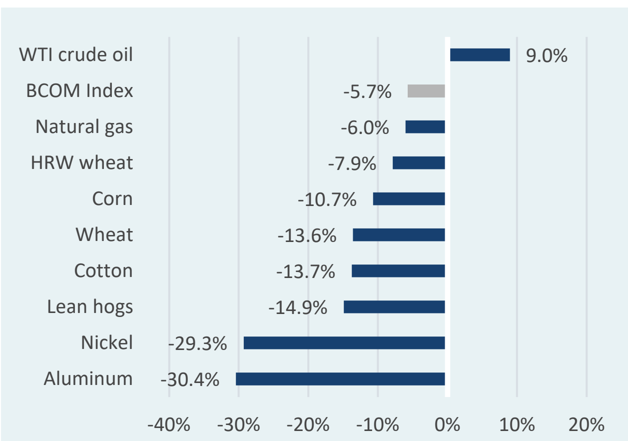
Other assets

Commodities

The Bloomberg Commodity Index fell -10.8% during June, bringing the second quarter return to -5.7%. Industrial metals (-26.4%) and precious metals (-10.5%) experienced the largest losses, while energy (7.0%) and petroleum (13.7%) marched higher around fears of a potential global energy shortage, though many prices reversed their gains in June.

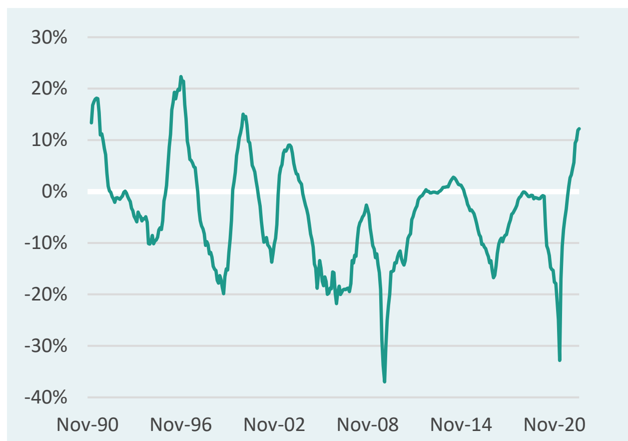
Early in 2022 many investors expressed fears about a potential global commodity supply shortage, perhaps fueled by underinvestment in production capacity preceding and throughout the COVID-19 recession. Russia's invasion of Ukraine further amplified these fears and commodity price growth accelerated further. Later in the second quarter this trend appears to have reversed. Fears of a recession which would hinder the demand for commodities, and likely some easing of uncertainty around Ukraine, have contributed to a sharp drop in commodity prices. If weaker prices persist, the reversal in commodity markets should have a deflationary impact on broader consumer prices, though this effect may take time to flow through to broader prices. For example, lower oil prices have far-reaching impacts on the U.S. economy, such as on the transportation of goods, ground transportation and taxis, air travel, and the production of plastics.

BLOOMBERG COMMODITY INDEX – Q2 2022



Source: Bloomberg, as of 6/30/22

S&P GSCI INDEX ROLL YIELD (LAST 12 MONTHS)



Source: Standard & Poor's, Bloomberg, as of 6/30/22

INDEX AND SECTOR PERFORMANCE

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg Commodity	(10.8)	(5.7)	18.4	24.3	14.3	8.4	(0.8)
Bloomberg Agriculture	(9.1)	(5.7)	13.0	18.9	18.8	6.9	(1.2)
Bloomberg Energy	(14.6)	7.0	58.3	66.6	11.7	10.0	(4.7)
Bloomberg Grains	(11.7)	(7.1)	16.1	16.6	17.5	6.2	(2.1)
Bloomberg Industrial Metals	(16.0)	(26.4)	(9.6)	0.2	11.9	7.5	1.2
Bloomberg Livestock	(0.3)	(8.7)	(3.4)	(3.6)	(6.8)	(6.6)	(4.3)
Bloomberg Petroleum	(4.0)	13.7	63.5	79.4	19.5	18.1	(1.2)
Bloomberg Precious Metals	(3.1)	(10.5)	(4.4)	(4.8)	7.2	5.6	(0.8)
Bloomberg Softs	(5.9)	(4.3)	3.3	27.2	16.8	5.3	(3.2)

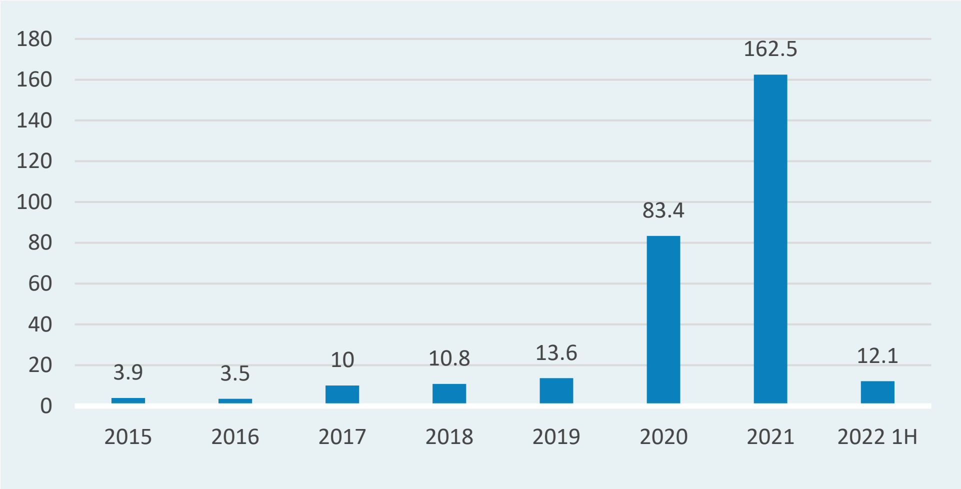
Source: Morningstar, as of 6/30/22

SPACs development

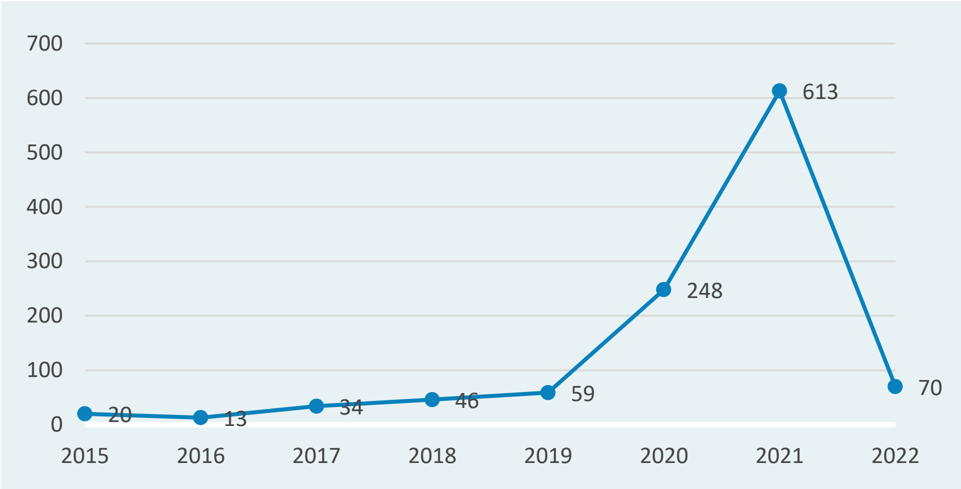
While SPACs proliferated between 2020 through 2021, coinciding with record retail investor trading volume, this activity has subsided notably in 2022.

Market volatility year-to-date and reduced market liquidity have rendered speculative areas of the markets, including SPACs, less attractive. Existing SPAC sponsors from 2020-2021 are struggling to source target deals for their mergers, rendering a large volume of SPAC sponsors at risk of returning their capital to investors without a successful deal executed. The required holding lock-up period after SPACs go public, as well as the impact of market volatility, have led many venture capital and private equity funds to reevaluate the viability of SPAC as an exit channel.

U.S. SPAC AMOUNT RAISED ($BILLIONS)



NUMBER OF SPAC IPOS



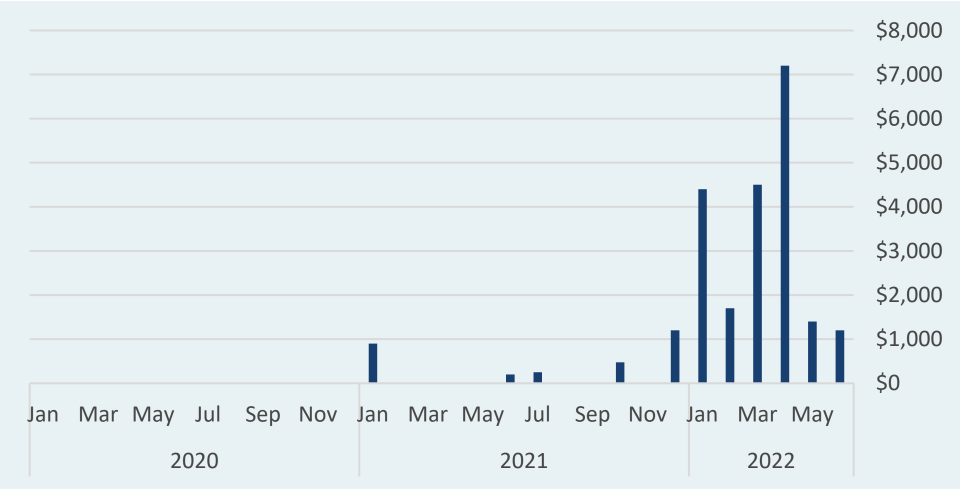
Source: SPAC Research, as of 6/30/22

SPACs return analysis

- For **institutional investors**: A number of companies that initially went public via a merger with a SPAC have seen very large share price declines and have since been acquired by a competitor at a far lower price.
- For **retail investors**: Declining share prices of SPACs have eroded billions of dollars of value for shareholders who held SPACs after their acquisition deals.
- Blank check companies have a history of surging and subsiding. During the 1980s, SPACs had boomed, and many were eventually wiped out when Congress passed more stringent regulations. The Securities Exchange Commission is currently tightening regulations around SPACs amid the resurgence.

DE-SPAC INDEX - CHANGE SINCE JUNE 17, 2021

WITHDRAWN SPACS - VALUE OF FILINGS PULLED BY SPONSORS ($M)



Source: Bloomberg, as of 6/30/22

Appendix

Periodic table of returns

BEST

WORST

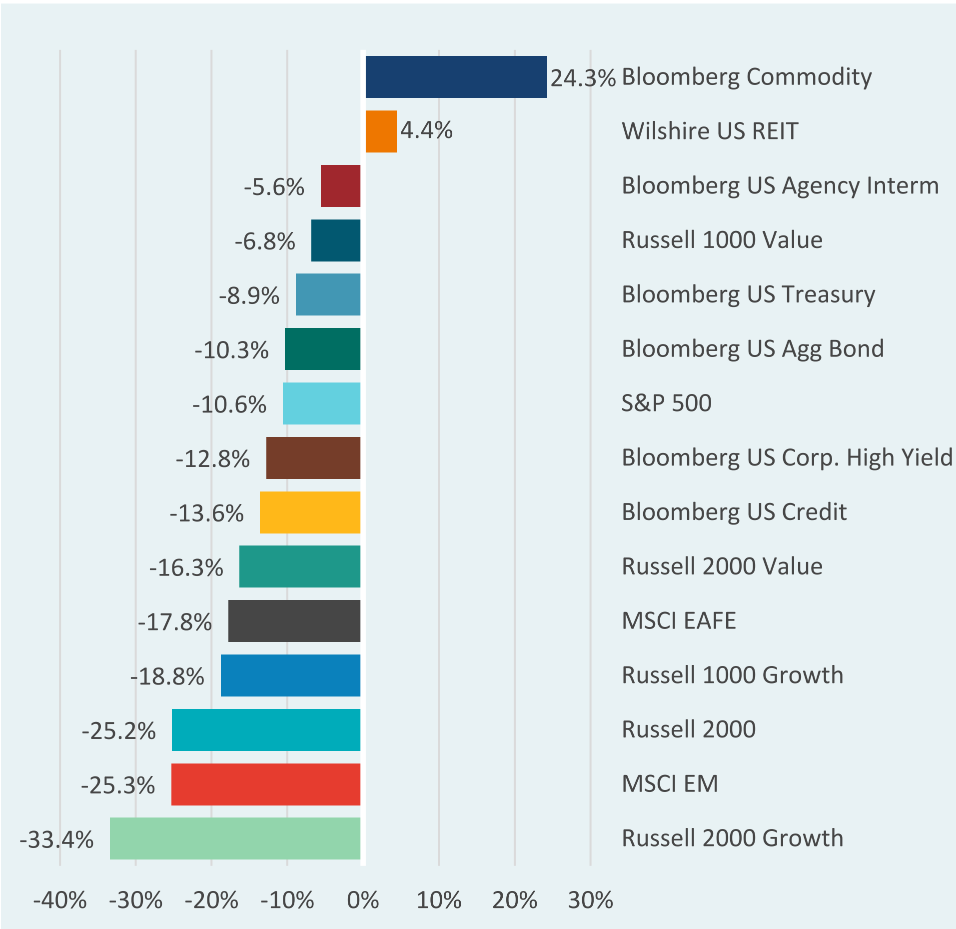
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	YTD	5-Year	10-Year
Commodities	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.7	36.4	38.5	28.3	18.4	14.3	14.8
Real Estate	22.8	8.4	10.3	48.5	22.2	21.4	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	5.3	11.0	12.8
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	0.1	8.5	10.5
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	-6.3	8.4	9.6
US Bonds	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	-10.3	7.2	9.4
Large Cap Value	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	-12.9	5.2	9.3
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	-17.3	4.9	9.1
Emerging Markets Equity	-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	-17.6	4.8	5.4
60/40 Global Portfolio	-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	-17.7	4.2	5.4
International 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	-19.6	3.7	3.8
Large Cap 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	-20.9	2.2	3.1
Small Cap 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	-23.4	2.2	1.5
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	-28.1	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	-29.5	0.9	-0.8

- Large Cap Equity
- Large Cap Value
- Large Cap Growth
- Small Cap Equity
- Small Cap Value
- Small Cap Growth
- International Equity
- Emerging Markets Equity
- US Bonds
- Cash
- Commodities
- Real Estate
- Hedge Funds of Funds
- 60% MSCI ACWI/40% Bloomberg Global Bond

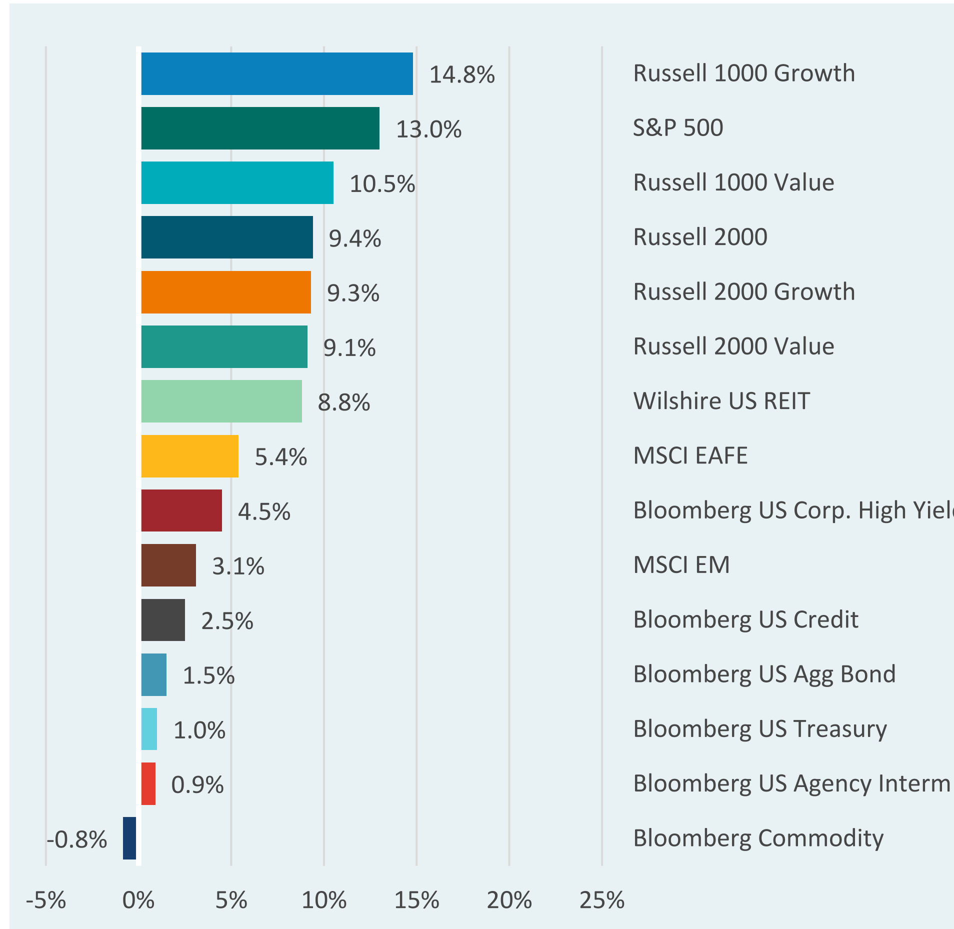
Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, Bloomberg US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, Bloomberg Global Bond. NCREIF Property Index performance data as of 3/31/22.

Major asset class returns

ONE YEAR ENDING JUNE



TEN YEARS ENDING JUNE



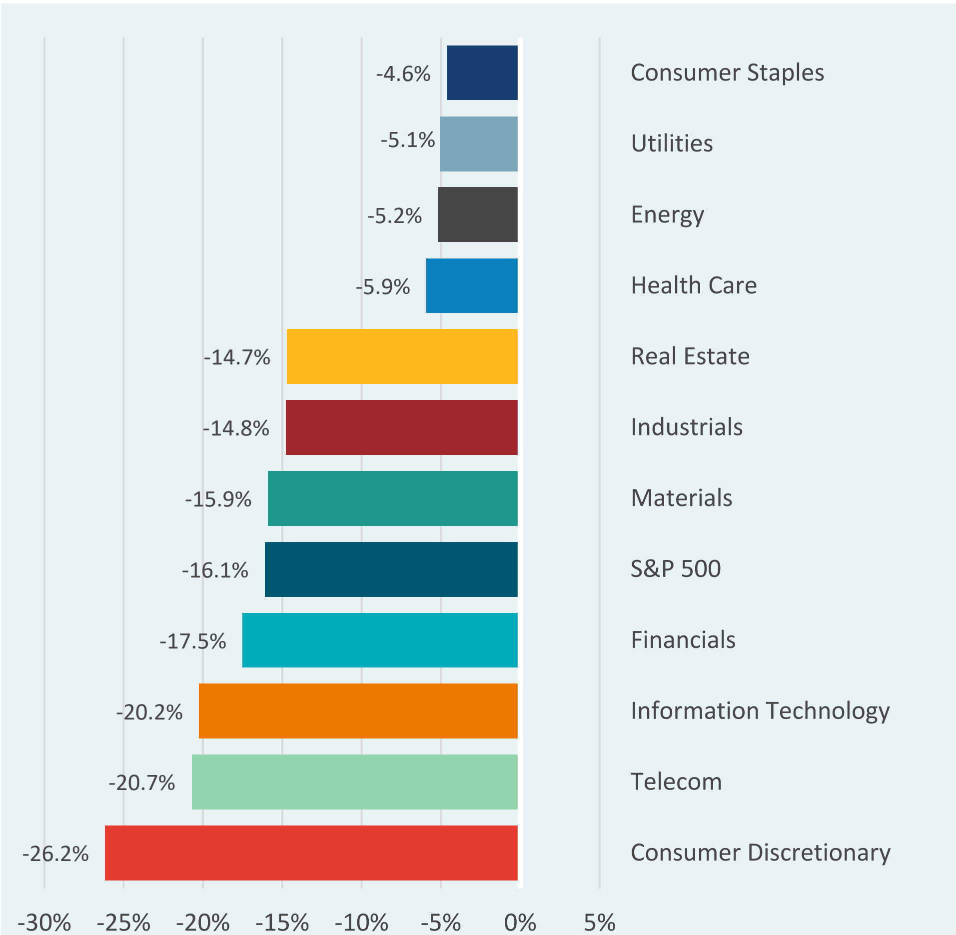
Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.

Source: Morningstar, as of 6/30/22

Source: Morningstar, as of 6/30/22

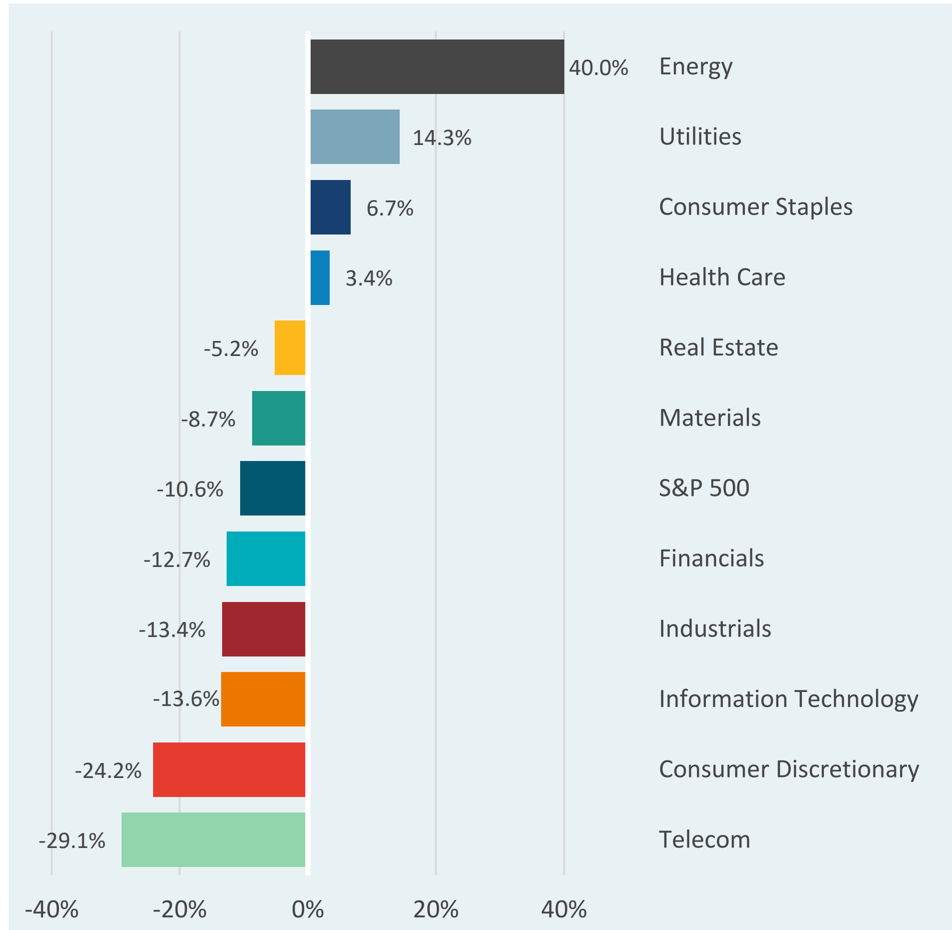
S&P 500 sector returns

QTD



Source: Morningstar, as of 6/30/22

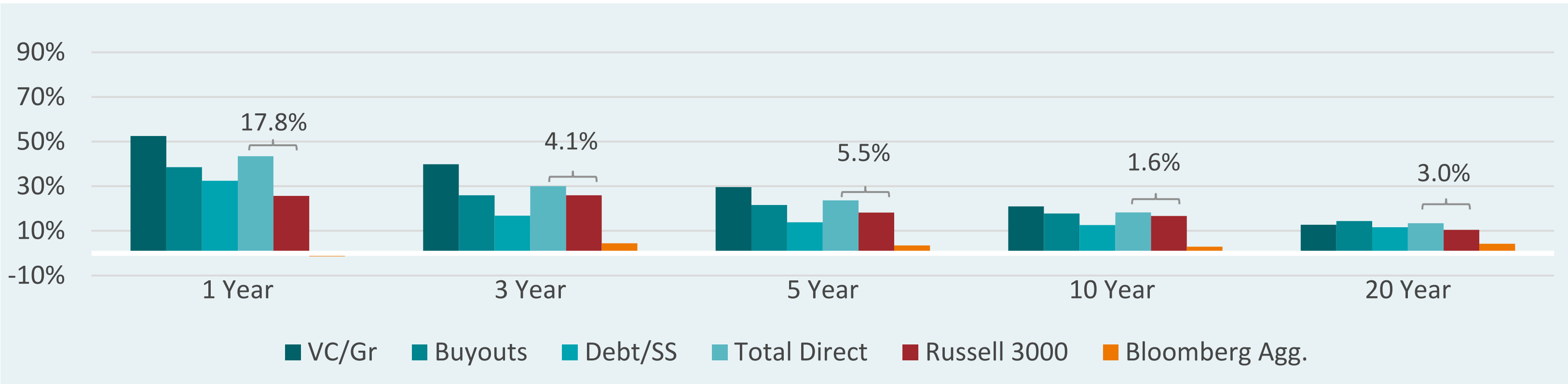
ONE YEAR ENDING JUNE



Source: Morningstar, as of 6/30/22

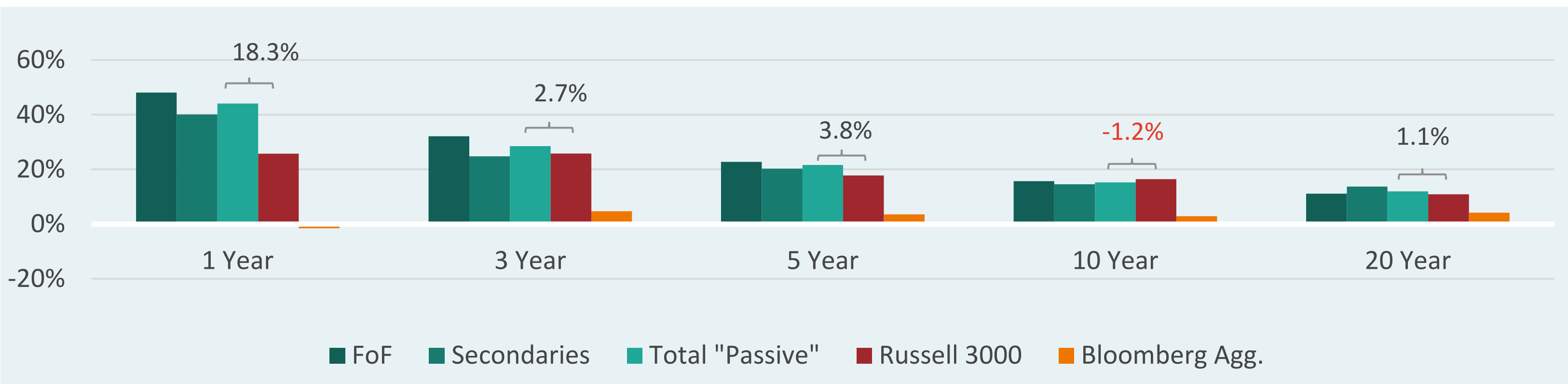
Private equity vs. traditional assets performance

DIRECT PRIVATE EQUITY FUND INVESTMENTS



Direct P.E Fund Investments outperformed comparable public equites across all time periods.

"PASSIVE" STRATEGIES

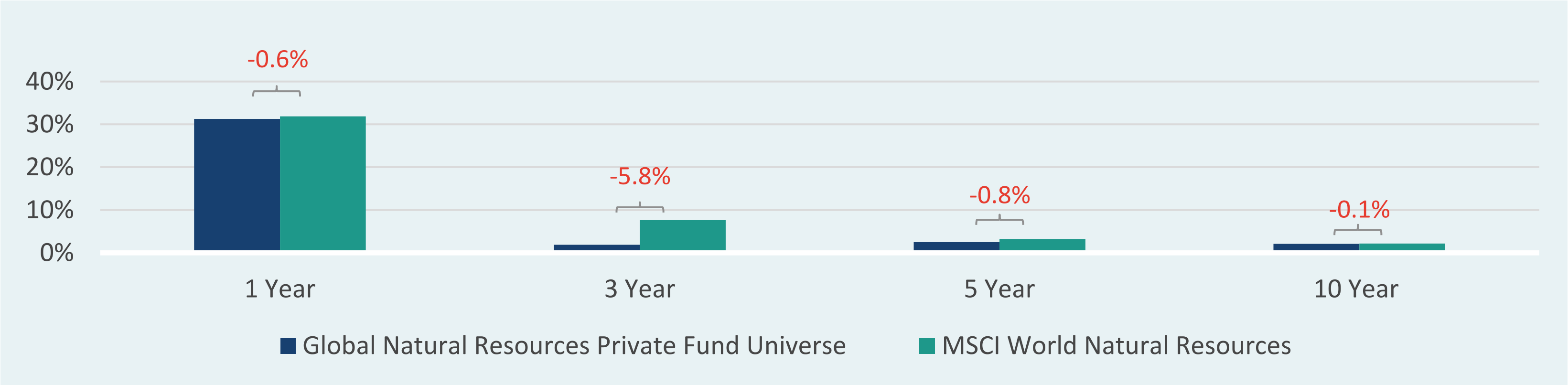


"Passive" strategies outperformed comparable public equities across all time periods, aside from the 10-year basis.

Sources: Refinitiv PME: U.S. Private Equity Funds sub asset classes as of December 31 2021. Public Market Equivalent returns resulted from "Total Passive" and Total Direct's identical cash flows invested into and distributed from respective traditional asset comparable.

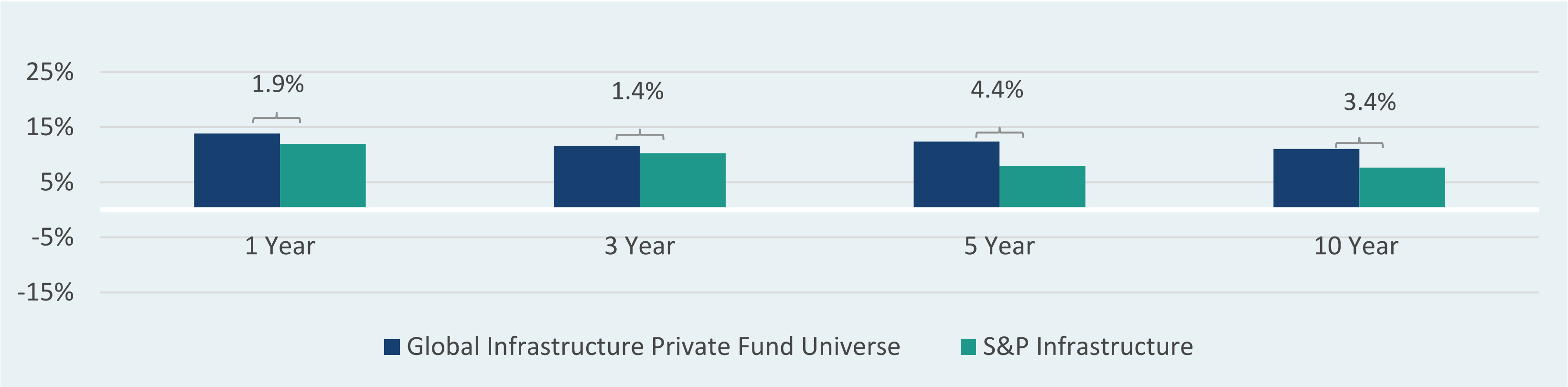
Private vs. liquid real assets performance

GLOBAL NATURAL RESOURCES FUNDS



N.R. funds underperformed the MSCI World Natural Resources benchmark across all time periods.

GLOBAL INFRASTRUCTURE FUNDS

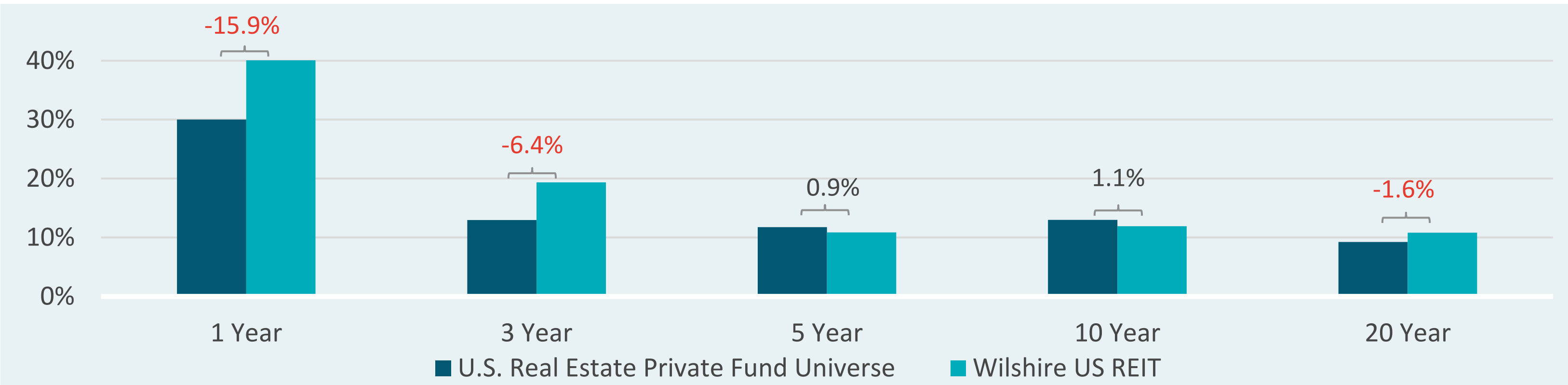


Infra. funds outperformed the S&P Infra. across all periods.

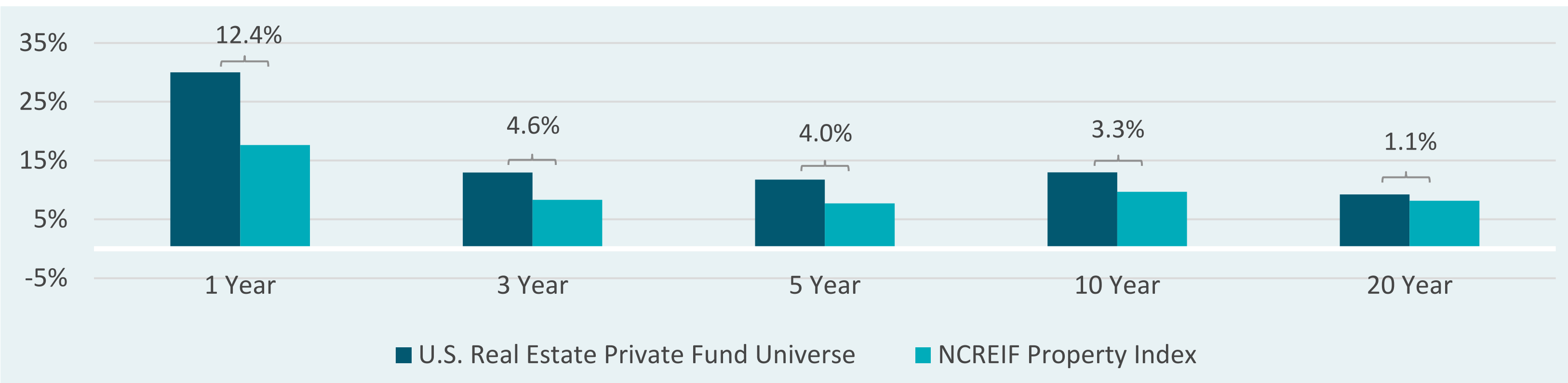
Sources: Refinitiv PME: Global Natural Resources (vintage 1999 and later, inception of MSCI World Natural Resources benchmark) and Global Infrastructure (vintage 2002 and later, inception of S&P Infrastructure benchmark) universes as of December 31, 2021. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real assets universes.

Private vs. liquid and core real estate performance

U.S. PRIVATE REAL ESTATE FUNDS VS. LIQUID UNIVERSE



U.S. PRIVATE REAL ESTATE FUNDS VS. CORE FUNDS



U.S. Private R.E. funds underperformed the Wilshire U.S. REIT Index across all time periods, aside on a 5 and 10 -year basis.

U.S. Private R.E. Funds outperformed the NCREIF Property Index across all time periods.

Sources: Refinitiv PME: U.S. Real Estate universes as of December 31, 2021. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real estate universes.

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	(8.3)	(16.1)	(20.0)	(10.6)	10.6	11.3	13.0
S&P 500 Equal Weighted	(9.4)	(14.4)	(16.7)	(9.4)	9.7	9.9	12.7
DJ Industrial Average	(6.6)	(10.8)	(14.4)	(9.1)	7.2	10.0	11.7
Russell Top 200	(7.8)	(16.6)	(20.7)	(11.5)	11.5	12.2	13.4
Russell 1000	(8.4)	(16.7)	(20.9)	(13.0)	10.2	11.0	12.8
Russell 2000	(8.2)	(17.2)	(23.4)	(25.2)	4.2	5.2	9.4
Russell 3000	(8.4)	(16.7)	(21.1)	(13.9)	9.8	10.6	12.6
Russell Mid Cap	(10.0)	(16.8)	(21.6)	(17.3)	6.6	8.0	11.3
Style Index							
Russell 1000 Growth	(7.9)	(20.9)	(28.1)	(18.8)	12.6	14.3	14.8
Russell 1000 Value	(8.7)	(12.2)	(12.9)	(6.8)	6.9	7.2	10.5
Russell 2000 Growth	(6.2)	(19.3)	(29.5)	(33.4)	1.4	4.8	9.3
Russell 2000 Value	(9.9)	(15.3)	(17.3)	(16.3)	6.2	4.9	9.1

INTERNATIONAL EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
MSCI ACWI	(8.4)	(15.7)	(20.2)	(15.8)	6.2	7.0	8.8
MSCI ACWI ex US	(8.6)	(13.7)	(18.4)	(19.4)	1.4	2.5	4.8
MSCI EAFE	(9.3)	(14.5)	(19.6)	(17.8)	1.1	2.2	5.4
MSCI EM	(6.6)	(11.4)	(17.6)	(25.3)	0.6	2.2	3.1
MSCI EAFE Small Cap	(11.0)	(17.7)	(24.7)	(24.0)	1.1	1.7	7.2
Style Index							
MSCI EAFE Growth	(8.6)	(16.9)	(26.8)	(23.8)	1.3	3.5	6.3
MSCI EAFE Value	(10.0)	(12.4)	(12.1)	(11.9)	0.2	0.5	4.2
Regional Index							
MSCI UK	(8.6)	(10.5)	(8.8)	(4.0)	1.2	2.2	3.7
MSCI Japan	(7.9)	(14.6)	(20.3)	(19.9)	1.0	1.8	5.6
MSCI Euro	(11.3)	(15.8)	(25.2)	(23.8)	(1.1)	0.4	5.3
MSCI EM Asia	(4.8)	(9.3)	(17.2)	(25.9)	3.1	3.4	5.5
MSCI EM Latin American	(17.0)	(21.9)	(0.6)	(16.1)	(6.3)	(0.6)	(2.2)

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
Bloomberg US TIPS	(3.2)	(6.1)	(8.9)	(5.1)	3.0	3.2	1.7
Bloomberg US Treasury Bills	(0.0)	0.1	0.0	0.0	0.6	1.1	0.6
Bloomberg US Agg Bond	(1.6)	(4.7)	(10.3)	(10.3)	(0.9)	0.9	1.5
Bloomberg US Universal	(2.0)	(5.1)	(10.9)	(10.9)	(0.9)	0.9	1.8
Duration							
Bloomberg US Treasury 1-3 Yr	(0.6)	(0.5)	(3.0)	(3.5)	0.2	0.9	0.8
Bloomberg US Treasury Long	(1.5)	(11.9)	(21.3)	(18.5)	(2.9)	0.5	1.6
Bloomberg US Treasury	(0.9)	(3.8)	(9.1)	(8.9)	(0.9)	0.7	1.0
Issuer							
Bloomberg US MBS	(1.6)	(4.0)	(8.8)	(9.0)	(1.4)	0.4	1.2
Bloomberg US Corp. High Yield	(6.7)	(9.8)	(14.2)	(12.8)	0.2	2.1	4.5
Bloomberg US Agency Interm	(0.6)	(1.3)	(5.0)	(5.6)	(0.3)	0.8	0.9
Bloomberg US Credit	(2.6)	(6.9)	(13.8)	(13.6)	(1.0)	1.2	2.5

OTHER

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Index							
Bloomberg Commodity	(10.8)	(5.7)	18.4	24.3	14.3	8.4	(0.8)
Wilshire US REIT	(7.3)	(5.4)	(14.9)	4.4	7.4	7.5	8.8
CS Leveraged Loans	(2.1)	(4.4)	(4.4)	(2.7)	2.0	3.0	3.9
S&P Global Infrastructure	(7.7)	(7.4)	(0.5)	5.6	3.5	4.8	7.2
Alerian MLP	(14.0)	(7.4)	10.1	4.1	(1.2)	(1.2)	0.8
Regional Index							
JPM EMBI Global Div	(6.2)	(11.4)	(20.3)	(21.2)	(5.2)	(1.2)	2.2
JPM GBI-EM Global Div	(4.5)	(8.6)	(14.5)	(19.3)	(5.8)	(2.3)	(1.5)
Hedge Funds							
HFRI Composite	(3.1)	(4.9)	(5.9)	(5.8)	6.1	5.0	5.0
HFRI FOF Composite	(0.9)	(3.6)	(6.3)	(5.2)	4.1	3.7	3.8
Currency (Spot)							
Euro	(2.4)	(6.0)	(8.1)	(11.8)	(2.8)	(1.7)	(1.9)
Pound Sterling	(3.6)	(7.8)	(10.3)	(12.1)	(1.5)	(1.3)	(2.5)
Yen	(5.3)	(10.7)	(15.2)	(18.3)	(7.4)	(3.7)	(5.2)

Source: Morningstar, HFRI, as of 6/30/22.

Definitions

Bloomberg US Weekly Consumer Comfort Index *- tracks the public's economic attitudes each week, providing a high-frequency read on consumer sentiment. The index, based on cell and landline telephone interviews with a random, representative national sample of U.S. adults, tracks Americans' ratings of the national economy, their personal finances and the buying climate on a weekly basis, with views of the economy's direction measured separately each month. (www.langerresearch.com)*

University of Michigan Consumer Sentiment Index *- A survey of consumer attitudes concerning both the present situation as well as expectations regarding economic conditions conducted by the University of Michigan. For the preliminary release approximately three hundred consumers are surveyed while five hundred are interviewed for the final figure. The level of consumer sentiment is related to the strength of consumer spending. (www.Bloomberg.com)*

NFIB Small Business Outlook *- Small Business Economic Trends (SBET) is a monthly assessment of the U.S. small-business economy and its near-term prospects. Its data are collected through mail surveys to random samples of the National Federal of Independent Business (NFIB) membership. The survey contains three broad question types: recent performance, near-term forecasts, and demographics. The topics addressed include: outlook, sales, earnings, employment, employee compensation, investment, inventories, credit conditions, and single most important problem. (http://www.nfib-sbet.org/about/)*

NAHB Housing Market Index – *the housing market index is a weighted average of separate diffusion induces for three key single-family indices: market conditions for the sale of new homes at the present time, market conditions for the sale of new homes in the next six months, and the traffic of prospective buyers of new homes. The first two series are rated on a scale of Good, Fair, and Poor and the last is rated on a scale of High/Very High, Average, and Low/Very Low. A diffusion index is calculated for each series by applying the formula "(Good-Poor + 100)/2" to the present and future sales series and "(High/Very High-Low/Very Low + 100)/2" to the traffic series. Each resulting index is then seasonally adjusted and weighted to produce the HMI. Based on this calculation, the HMI can range between 0 and 100.*

Notices & disclosures

Glossary

Allocation Effect: An attribution effect that describes the amount attributable to the managers' asset allocation decisions, relative to the benchmark.

Alpha: The excess return of a portfolio after adjusting for market risk. This excess return is attributable to the selection skill of the portfolio manager. Alpha is calculated as: Portfolio Return - [Risk-free Rate + Portfolio Beta x (Market Return - Risk-free Rate)].

Benchmark R-squared: Measures how well the Benchmark return series fits the manager's return series. The higher the Benchmark R-squared, the more appropriate the benchmark is for the manager.

Beta: A measure of systematic, or market risk; the part of risk in a portfolio or security that is attributable to general market movements. Beta is calculated by dividing the covariance of a security by the variance of the market.

Book-to-Market: The ratio of book value per share to market price per share. Growth managers typically have low book-to-market ratios while value managers typically have high book-to-market ratios.

Capture Ratio: A statistical measure of an investment manager's overall performance in up or down markets. The capture ratio is used to evaluate how well an investment manager performed relative to an index during periods when that index has risen (up market) or fallen (down market). The capture ratio is calculated by dividing the manager's returns by the returns of the index during the up/down market, and multiplying that factor by 100.

Correlation: A measure of the relative movement of returns of one security or asset class relative to another over time. A correlation of 1 means the returns of two securities move in lock step, a correlation of -1 means the returns of two securities move in the exact opposite direction over time. Correlation is used as a measure to help maximize the benefits of diversification when constructing an investment portfolio.

Excess Return: A measure of the difference in appreciation or depreciation in the price of an investment compared to its benchmark, over a given time period. This is usually expressed as a percentage and may be annualized over a number of years or represent a single period.

Information Ratio: A measure of a manager's ability to earn excess return without incurring additional risk. Information ratio is calculated as: excess return divided by tracking error.

Interaction Effect: An attribution effect that describes the portion of active management that is contributable to the cross interaction between the allocation and selection effect. This can also be explained as an effect that cannot be easily traced to a source.

Portfolio Turnover: The percentage of a portfolio that is sold and replaced (turned over) during a given time period. Low portfolio turnover is indicative of a buy and hold strategy while high portfolio turnover implies a more active form of management.

Price-to-Earnings Ratio (P/E): Also called the earnings multiplier, it is calculated by dividing the price of a company's stock into earnings per share. Growth managers typically hold stocks with high price-to-earnings ratios whereas value managers hold stocks with low price-to-earnings ratios.

R-Squared: Also called the coefficient of determination, it measures the amount of variation in one variable explained by variations in another, i.e., the goodness of fit to a benchmark. In the case of investments, the term is used to explain the amount of variation in a security or portfolio explained by movements in the market or the portfolio's benchmark.

Selection Effect: An attribution effect that describes the amount attributable to the managers' stock selection decisions, relative to the benchmark.

Sharpe Ratio: A measure of portfolio efficiency. The Sharpe Ratio indicates excess portfolio return for each unit of risk associated with achieving the excess return. The higher the Sharpe Ratio, the more efficient the portfolio. Sharpe ratio is calculated as: Portfolio Excess Return / Portfolio Standard Deviation.

Sortino Ratio: Measures the risk-adjusted return of an investment, portfolio, or strategy. It is a modification of the Sharpe Ratio, but penalizes only those returns falling below a specified benchmark. The Sortino Ratio uses downside deviation in the denominator rather than standard deviation, like the Sharpe Ratio.

Standard Deviation: A measure of volatility, or risk, inherent in a security or portfolio. The standard deviation of a series is a measure of the extent to which observations in the series differ from the arithmetic mean of the series. For example, if a security has an average annual rate of return of 10% and a standard deviation of 5%, then two-thirds of the time, one would expect to receive an annual rate of return between 5% and 15%.

Style Analysis: A return based analysis designed to identify combinations of passive investments to closely replicate the performance of funds

Style Map: A specialized form or scatter plot chart typically used to show where a Manager lies in relation to a set of style indices on a two-dimensional plane. This is simply a way of viewing the asset loadings in a different context. The coordinates are calculated by rescaling the asset loadings to range from -1 to 1 on each axis and are dependent on the Style Indices comprising the Map.

Disclaimer