Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

PERIOD ENDING: JUNE 30, 2022

Investment Performance Review for

Imperial County Employees' Retirement System

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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.

— 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

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

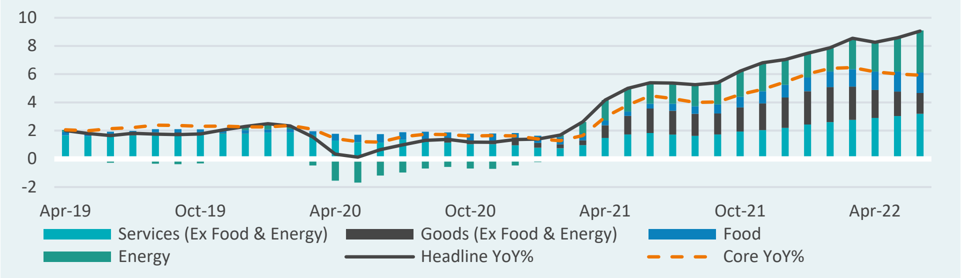
"Consumer Sentiment Plunges to Record Low Amid Surging Inflation"

UNIVERSITY OF MICHIGAN CONSUMER SENTIMENT INDEX

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

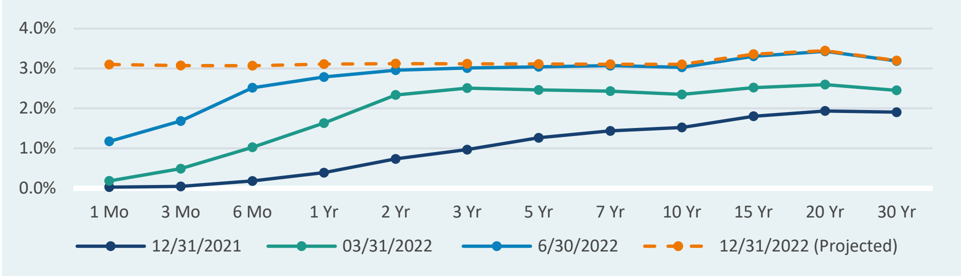
Article Source: CNN, June 10th, 2022

CONTRIBUTION TO HEADLINE CONSUMER PRICE INFLATION



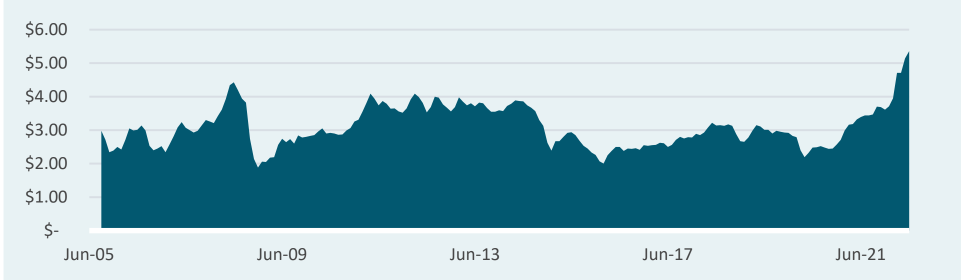
Source: Bureau of Labor Statistics, as of 6/30/22

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*

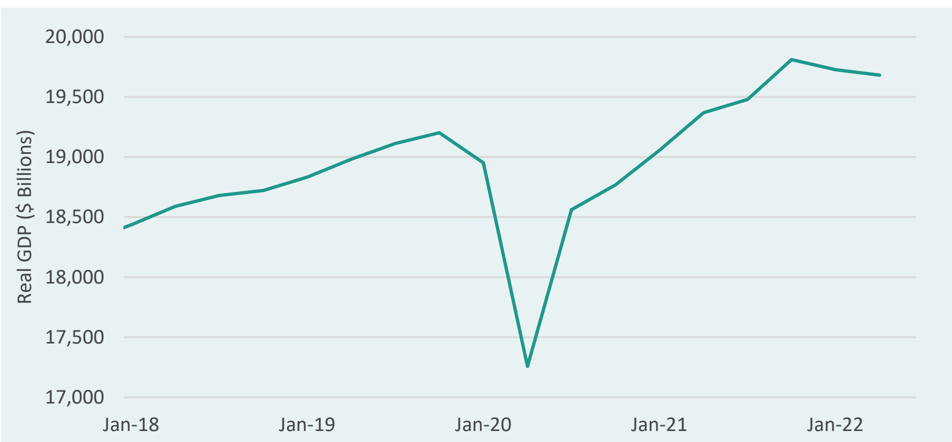
GDP growth

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.

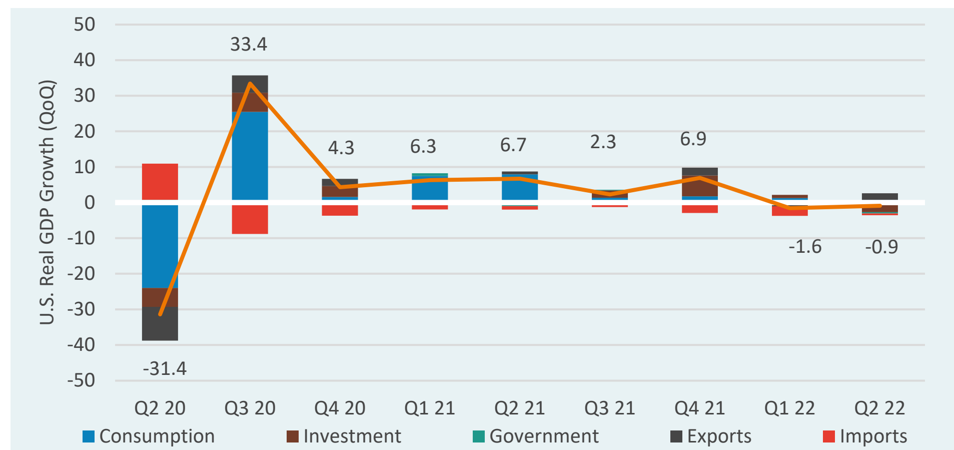
The U.S. has likely entered recession

U.S. REAL GROSS DOMESTIC PRODUCT



Source: FRED, as of 6/30/22

U.S. REAL GDP COMPONENTS (QOQ)



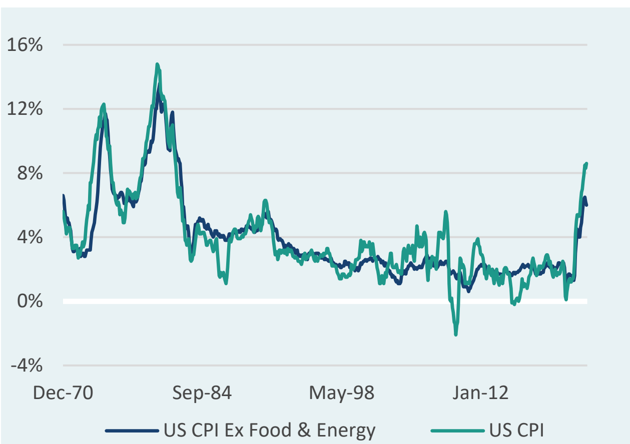
Source: FRED, as of 6/30/22

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.

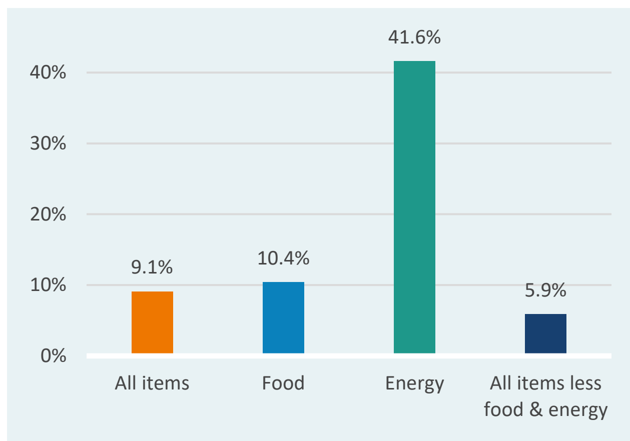
We believe there is a rising chance of economic deceleration coinciding with a drop in inflation. There appear to be a variety of forces that could contribute to this scenario, such as: the recent sharp fall in commodity prices, Federal Reserve tightening which has contributed to a slowdown in consumer 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)



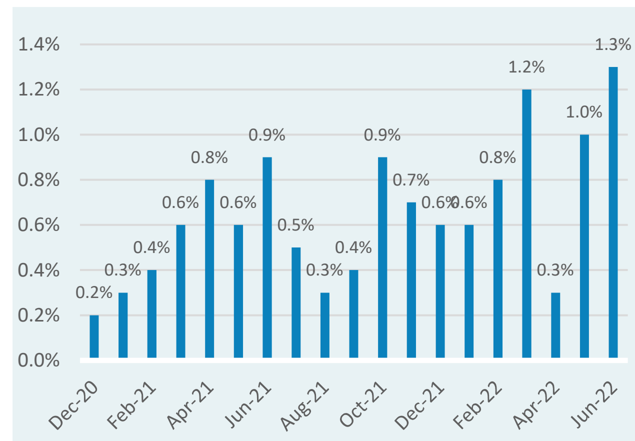
Source: BLS, as of 6/30/22

U.S. CPI (YOY)



Source: BLS, as of 6/30/22

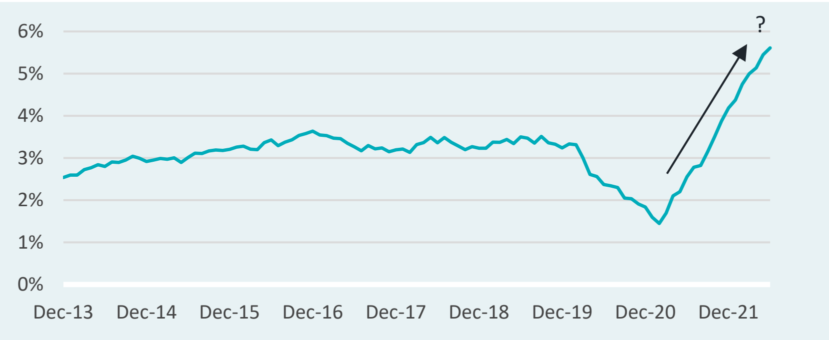
MONTHLY PRICE MOVEMENT



Source: BLS, as of 6/30/22

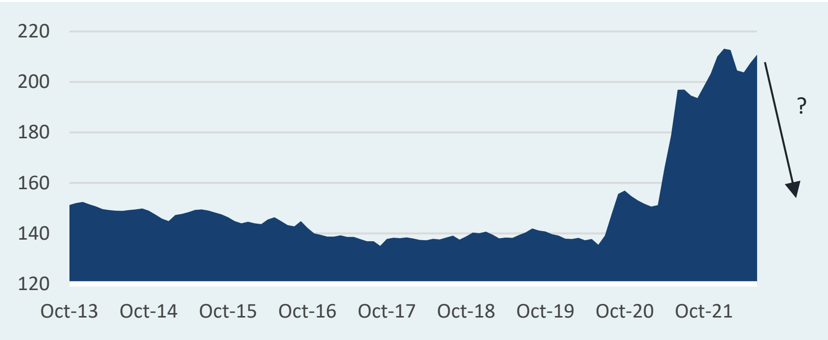
How are inflation conditions evolving?

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

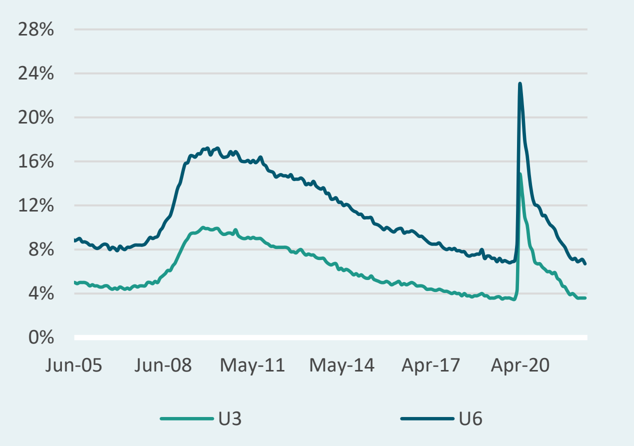
Labor market

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.

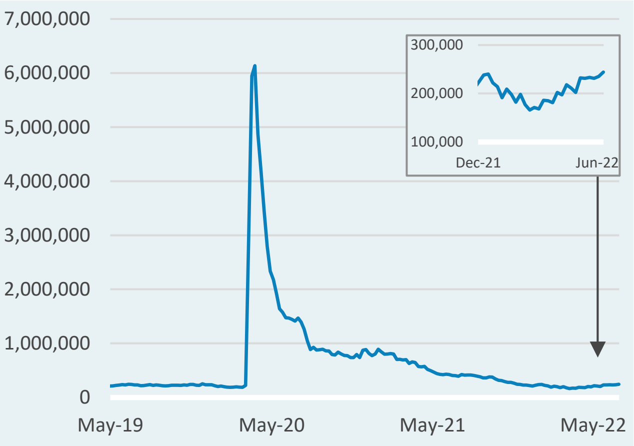
Abnormally early retirements of older workers during the pandemic had a large impact on the overall U.S. labor participation rate. While workers younger than age 55 have gradually gone back to work, much of the age 55+ cohort has not returned to the job market. In fact, more workers in the 55+ age cohort 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



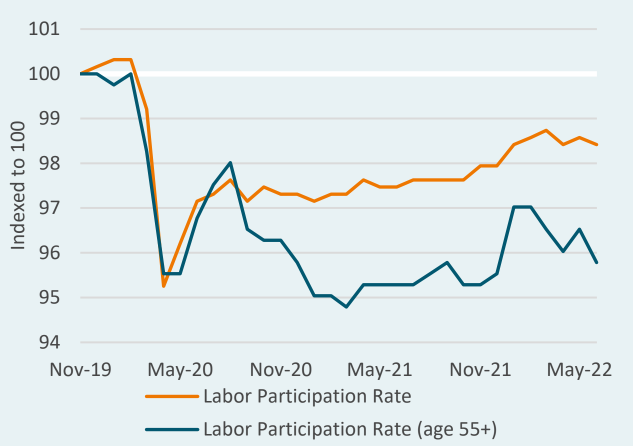
Source: FRED, as of 6/30/22

INITIAL JOBLESS CLAIMS



Source: FRED, as of 7/9/22

U.S. LABOR PARTICIPATION RATE



Source: FRED, as of 6/30/22

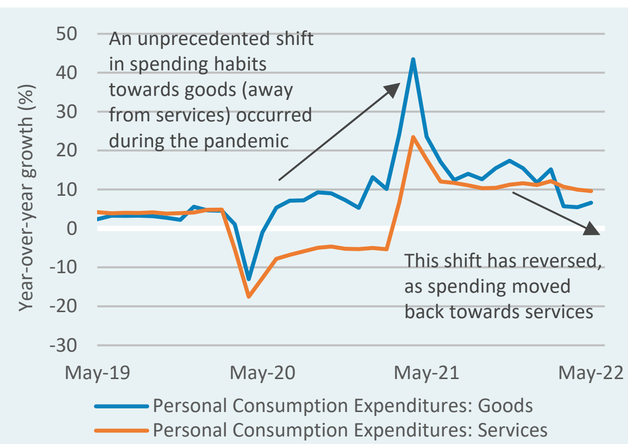
The consumer

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.

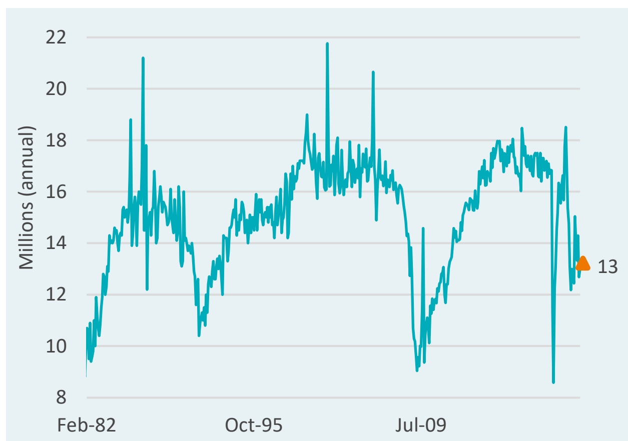
Auto sales activity remains very weak, at levels that have historically occurred during recession. The long-lasting semiconductor shortage has created widespread difficulties for auto manufacturers and has led to skyrocketing used vehicle prices. We also suspect that stimulus checks and heightened spending 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



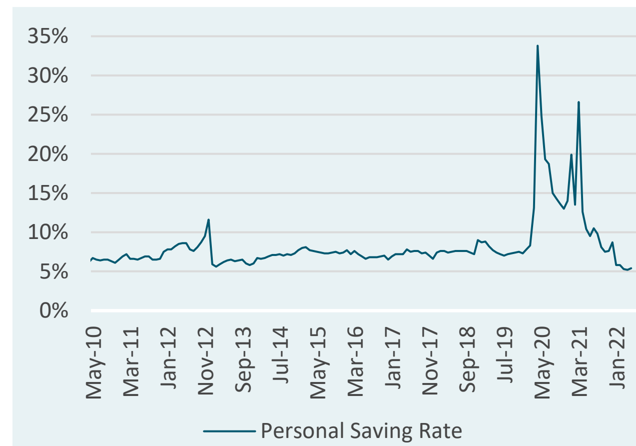
Source: FRED, as of 5/31/22

AUTO SALES



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

PERSONAL SAVINGS RATE



Source: FRED, as of 5/31/22

Sentiment

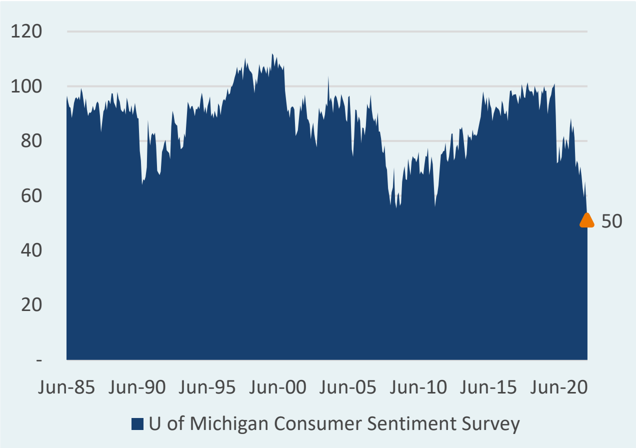
Consumer sentiment collapsed to the lowest reading on record, according to the University of Michigan survey, which fell from 59.4 to 50.0 during Q2. Survey respondents across all income, age, education, region, and political affiliation groups showed deterioration in their outlook for the economy. Nearly 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.

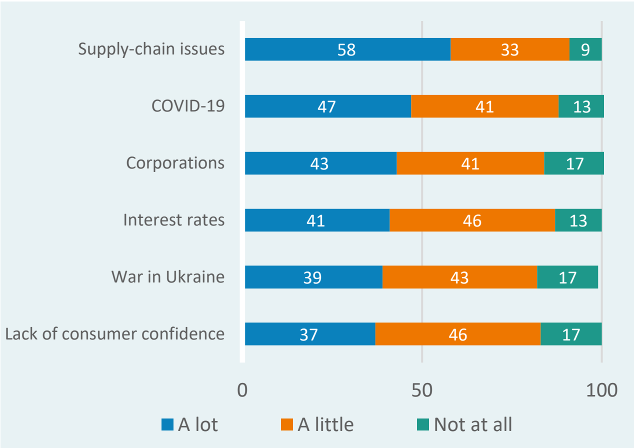
Sentiment, by most measures, is extremely poor

CONSUMER SENTIMENT



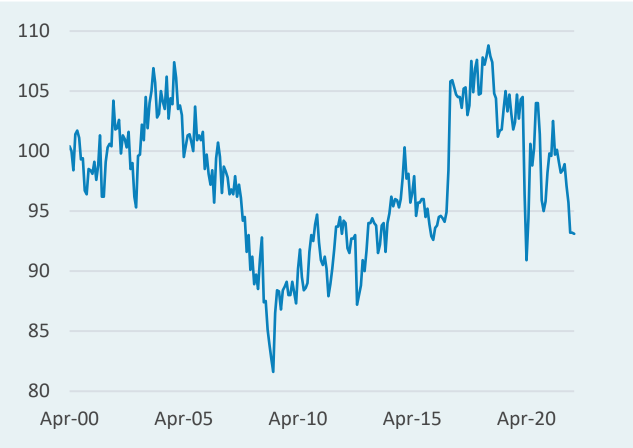
Source: University of Michigan, as of 6/30/22

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

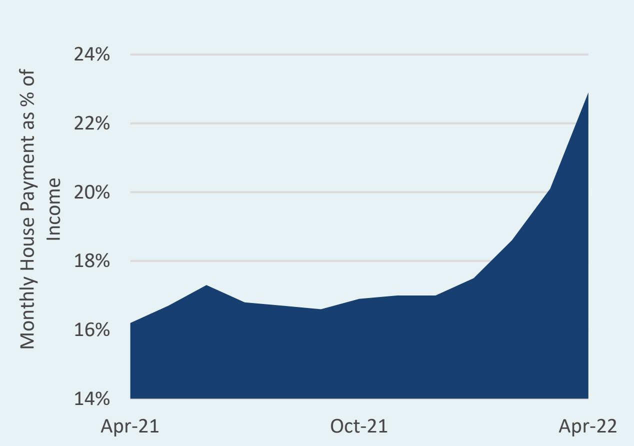
Housing

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.

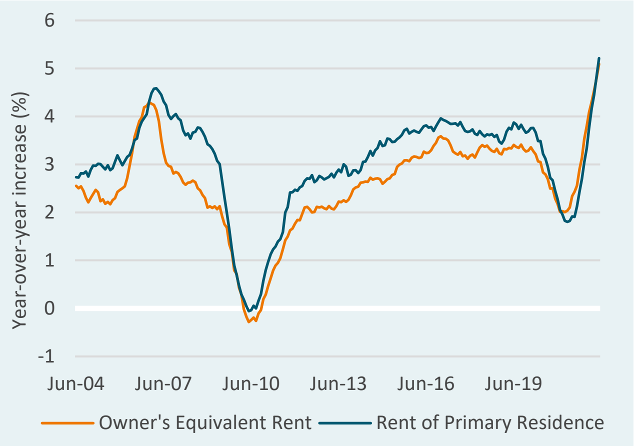
Historically, larger jumps in interest rates resulted in a softening of the real estate market and placed downward pressure on home values, all else equal. This effect appears to be occurring somewhat in recent months, as home sales have fallen to pre-pandemic levels and bidding wars have become less 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



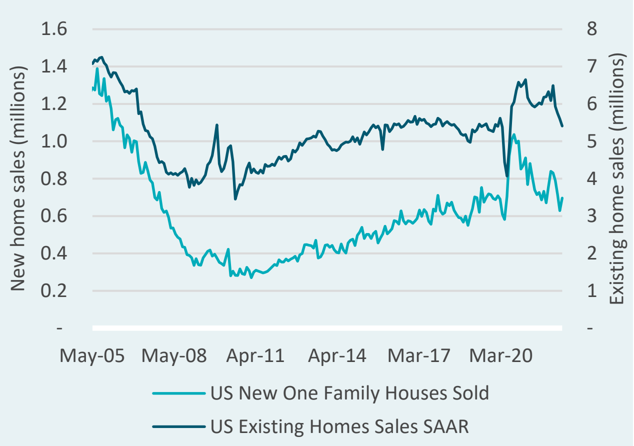
Source: National Association of Realtors, as of 4/30/22
Census Bureau median family income is compared here to the monthly cost (principal + interest) of an average priced home

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.

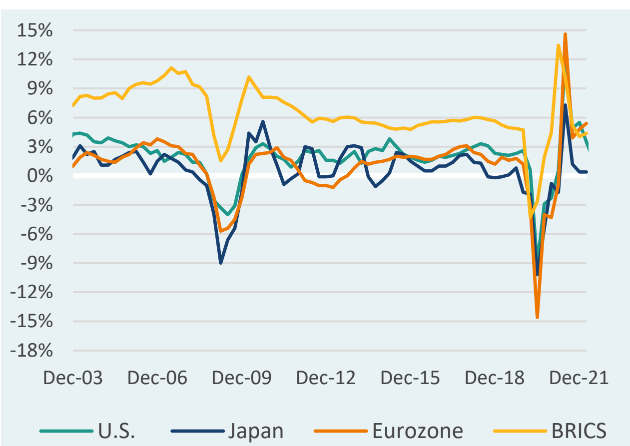
International economics

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.

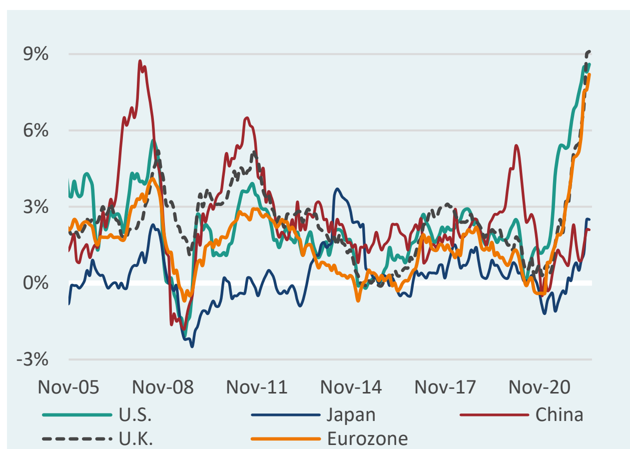
Unemployment rates were relatively stable in developed markets, with conditions in the Eurozone strengthening. Joblessness in emerging markets was mixed—Brazil and Russia experienced improvement, while India and China saw a slight weakening.

REAL GDP GROWTH (YOY)



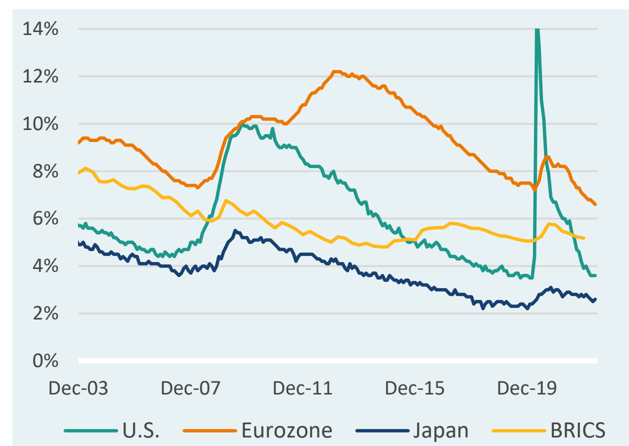
Source: Bloomberg, as of 6/30/22

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.

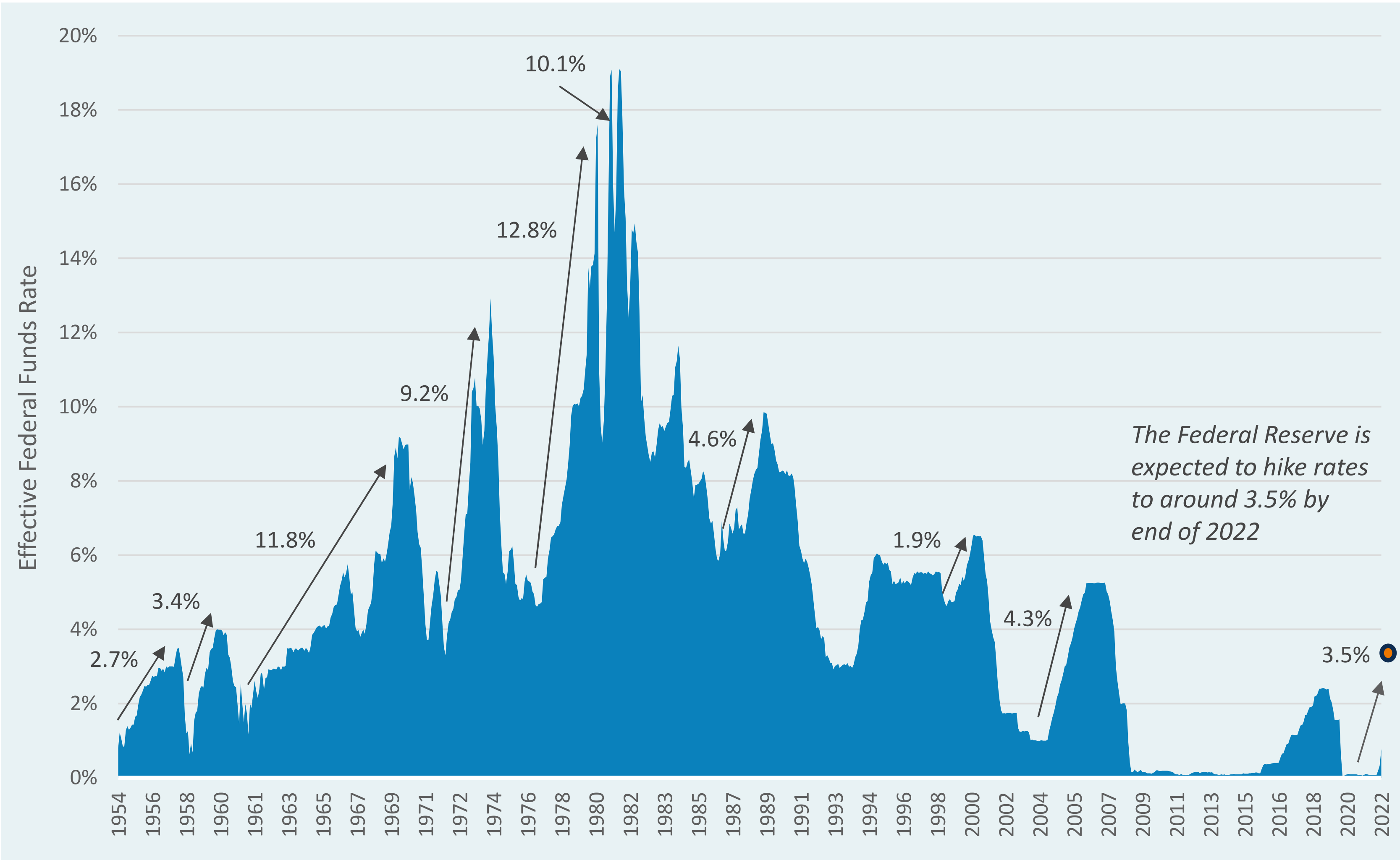
— The U.S. yield curve remained fairly flat during the second quarter. The 10-year minus 2-year yield spread fluctuated between -0.05% and 0.4%. Markets continue to price a flat or inverted yield curve, which is generally recognized as a sign of incoming recession.

— 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?



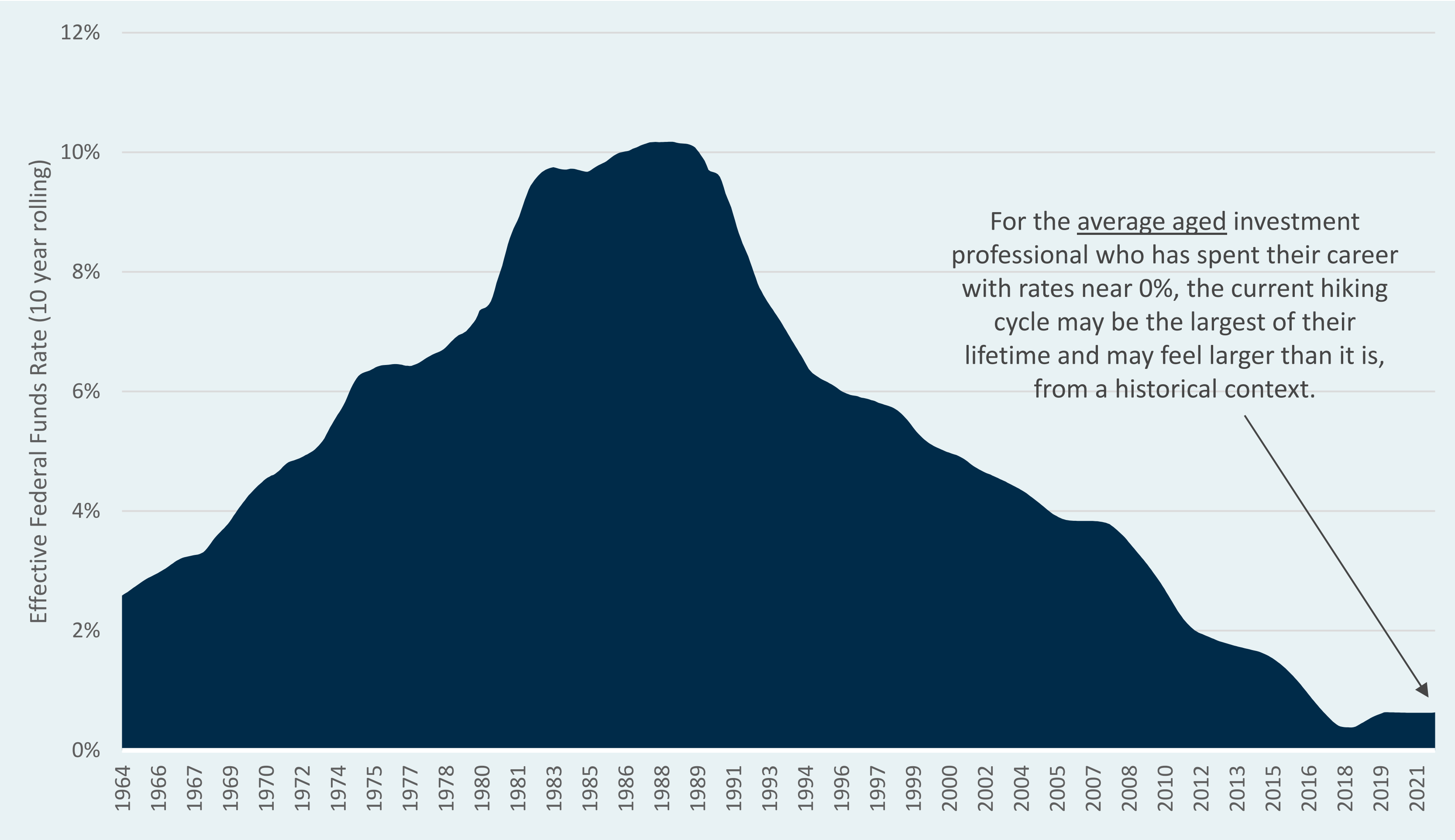
This tightening cycle is milder than most, in terms of total magnitude of hikes

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?

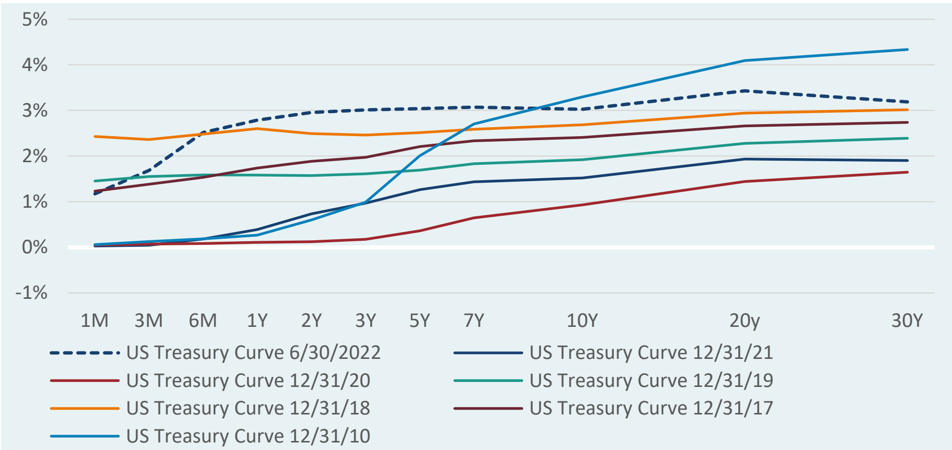
10 YEAR ROLLING AVERAGE FED FUNDS LEVEL



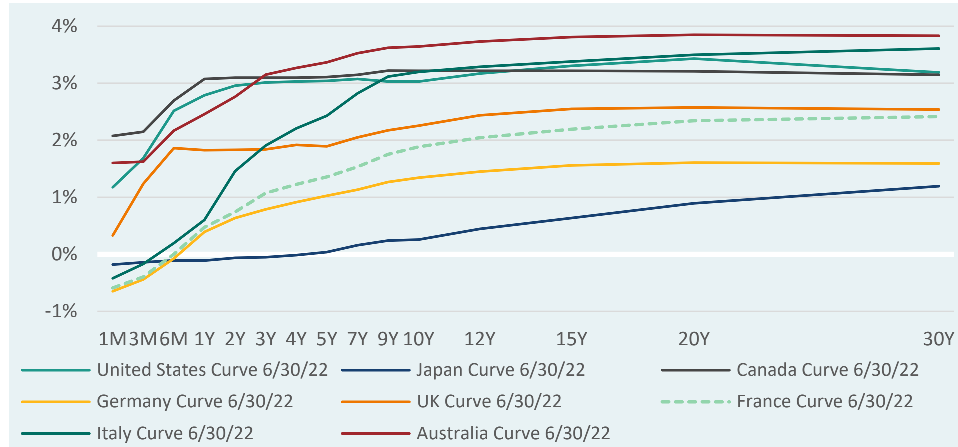
Source: FRED, Verus, as of 6/30/22

Yield environment

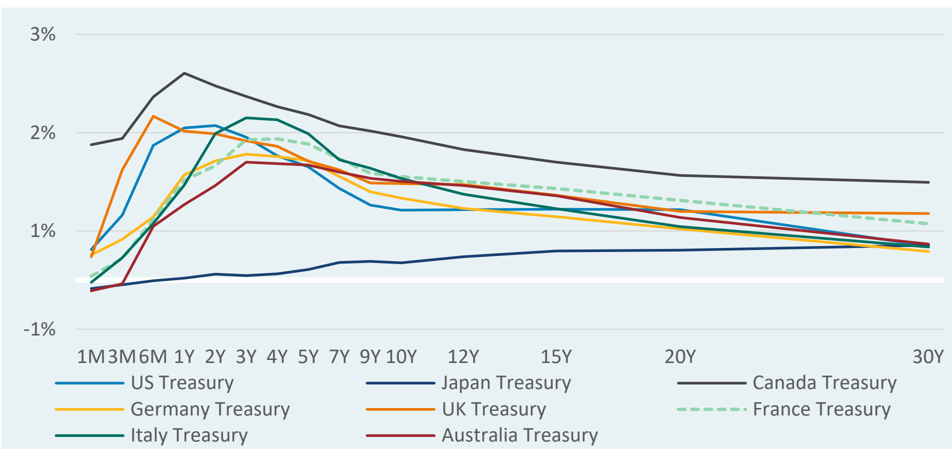
U.S. YIELD CURVE



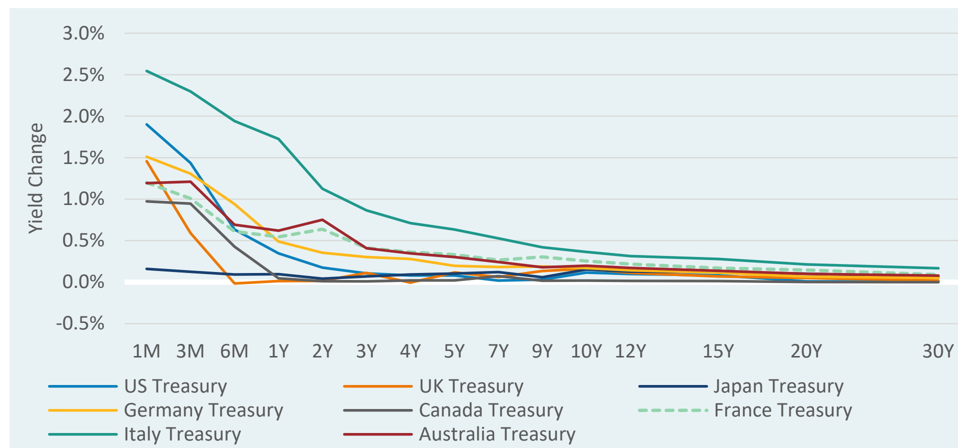
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 6/30/22

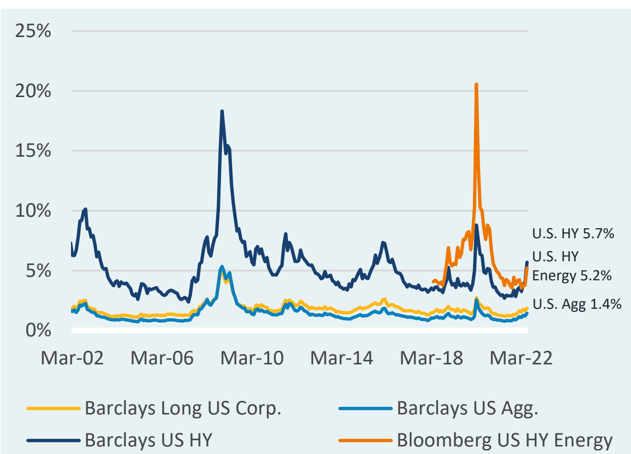
Credit environment

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.

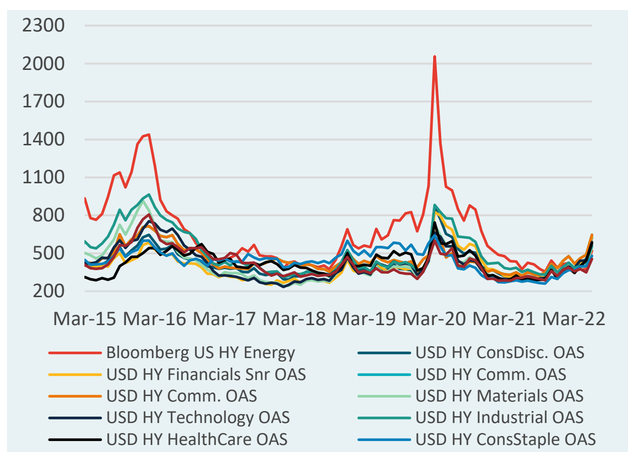
At the end of June, the Bloomberg US High Yield Index offered a yield just shy of 9%, up more than 4% from the beginning of the year. While these levels appear attractive in the context of the recent low yield environment, there is still potential for spreads to widen from these levels if recession concerns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

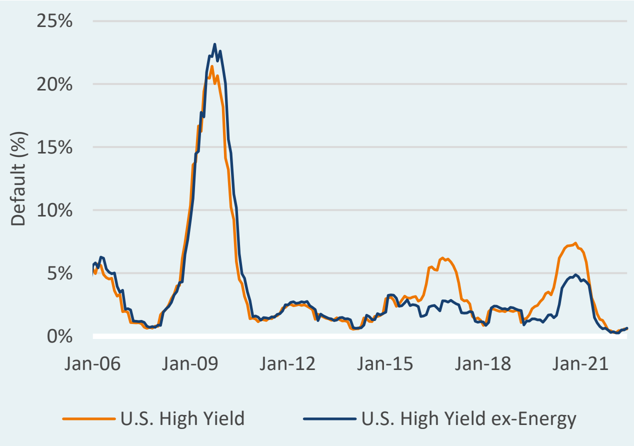
Default & issuance

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.

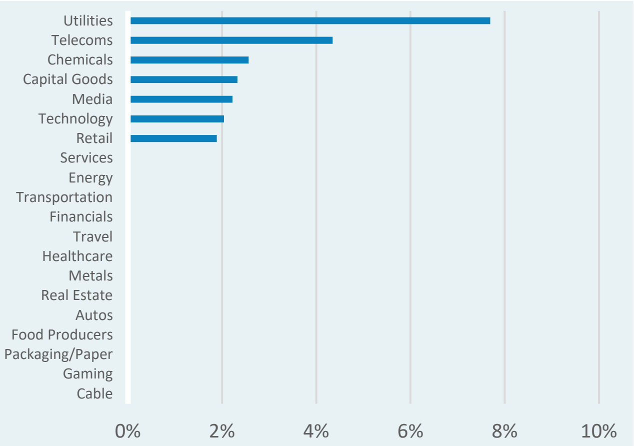
Leveraged credit issuance continued to be light amid high market volatility. The $24.6 billion of high yield bonds issued over the quarter was the lowest issuance since the fourth quarter of 2018 and second lowest total since 2009. Similarly, bank loan issuance totaled $60.6 billion, which was down from $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)



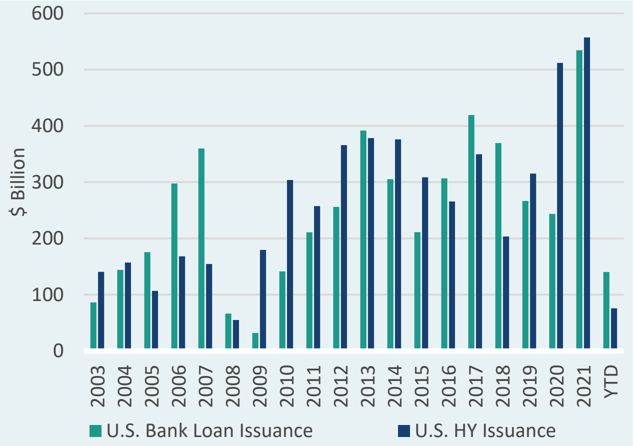
Source: BofA Merrill Lynch, as of 6/30/22

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

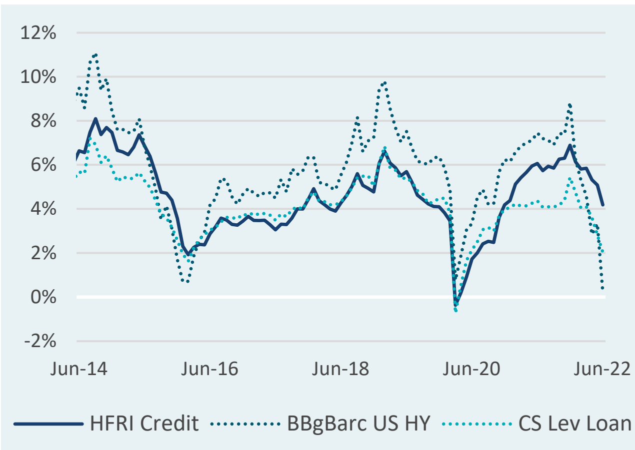
Alternative credit

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.

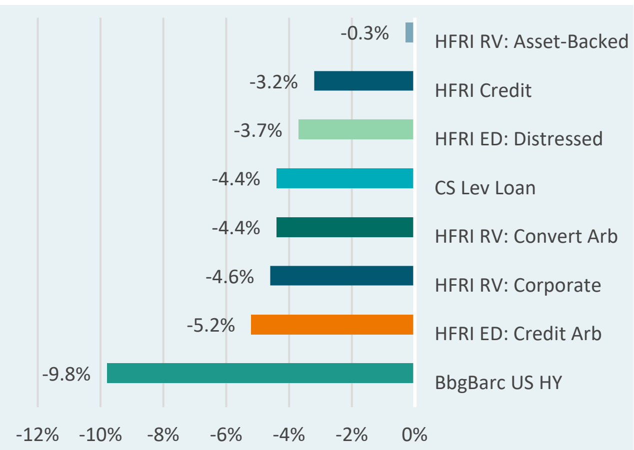
Looking closer within hedge fund credit, managers focused on structured credit remained the bright spot with only slightly negative returns for the quarter and continued outperformance relative to other credit strategies and fixed income markets.

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.

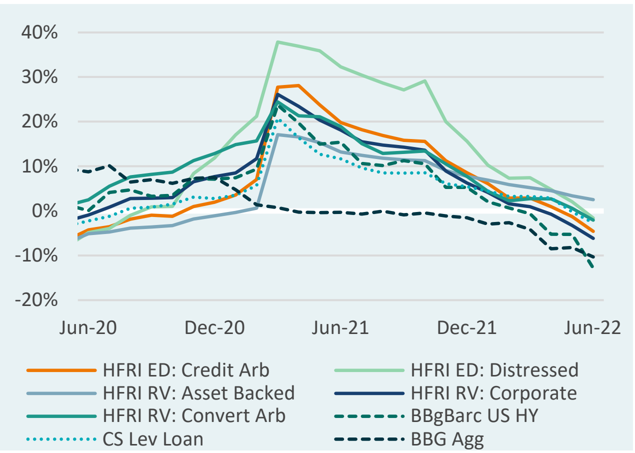
3 YEAR ROLLING ANNUALIZED RETURN



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%).

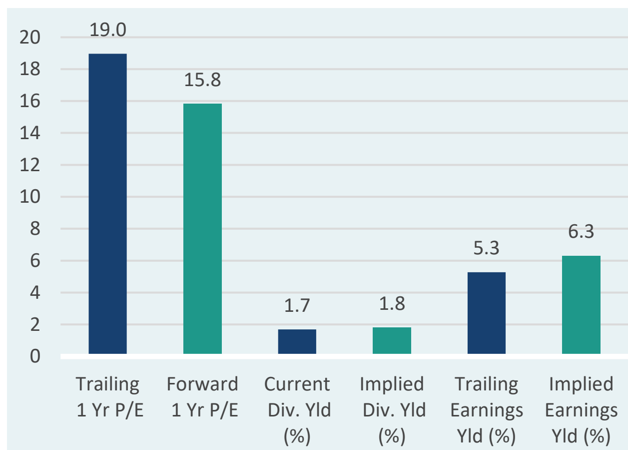
Calendar year 2022 bottom-up earnings estimates for the S&P 500 improved slightly during the quarter, despite the equity bear market. A rosier earnings outlook was fueled mostly by the energy and materials sectors, while consumer discretionary and communication services sectors saw worsening expectations. 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

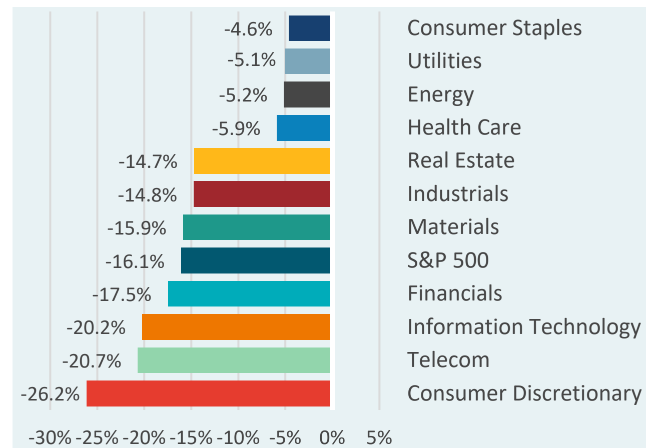
Source: Standard & Poor's, as of 6/30/22

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

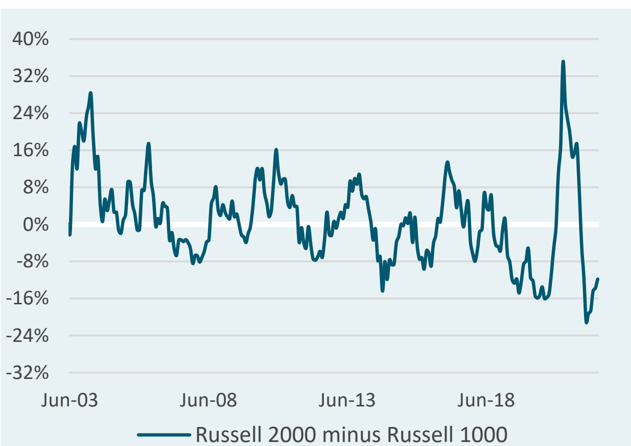
Value stocks outperformed Growth stocks by a wide margin once again in the second quarter (Russell 1000 Value -12.2% vs Russell 1000 Growth -20.9%) as many Growth stocks with lofty valuations suffered due to rising interest rates and broader risk-off sentiment. Large capitalization stocks outperformed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

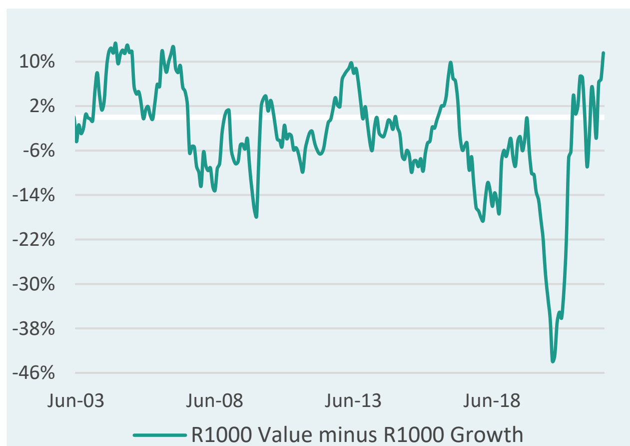
A rebound in Value continued during Q2

SMALL CAP VS LARGE CAP (YOY)



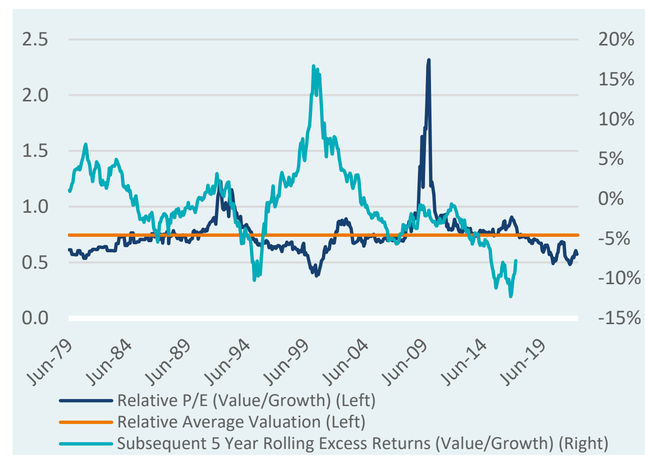
Source: FTSE, as of 6/30/22

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.

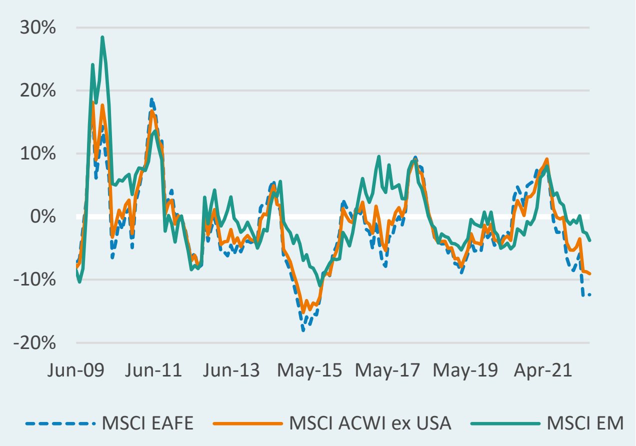
Currency movement during the quarter generated large losses for investors who do not hedge foreign currency exposure. Investors in international developed markets would have seen a loss of approximately -7.3% with a currency hedging program, rather than the -14.5% loss if currency was left unhedged.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

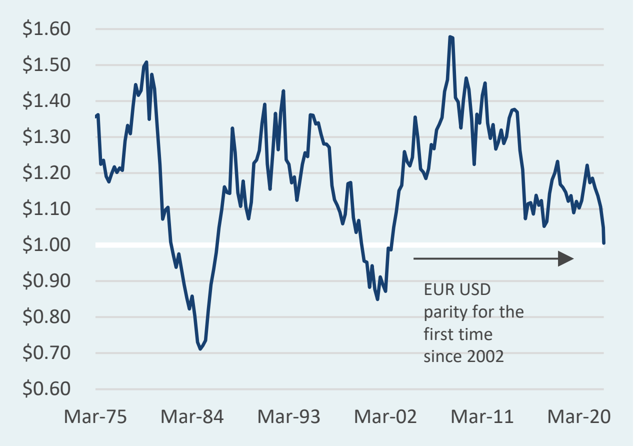
Source: MSCI, as of 6/30/22

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.

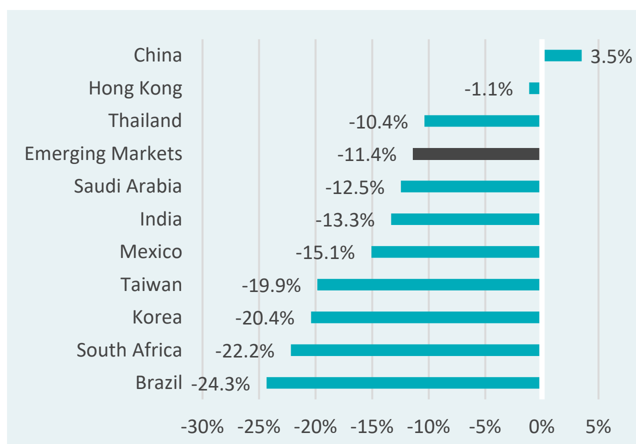
Strong returns from the consumer discretionary sector (12.9%)—the largest sector in the MSCI China Index—propelled Chinese equity performance forward. Outside of Chinese equities, emerging markets struggled, as central banks around the world tightened policy to fight inflation. Emerging market countries 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

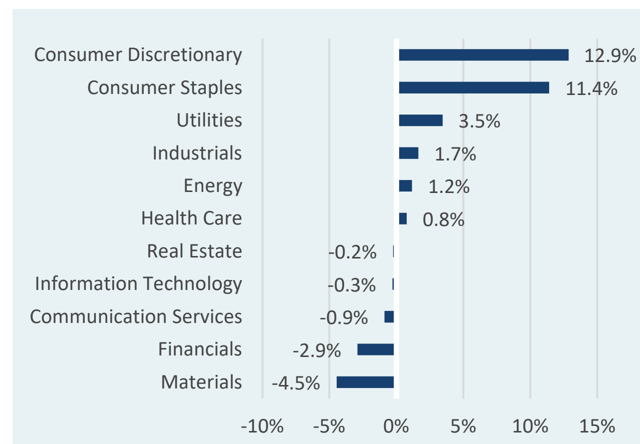
Source: MSCI, as of 6/30/22

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

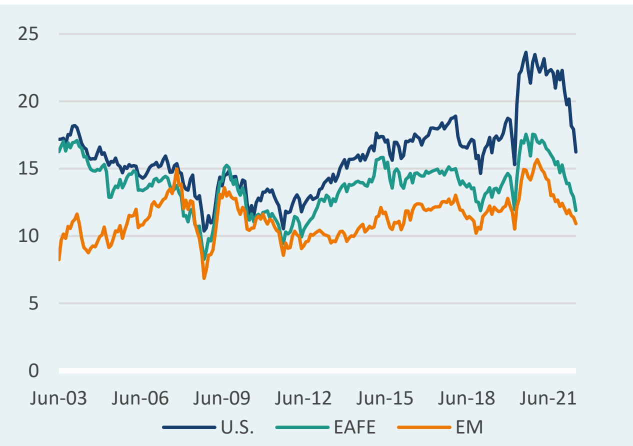
Equity valuations

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.

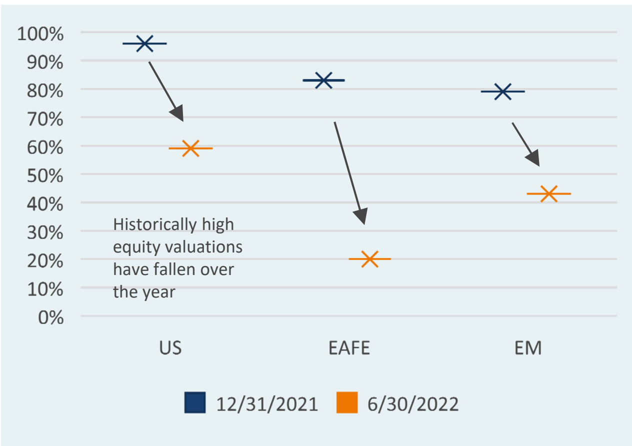
Most equity valuations have moved back towards normal levels, though U.S. prices remain rich

FORWARD P/E RATIOS



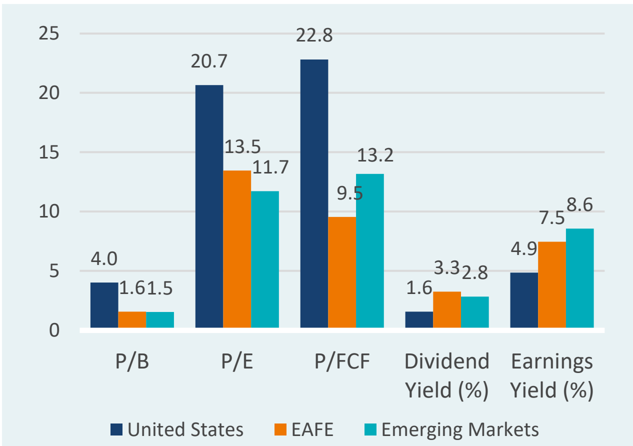
Source: MSCI, 12m forward P/E, as of 6/30/22

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

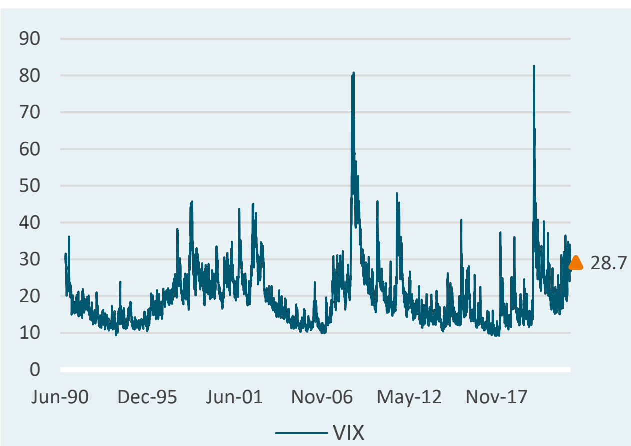
Equity volatility

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.

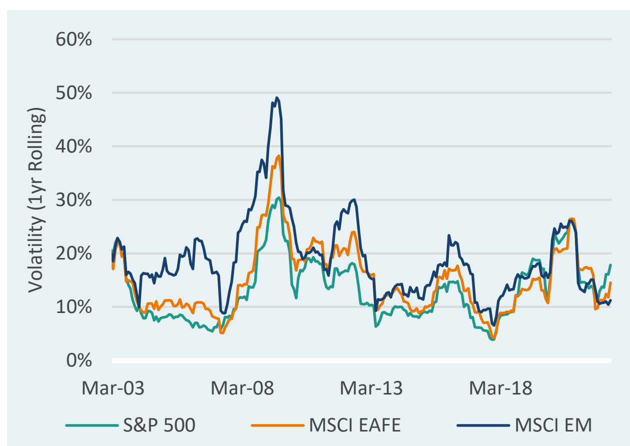
The 2022 equity bear market, while fairly moderate in speed and magnitude by historical standards, may justifiably feel severe for investors due to the broad-based nature of the selloff. Fixed income has delivered notable losses, failing to provide the diversification which investors expect. Commodities 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)



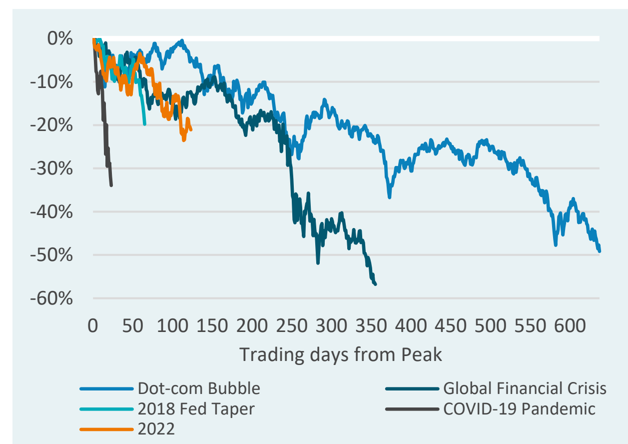
Source: Cboe, as of 6/30/22

REALIZED VOLATILITY



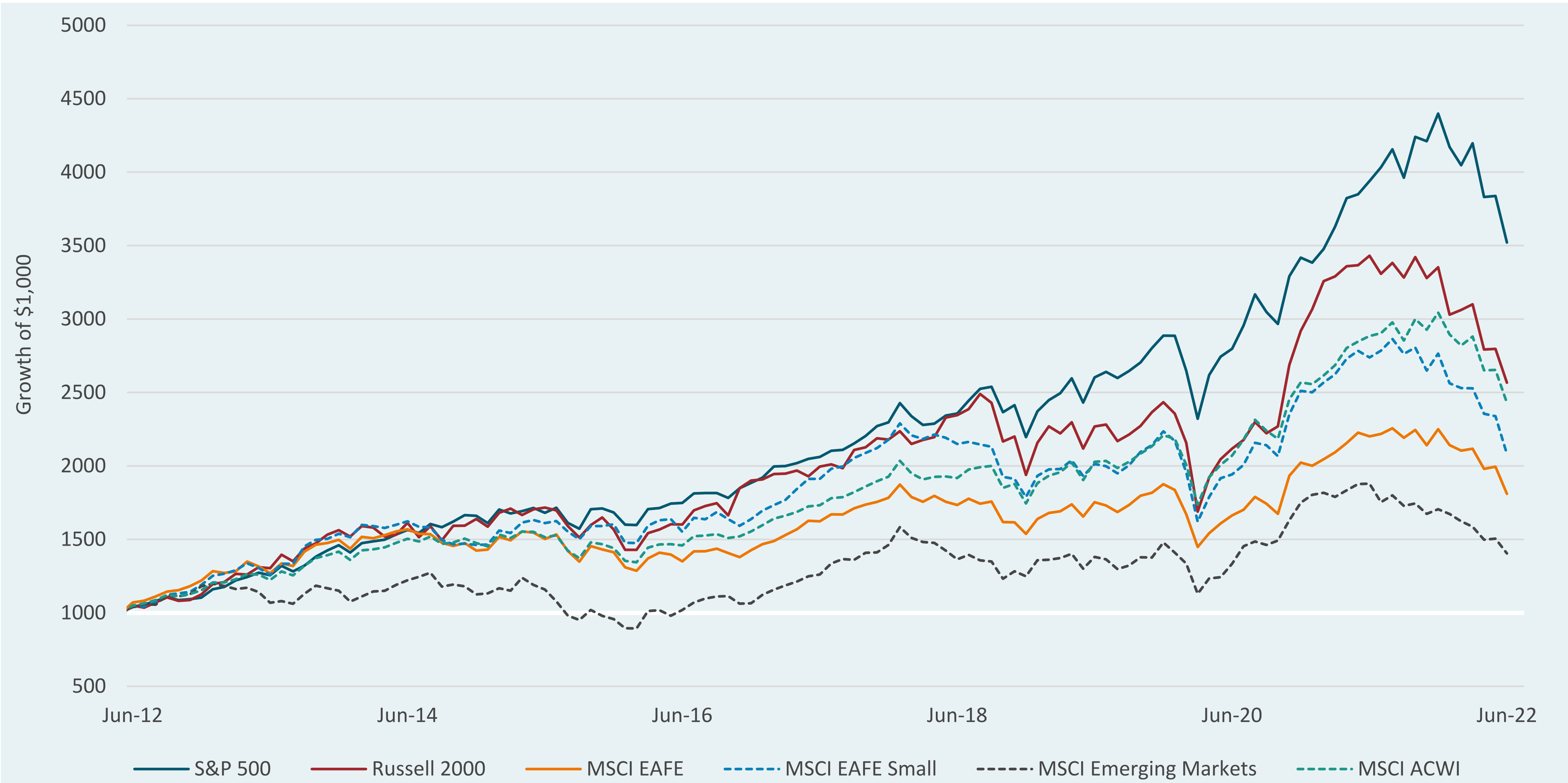
Source: Standard & Poor's, MSCI, as of 6/30/22

S&P 500 PEAK DRAWDOWNS



Source: Bloomberg, as of 6/30/22

Long-term equity performance



Source: Morningstar, as of 6/30/22

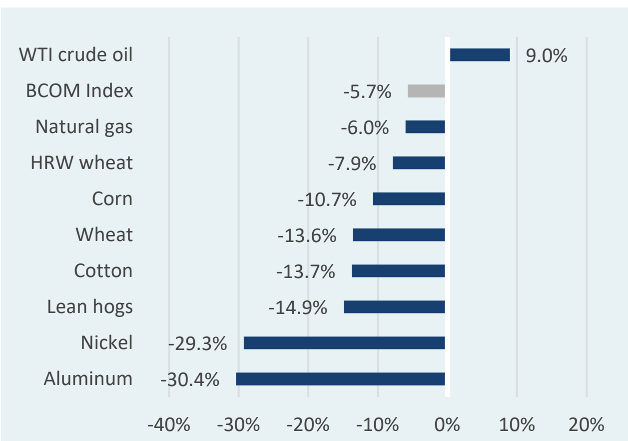
Other assets

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.

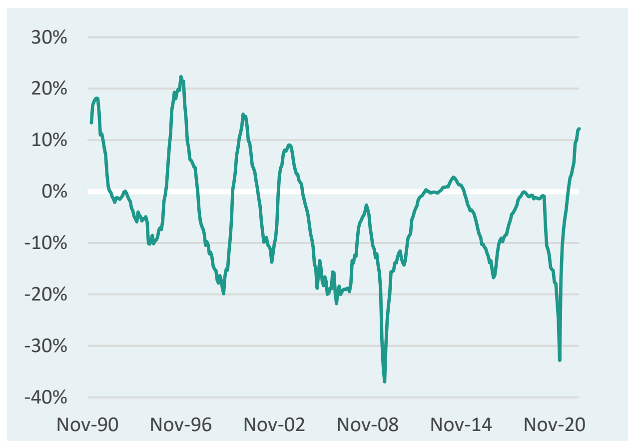
Early in 2022 many investors expressed fears about a potential global commodity supply shortage, perhaps fueled by underinvestment in production capacity preceding and throughout the COVID-19 recession. Russia's invasion of Ukraine further amplified these fears and commodity price growth accelerated 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)

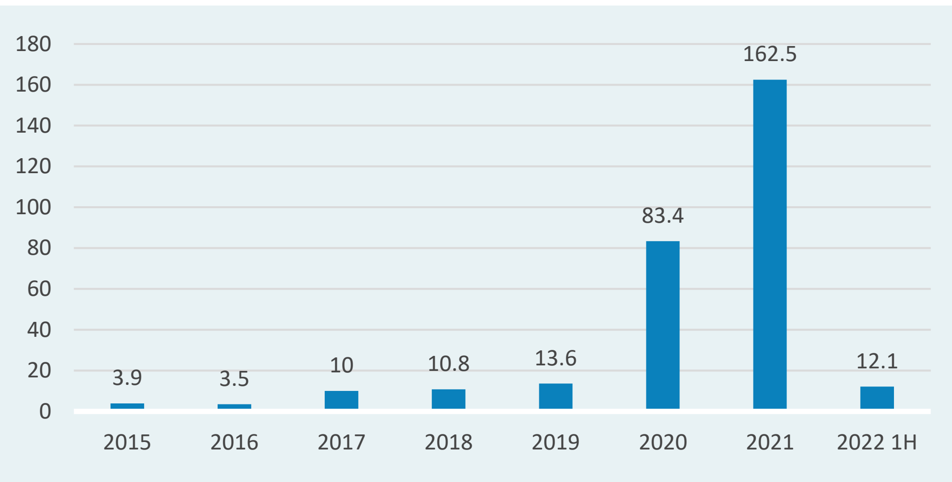
Source: Morningstar, as of 6/30/22

SPACs development

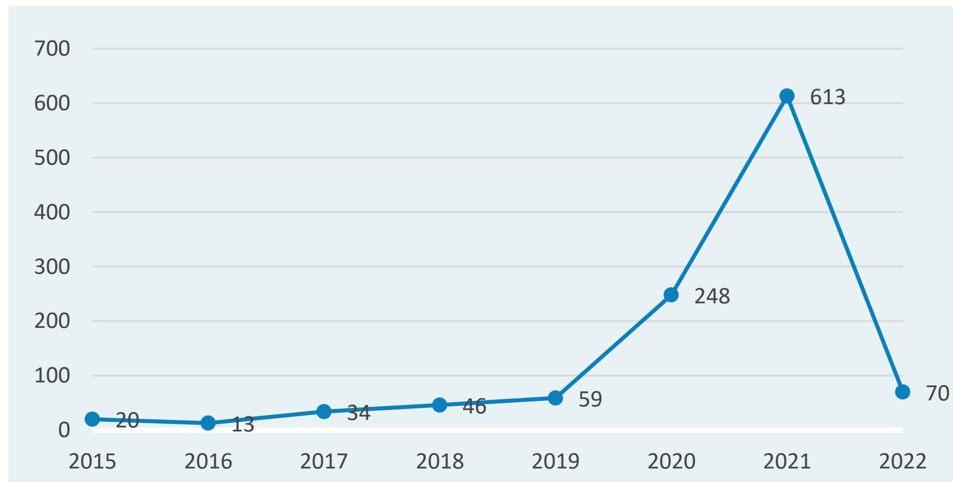
While SPACs proliferated between 2020 through 2021, coinciding with record retail investor trading volume, this activity has subsided notably in 2022.

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

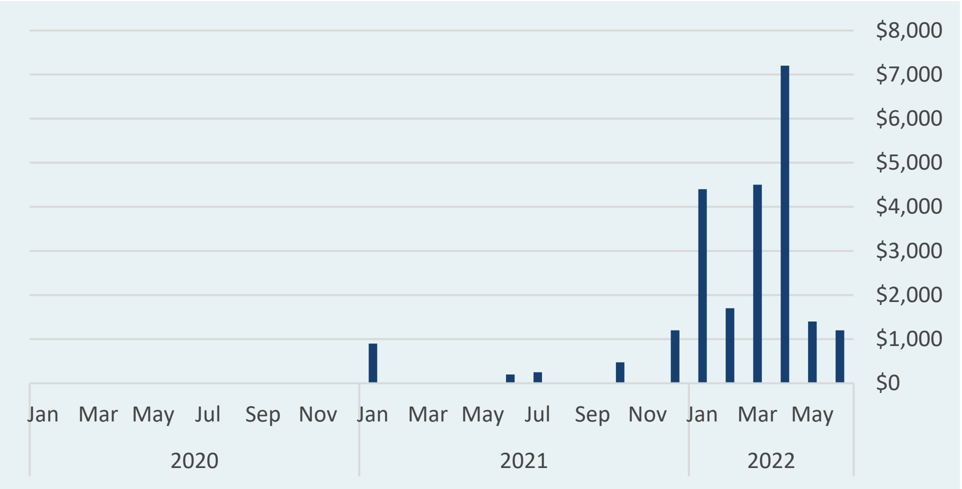
— For **institutional investors**: A number of companies that initially went public via a merger with a SPAC have seen very large share price declines and have since been acquired by a competitor at a far lower price.

— 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

	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

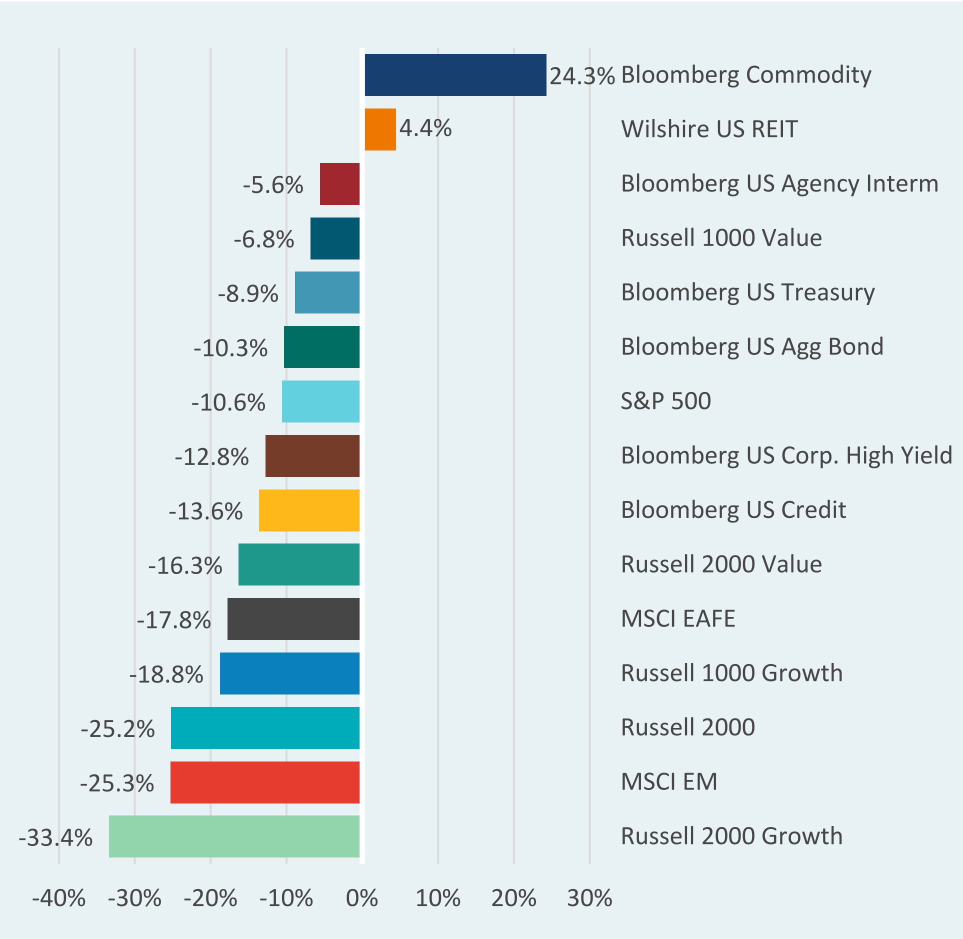
WORST

- 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

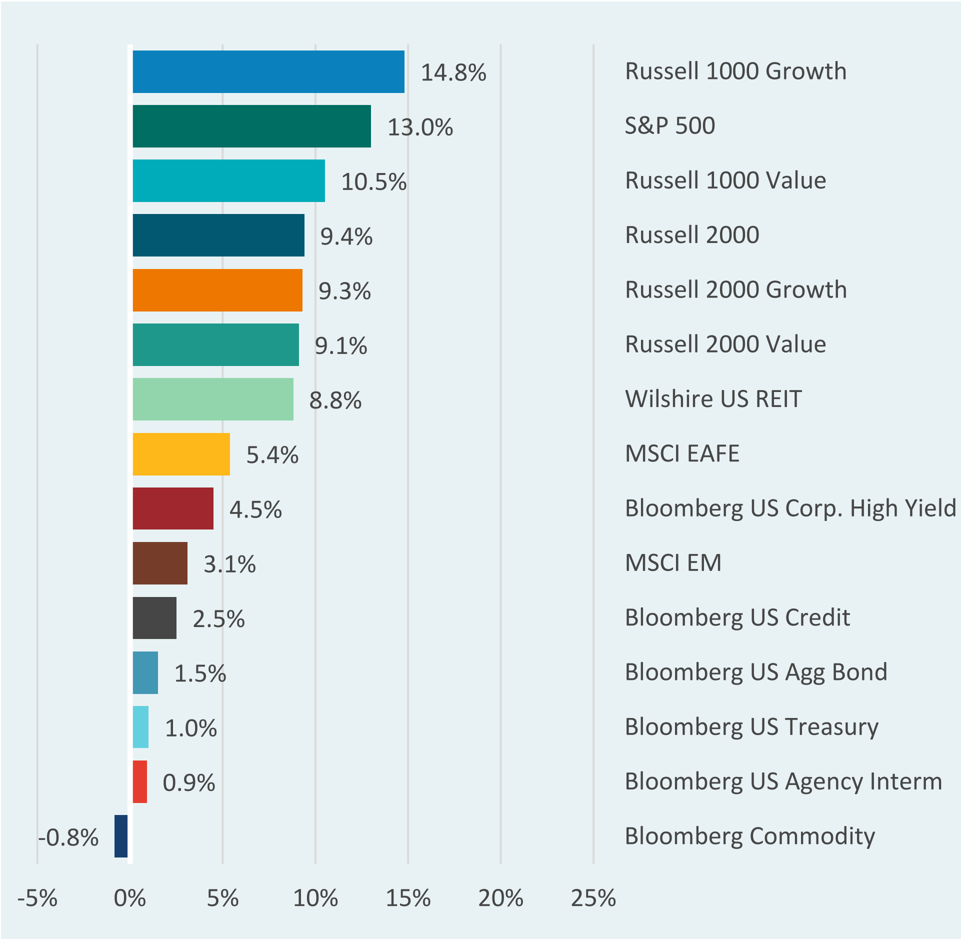
Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, Bloomberg US Aggregate, T-Bill 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



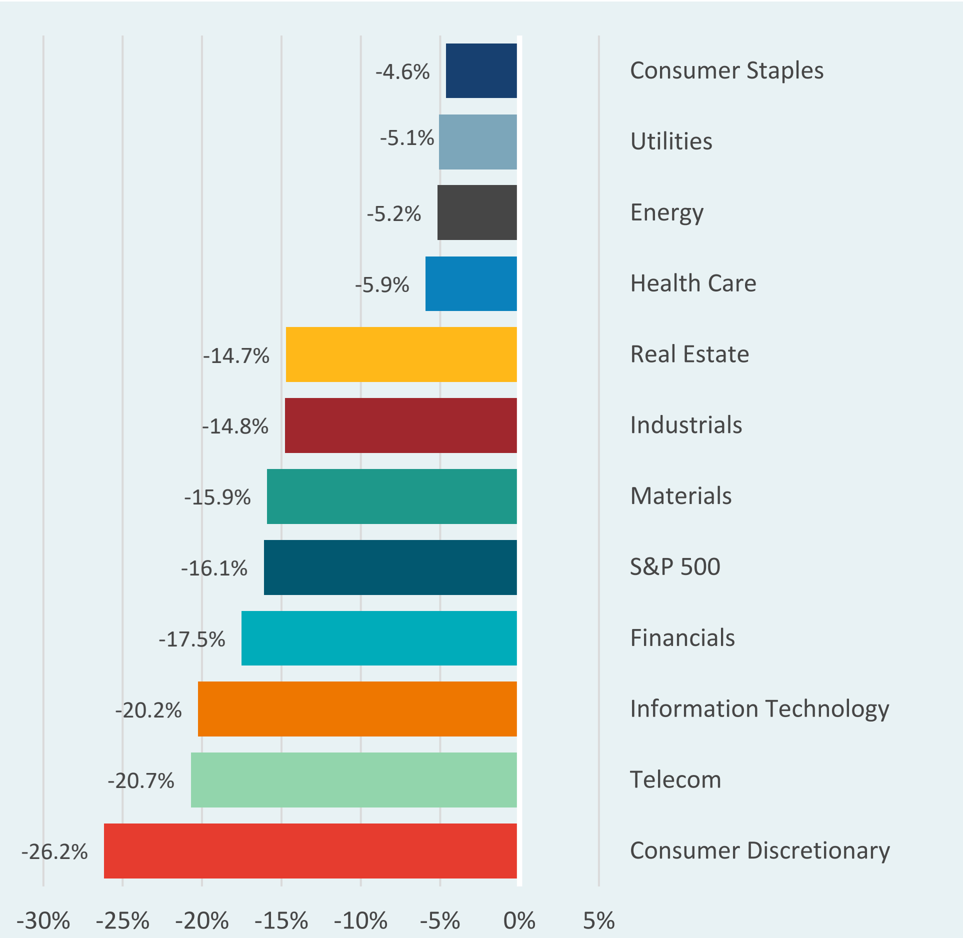
**Only publicly traded asset performance is shown here. Performance of private assets is typically released with a 3- to 6-month delay.*

Source: Morningstar, as of 6/30/22

Source: Morningstar, as of 6/30/22

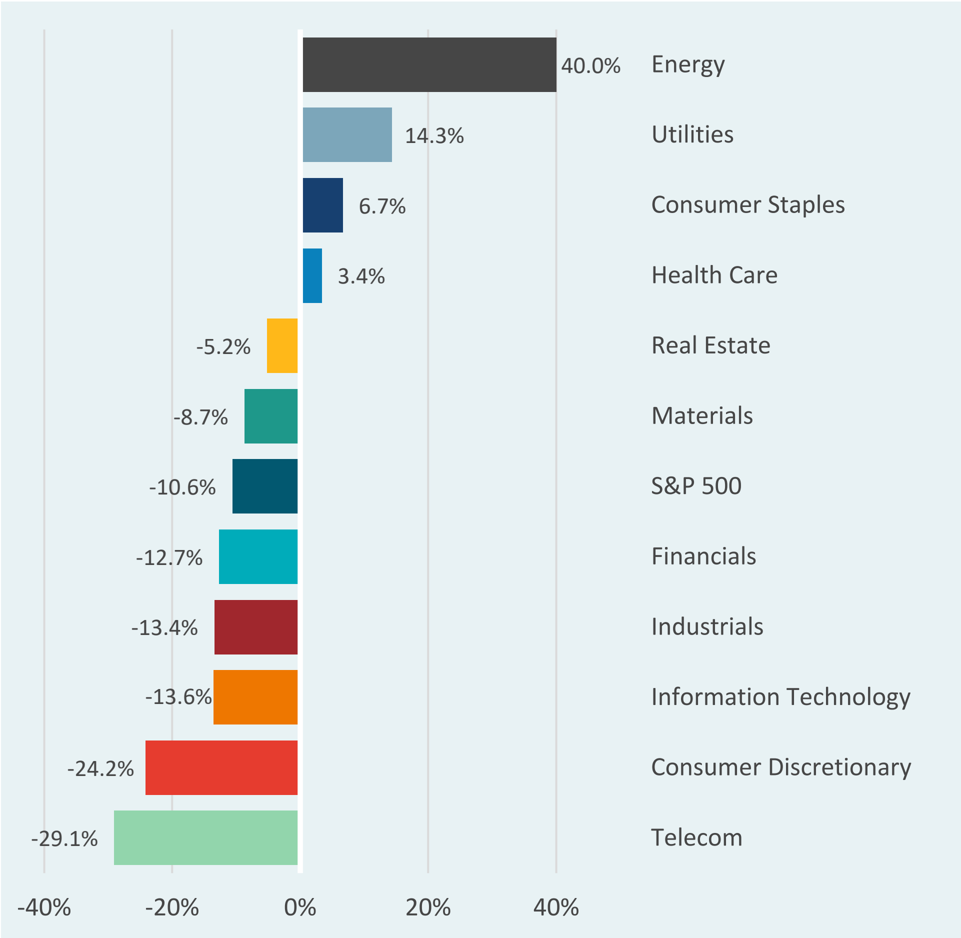
S&P 500 sector returns

QTD



Source: Morningstar, as of 6/30/22

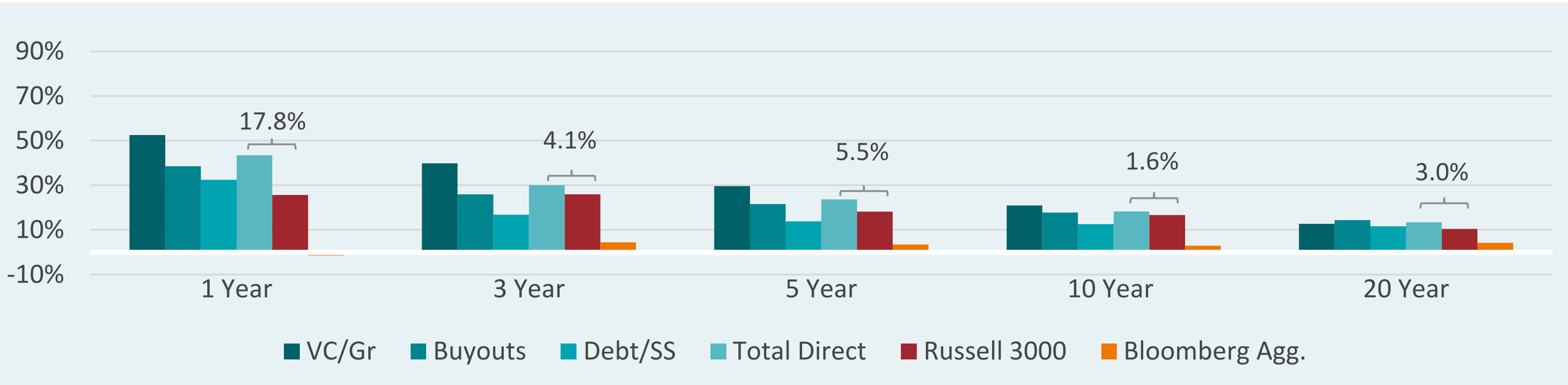
ONE YEAR ENDING JUNE



Source: Morningstar, as of 6/30/22

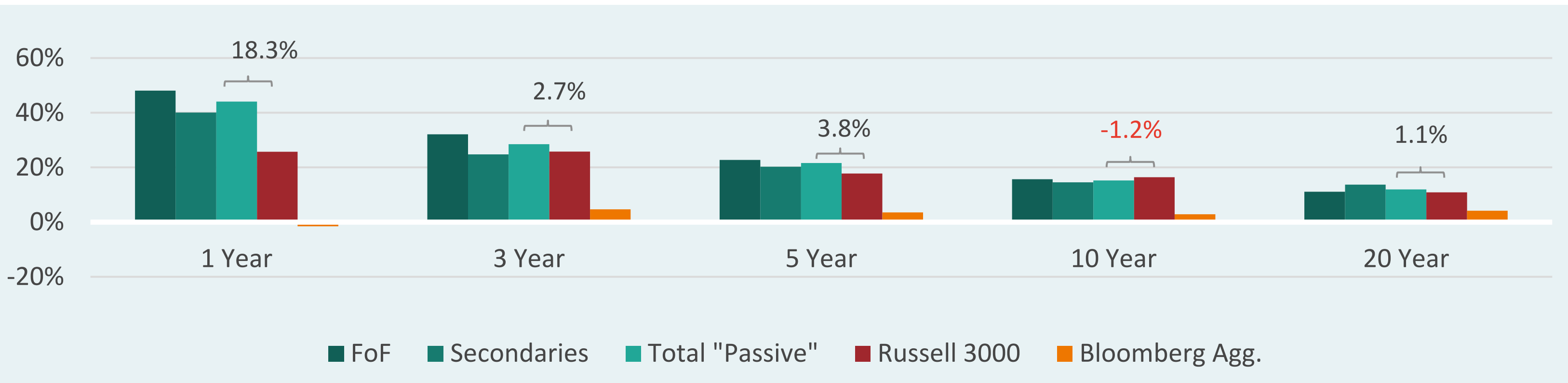
Private equity vs. traditional assets performance

DIRECT PRIVATE EQUITY FUND INVESTMENTS



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

"PASSIVE" STRATEGIES

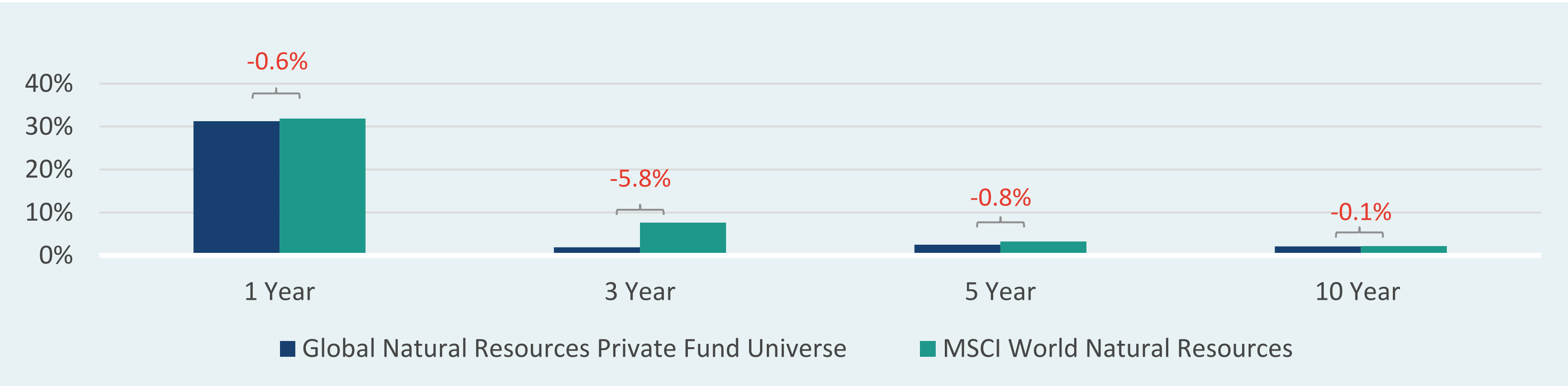


"Passive" strategies outperformed comparable public equities across all time periods, aside from the 10-year basis.

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.

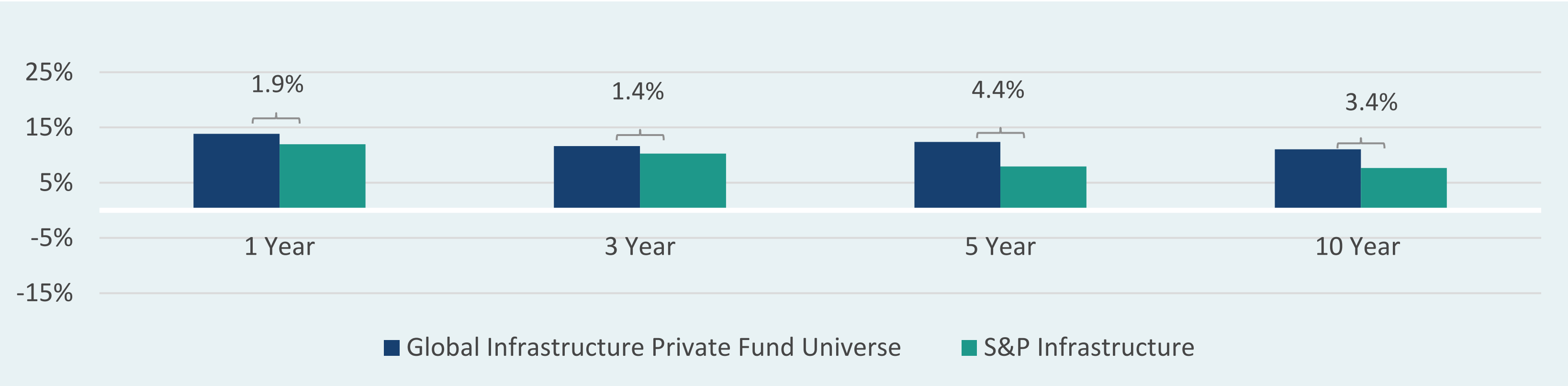
Private vs. liquid real assets performance

GLOBAL NATURAL RESOURCES FUNDS



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

GLOBAL INFRASTRUCTURE FUNDS

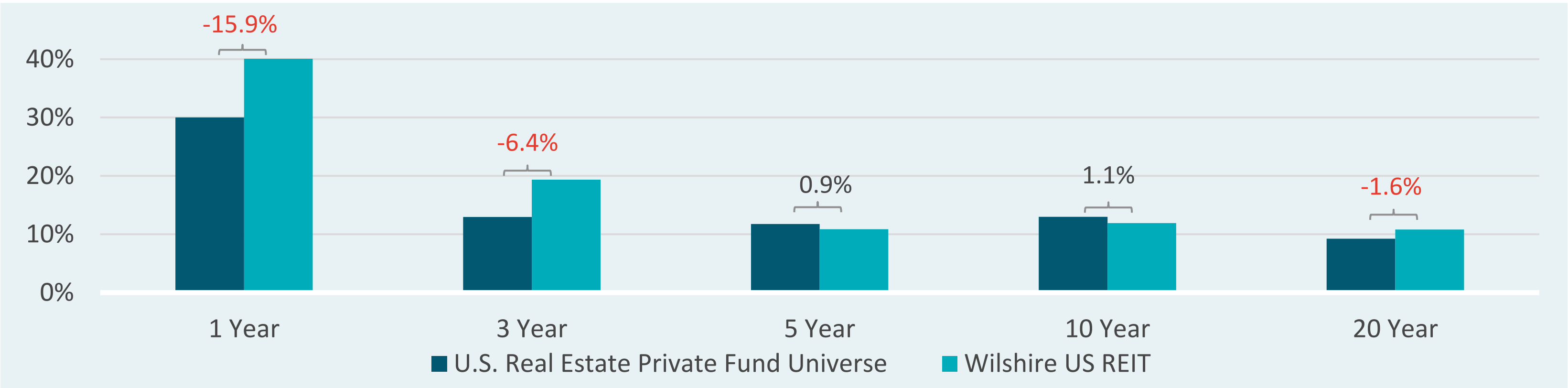


Infra. funds outperformed the S&P Infra. across all periods.

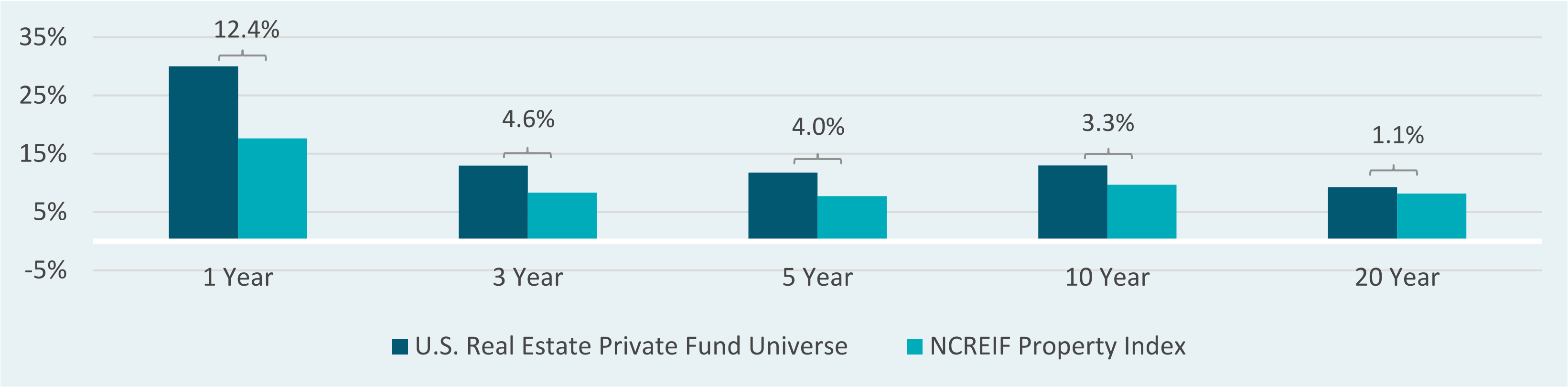
Sources: Refinitiv PME: Global Natural Resources (vintage 1999 and later, inception of MSCI World Natural Resources benchmark) and Global Infrastructure (vintage 2002 and later, inception of S&P Infrastructure benchmark) universes as of December 31, 2021. Public Market Equivalent returns resulted from 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

Imperial County Employees' Retirement System

Investment Performance Review

Period Ending: June 30, 2022

Verus

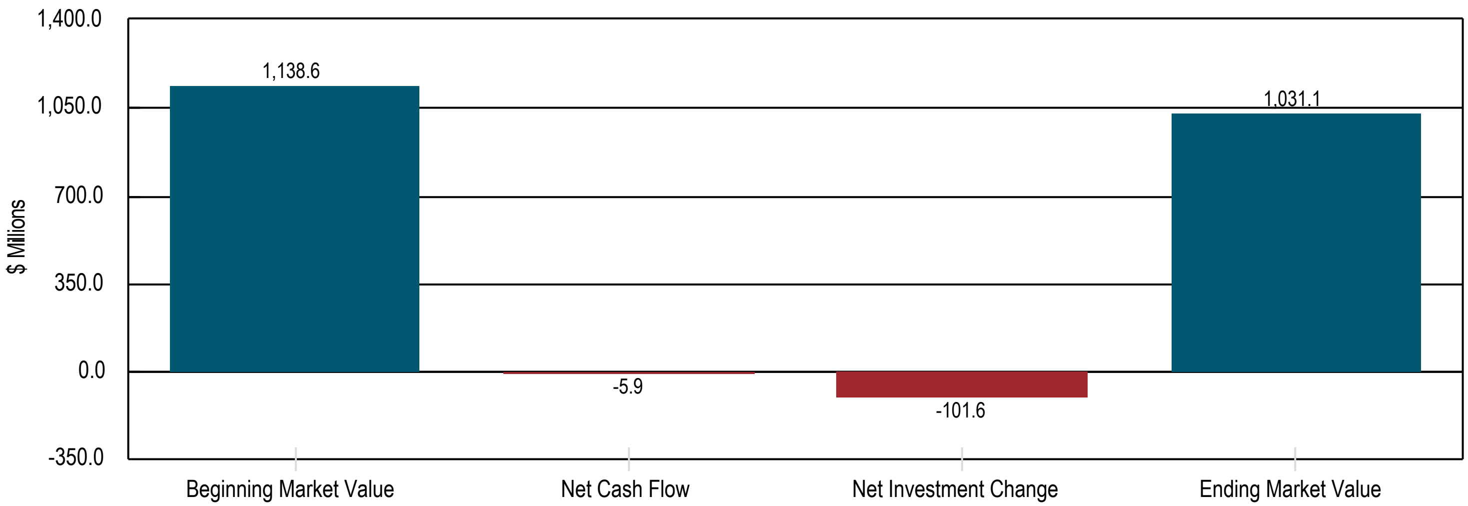
VERUSINVESTMENTS.COM

SEATTLE 206-622-3700
PITTSBURGH 412-784-6678
LOS ANGELES 310-297-1777
SAN FRANCISCO 415-362-3484

Portfolio Reconciliation

	Last Three Months	Fiscal Year-To-Date	One Year
Beginning Market Value	$1,138,599,317	$1,108,038,199	$1,108,038,199
Net Cash Flows	-$5,857,479	-$13,688,386	-$13,688,386
Net Investment Change	-$101,616,589	-$63,224,564	-$63,224,564
Ending Market Value	$1,031,125,249	$1,031,125,249	$1,031,125,249

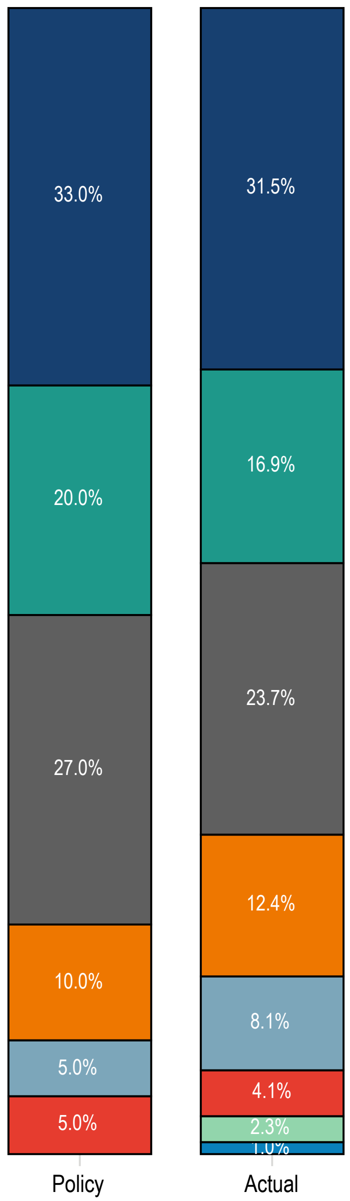
Change in Market Value
Last Three Months



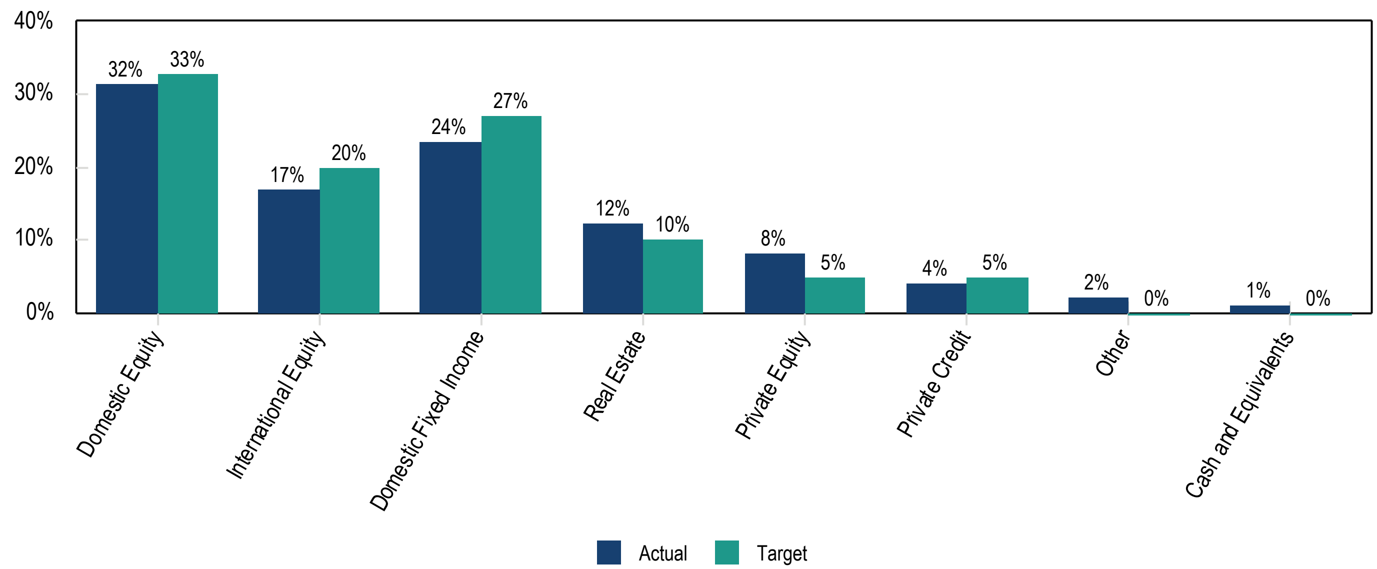
Contributions and withdrawals may include intra-account transfers between managers/funds. Fee transactions are excluded from Portfolio Reconciliation.

	Market Value	% of Portfolio	QTD	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Total Fund	**1,031,125,249**	**100.0**	**-9.1**	**-12.2**	**-6.6**	**-6.6**	**6.6**	**6.8**	**7.5**
Policy Index			*-9.4*	*-12.9*	*-8.1*	*-8.1*	*6.2*	*6.8*	*7.5*
InvMetrics Public DB Rank			*19*	*15*	*10*	*10*	*15*	*25*	*40*
Total Domestic Equity	**324,955,266**	**31.5**	**-16.7**	**-21.1**	**-13.9**	**-13.9**	**9.8**	**10.6**	**12.4**
Russell 3000 Index			*-16.7*	*-21.1*	*-13.9*	*-13.9*	*9.8*	*10.6*	*12.6*
Total International Equity	**174,698,859**	**16.9**	**-13.5**	**-19.1**	**-19.1**	**-19.1**	**0.8**	**2.0**	**4.8**
MSCI AC World ex USA Index			*-13.5*	*-18.2*	*-19.0*	*-19.0*	*1.8*	*3.0*	*5.3*
Total Fixed Income	**244,304,984**	**23.7**	**-6.0**	**-11.3**	**-10.5**	**-10.5**	**0.2**	**1.6**	**2.2**
Blmbg. U.S. Aggregate Index			*-4.7*	*-10.3*	*-10.3*	*-10.3*	*-0.9*	*0.9*	*1.5*
Total Real Estate	**127,679,497**	**12.4**	**4.4**	**11.5**	**24.1**	**24.1**	**11.4**	**9.5**	**10.0**
NCREIF Property Index			*3.2*	*8.7*	*21.5*	*21.5*	*10.2*	*8.9*	*9.7*
Total Private Equity	**83,978,635**	**8.1**	**0.0**	**0.5**	**24.2**	**24.2**	**28.2**	**24.0**	**18.8**
Private Equity Benchmark			*0.0*	*0.5*	*24.2*	*24.2*	*28.2*	*24.0*	*20.7*
Total Private Credit	**41,924,581**	**4.1**	**0.3**	**4.0**	**14.6**	**14.6**	**9.8**	**N/A**	**N/A**
Private Credit Benchmark			*0.3*	*4.0*	*14.7*	*14.7*	*10.9*	*N/A*	*N/A*
Total Opportunistic	**23,599,021**	**2.3**	**2.3**	**15.8**	**23.1**	**23.1**	**11.9**	**11.0**	**12.9**
Assumption Rate + 1%			*2.1*	*4.2*	*8.5*	*8.5*	*8.5*	*8.5*	*N/A*

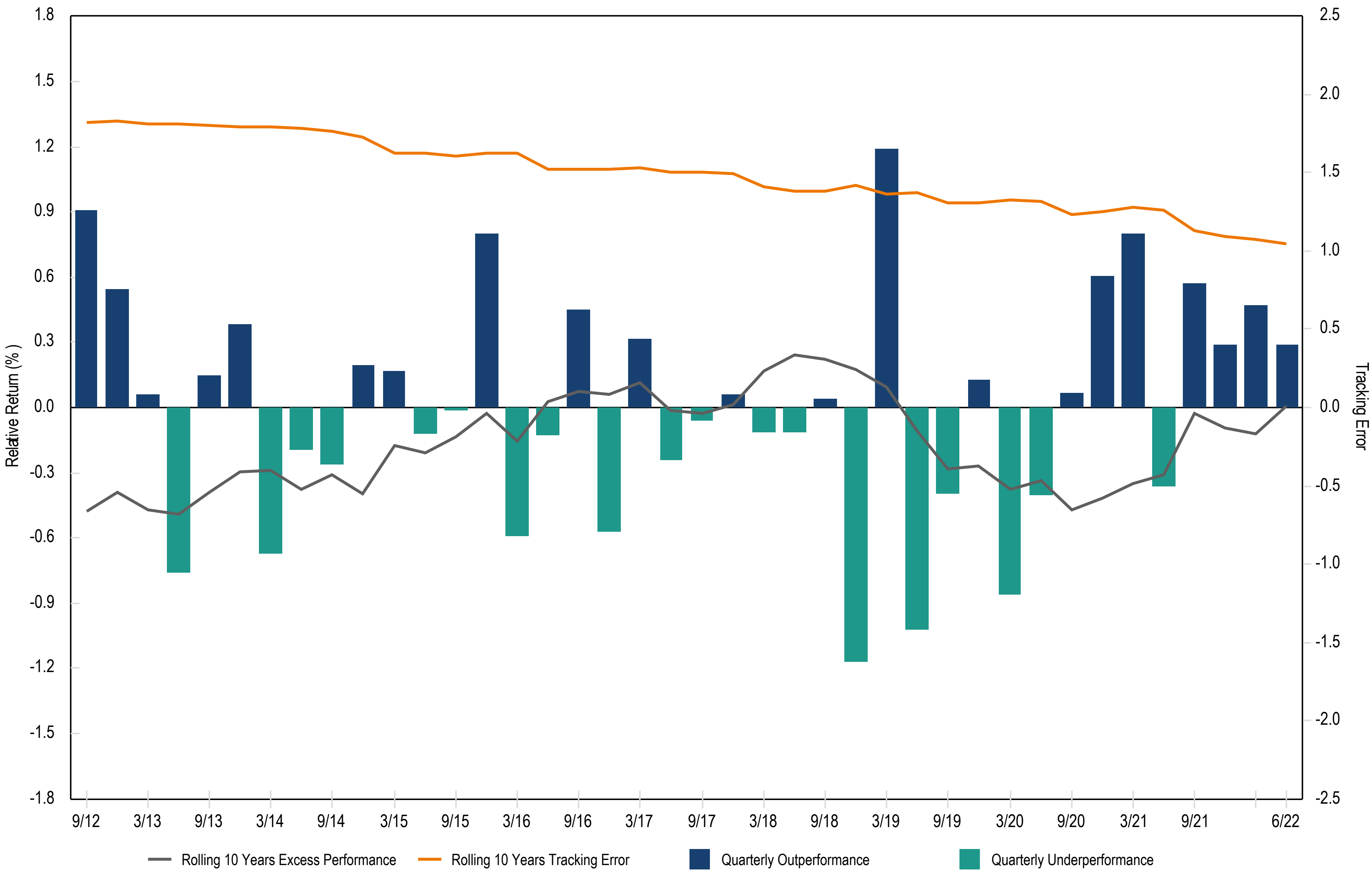
New Policy Index (as of 8/1/2020): 33% Russell 3000, 20% MSCI ACWI ex USA Gross, 29 % Bloomberg Aggregate, 10% NCREIF Property, 5% Private Equity Benchmark, 3% Private Credit Benchmark. Prior quarter Private Equity returns, and index data are used. All returns are Net of fees. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. As of 10/1/20 the SAA Target for equity changed to 33% Russell 3000 + 20% ACWI ex-US (see Exhibit B attached).



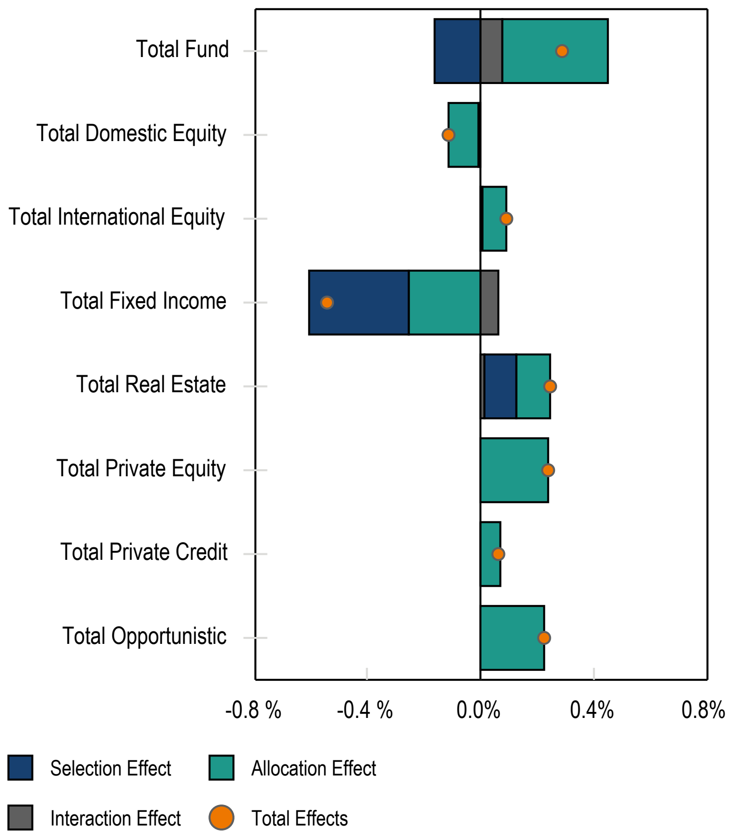
	Current Balance ($)	Current Allocation (%)	Policy Allocation (%)	Excess Allocation (%)	Policy Range (%)	Within IPS Range?
Domestic Equity	324,955,266	31.5	33.0	-1.5	23.0 - 43.0	Yes
International Equity	174,698,859	16.9	20.0	-3.1	10.0 - 30.0	Yes
Domestic Fixed Income	244,304,984	23.7	27.0	-3.3	17.0 - 40.0	Yes
Real Estate	127,679,497	12.4	10.0	2.4	5.0 - 15.0	Yes
Private Equity	83,978,635	8.1	5.0	3.1	0.0 - 10.0	Yes
Private Credit	41,924,581	4.1	5.0	-0.9	0.0 - 10.0	Yes
Other	23,599,021	2.3	0.0	2.3	0.0 - 10.0	Yes
Cash and Equivalents	9,984,407	1.0	0.0	1.0	0.0 - 0.0	No
Total	**1,031,125,249**	**100.0**	**100.0**	**0.0**		



Rolling Annualized Excess Performance and Tracking Error



Attribution Effects
Last Three Months



Performance Attribution

	Quarter	YTD
Wtd. Actual Return	-9.09	-12.17
Wtd. Index Return	-9.38	-12.88
Excess Return	**0.29**	**0.71**
Selection Effect	-0.17	-0.12
Allocation Effect	0.38	0.75
Interaction Effect	0.08	0.08

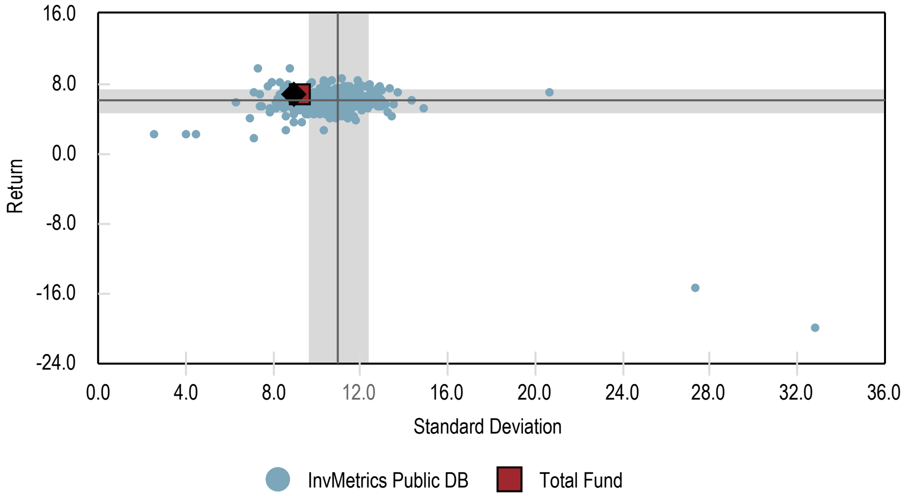
Attribution Summary
Last Three Months

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total Domestic Equity	-16.7	-16.7	0.0	0.0	-0.1	0.0	-0.1
Total International Equity	-13.5	-13.5	0.0	0.0	0.1	0.0	0.1
Total Fixed Income	-6.0	-4.7	-1.3	-0.3	-0.3	0.1	-0.5
Total Real Estate	4.4	3.2	1.2	0.1	0.1	0.0	0.2
Total Private Equity	0.0	0.0	0.0	0.0	0.2	0.0	0.2
Total Private Credit	0.3	0.3	0.0	0.0	0.1	0.0	0.1
Total Opportunistic	2.3	2.1	0.2	0.0	0.2	0.0	0.2
Total Fund	**-9.1**	**-9.4**	**0.3**	**-0.2**	**0.4**	**0.1**	**0.3**

Weighted returns shown in attribution analysis may differ from actual returns.

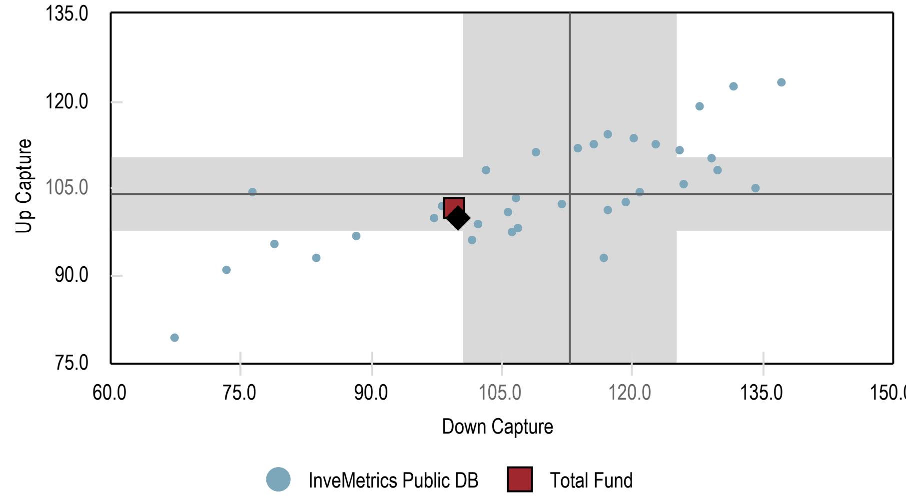
	Annualized Return	Annualized Excess Return	Annualized Standard Deviation	Annualized Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Information Ratio	Up Capture	Down Capture
Total Fund	6.77	5.90	9.26	-0.23	1.03	0.99	0.99	0.63	-0.02	102.55	104.75

Risk vs. Return



	Return	Standard Deviation
Total Fund	6.77	9.26
Policy Index	6.83	8.95
Median	6.15	11.00
Population	474	474

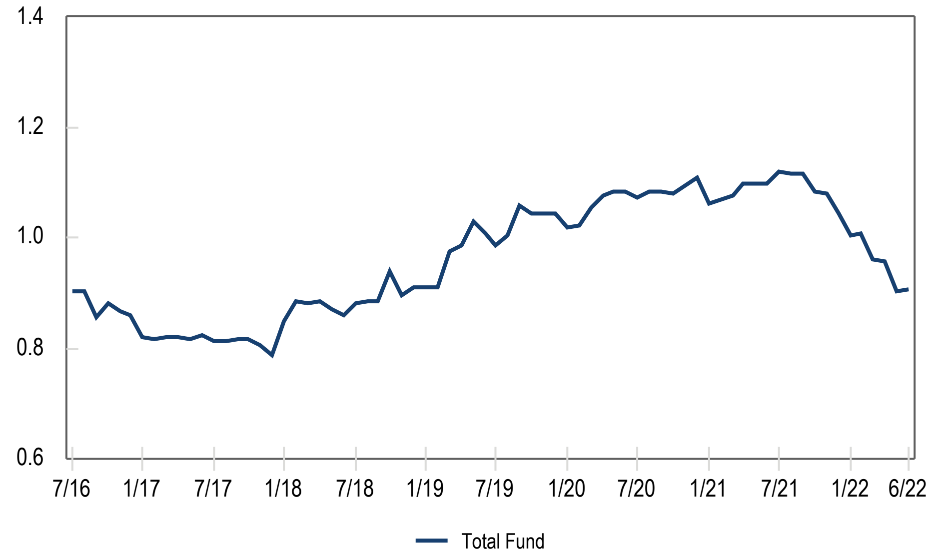
Up Markets vs. Down Markets



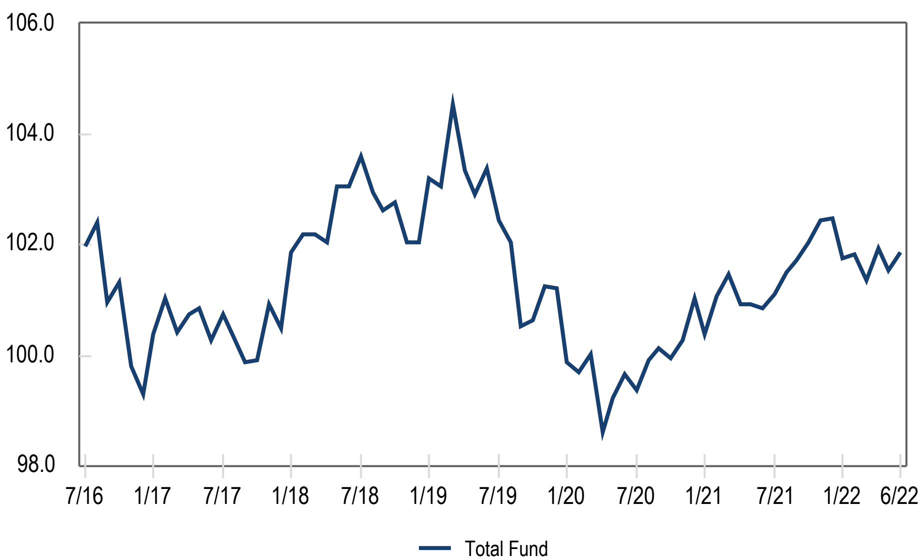
	Up Capture	Down Capture
Total Fund	101.88	99.57
Policy Index	100.00	100.00
Median	104.05	112.79
Population	34	34

Rolling Information Ratio

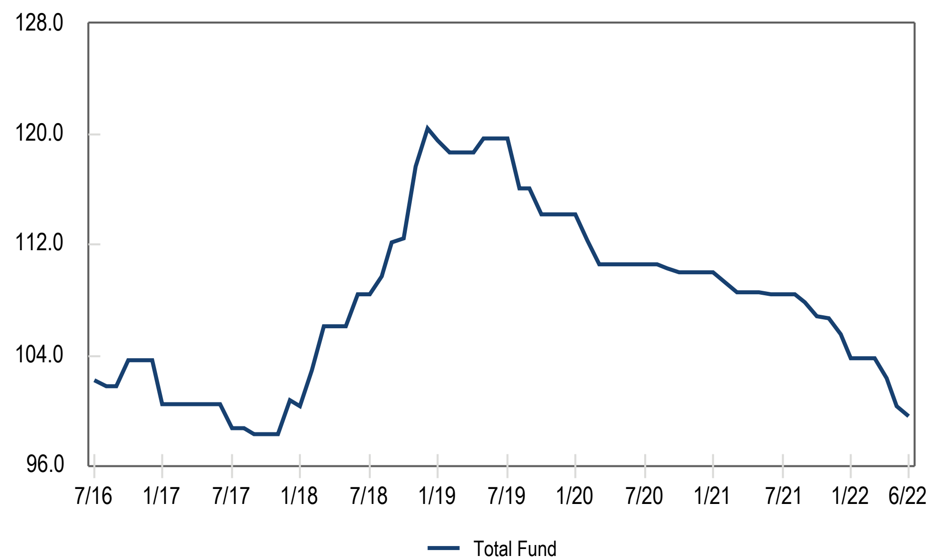
Rolling Tracking Error



Rolling Up Market Capture Ratio (%)



Rolling Down Market Capture Ratio (%)



	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017	Inception	Inception Date
Total Fund	**1,031,125,249**	**100.0**	**-9.1**	**-12.2**	**-6.6**	**-6.6**	**6.6**	**6.8**	**7.5**	**15.8**	**12.3**	**17.9**	**-4.1**	**16.0**	**8.6**	**Apr-89**
Policy Index			*-9.4*	*-12.9*	*-8.1*	*-8.1*	*6.2*	*6.8*	*7.5*	*14.4*	*13.2*	*18.0*	*-2.7*	*15.9*	*-*	
InvMetrics Public DB Rank			*19*	*15*	*10*	*10*	*15*	*25*	*40*	*21*	*63*	*75*	*40*	*27*	*15*	
Total Domestic Equity	**324,955,266**	**31.5**	**-16.7**	**-21.1**	**-13.9**	**-13.9**	**9.8**	**10.6**	**12.4**	**25.7**	**21.0**	**31.1**	**-5.2**	**21.2**		
Russell 3000 Index			*-16.7*	*-21.1*	*-13.9*	*-13.9*	*9.8*	*10.6*	*12.6*	*25.7*	*20.9*	*31.0*	*-5.2*	*21.1*		
BlackRock Russell 3000	324,955,266	31.5	-16.7	-21.1	-13.9	-13.9	9.8	10.6	-	25.7	21.0	31.1	-5.2	21.2	11.2	Dec-15
Russell 3000 Index			*-16.7*	*-21.1*	*-13.9*	*-13.9*	*9.8*	*10.6*	*-*	*25.7*	*20.9*	*31.0*	*-5.2*	*21.1*	*11.0*	
eV US All Cap Core Equity Rank			*61*	*50*	*47*	*47*	*36*	*31*	*-*	*55*	*42*	*35*	*45*	*40*	*12*	
Total International Equity	**174,698,859**	**16.9**	**-13.5**	**-19.1**	**-19.1**	**-19.1**	**0.8**	**2.0**	**4.8**	**10.1**	**8.1**	**20.7**	**-14.3**	**27.9**		
MSCI AC World ex USA Index			*-13.5*	*-18.2*	*-19.0*	*-19.0*	*1.8*	*3.0*	*5.3*	*8.3*	*11.1*	*22.1*	*-13.8*	*27.8*		
BlackRock International Equity	131,763,759	12.8	-14.3	-19.3	-17.4	-17.4	1.4	2.5	5.7	11.6	8.1	22.4	-13.5	25.4	6.2	Jul-03
MSCI EAFE (Net)			*-14.5*	*-19.6*	*-17.8*	*-17.8*	*1.1*	*2.2*	*5.4*	*11.3*	*7.8*	*22.0*	*-13.8*	*25.0*	*5.8*	
eV All EAFE Equity Rank			*53*	*44*	*38*	*38*	*53*	*42*	*56*	*49*	*52*	*49*	*29*	*62*	*61*	
DFA Emerging Markets Value	24,073,089	2.3	-10.7	-10.2	-12.9	-12.9	1.9	2.7	3.3	12.4	2.8	9.6	-11.9	33.8	3.5	Jan-07
MSCI Emerging Markets Value (Net)			*-10.8*	*-13.9*	*-18.6*	*-18.6*	*-1.0*	*1.2*	*1.5*	*4.0*	*5.5*	*12.0*	*-10.7*	*28.1*	*2.9*	
eV Emg Mkts All Cap Value Equity Rank			*47*	*27*	*17*	*17*	*46*	*56*	*81*	*17*	*83*	*91*	*33*	*38*	*79*	
Harding Loevner Emerging Markets	18,862,010	1.8	-11.2	-27.0	-34.3	-34.3	-5.4	-2.4	-	-4.3	12.4	24.0	-19.5	33.6	0.5	Aug-16
MSCI Emerging Markets Growth Index			*-12.0*	*-21.0*	*-31.0*	*-31.0*	*2.1*	*3.1*	*-*	*-8.2*	*31.6*	*25.4*	*-18.0*	*47.1*	*6.0*	
eV Emg Mkts All Cap Growth Equity Rank			*30*	*78*	*77*	*77*	*98*	*99*	*-*	*49*	*97*	*53*	*70*	*83*	*99*	
Total Fixed Income	**244,304,984**	**23.7**	**-6.0**	**-11.3**	**-10.5**	**-10.5**	**0.2**	**1.6**	**2.2**	**0.6**	**9.8**	**9.5**	**-0.8**	**4.3**		
Blmbg. U.S. Aggregate Index			*-4.7*	*-10.3*	*-10.3*	*-10.3*	*-0.9*	*0.9*	*1.5*	*-1.5*	*7.5*	*8.7*	*0.0*	*3.5*		
Ducenta Squared	99,736,470	9.7	-5.9	-11.8	-11.5	-11.5	-0.5	1.3	2.3	-0.6	9.1	9.9	-0.1	4.3	5.4	Mar-93
Blmbg. U.S. Aggregate Index			*-4.7*	*-10.3*	*-10.3*	*-10.3*	*-0.9*	*0.9*	*1.5*	*-1.5*	*7.5*	*8.7*	*0.0*	*3.5*	*4.6*	
eV US Core Plus Fixed Inc Rank			*59*	*71*	*64*	*64*	*48*	*44*	*43*	*52*	*35*	*42*	*26*	*66*	*34*	
MacKay Shields Core Plus Opportunities	98,434,982	9.5	-6.0	-12.0	-11.9	-11.9	-0.3	1.2	-	-0.5	9.9	9.7	-1.0	4.5	1.4	Mar-15
Blmbg. U.S. Aggregate Index			*-4.7*	*-10.3*	*-10.3*	*-10.3*	*-0.9*	*0.9*	*-*	*-1.5*	*7.5*	*8.7*	*0.0*	*3.5*	*1.2*	
eV US Core Plus Fixed Inc Rank			*61*	*76*	*74*	*74*	*36*	*55*	*-*	*49*	*21*	*51*	*76*	*52*	*78*	
BlackRock US TIPS	46,133,531	4.5	-6.1	-8.9	-5.2	-5.2	3.1	3.3	1.8	5.9	11.2	8.5	-1.2	3.2	3.8	Apr-07
Blmbg. U.S. TIPS			*-6.1*	*-8.9*	*-5.1*	*-5.1*	*3.0*	*3.2*	*1.7*	*6.0*	*11.0*	*8.4*	*-1.3*	*3.0*	*3.8*	
eV US TIPS / Inflation Fixed Inc Rank			*58*	*61*	*54*	*54*	*48*	*31*	*35*	*29*	*30*	*34*	*36*	*41*	*32*	

Tortoise is now Ducenta Squared. TSSP Adjacent funded 4/16/2020. Portfolio Advisors, Crescent Direct Lending, Lone Star, and Ascribe Opportunities Fund market value as of 3/31/2021. ASB Real Estate as of 6/30/2022.

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017	Inception	Inception Date
Total Real Estate	**127,679,497**	**12.4**	**4.4**	**11.5**	**24.1**	**24.1**	**11.4**	**9.5**	**10.0**	**18.4**	**2.1**	**5.7**	**7.5**	**5.8**		
NCREIF Property Index			*3.2*	*8.7*	*21.5*	*21.5*	*10.2*	*8.9*	*9.7*	*17.7*	*1.6*	*6.4*	*6.7*	*7.0*		
NCREIF ODCE Net			*4.5*	*12.0*	*28.3*	*28.3*	*11.7*	*9.6*	*10.2*	*21.0*	*0.3*	*4.4*	*7.4*	*6.7*		
ASB Real Estate	31,743,731	3.1	4.5	12.8	22.9	22.9	9.4	8.0	-	14.2	1.5	3.0	6.6	4.0	9.1	Jan-13
NCREIF Property Index			*3.2*	*8.7*	*21.5*	*21.5*	*10.2*	*8.9*	-	*17.7*	*1.6*	*6.4*	*6.7*	*7.0*	*9.6*	
NCREIF ODCE Net			*4.5*	*12.0*	*28.3*	*28.3*	*11.7*	*9.6*	-	*21.0*	*0.3*	*4.4*	*7.4*	*6.7*	*10.2*	
Clarion Lion	36,130,468	3.5	7.3	14.9	31.5	31.5	14.6	11.8	11.6	23.6	2.3	6.8	8.6	7.9	6.6	Jan-07
NCREIF Property Index			*3.2*	*8.7*	*21.5*	*21.5*	*10.2*	*8.9*	*9.7*	*17.7*	*1.6*	*6.4*	*6.7*	*7.0*	*7.5*	
NCREIF ODCE Net			*4.5*	*12.0*	*28.3*	*28.3*	*11.7*	*9.6*	*10.2*	*21.0*	*0.3*	*4.4*	*7.4*	*6.7*	*6.4*	
ARA American Strategic Value Realty	57,843,717	5.6	2.8	9.1	21.4	21.4	11.2	-	-	18.6	2.4	7.8	-	-	10.3	Jan-18
NCREIF Property Index +2%			*3.7*	*9.8*	*23.9*	*23.9*	*12.4*	-	-	*20.0*	*3.6*	*8.5*	*8.9*	-	*11.2*	
NCREIF ODCE Net			*4.5*	*12.0*	*28.3*	*28.3*	*11.7*	-	-	*21.0*	*0.3*	*4.4*	*7.4*	-	*9.8*	
1221 State St. Corp	1,961,582	0.2	0.0	0.0	0.0	0.0	2.6	1.5	2.4	0.0	0.0	7.9	0.0	0.0	1.4	Jun-08
Total Private Equity	**83,978,635**	**8.1**	**0.0**	**0.5**	**24.2**	**24.2**	**28.2**	**24.0**	**18.8**	**57.3**	**23.0**	**13.3**	**21.3**	**18.8**		
Harbourvest Buyout IX	7,980,151	0.8	-0.9	1.8	21.4	21.4	26.3	23.8	18.7	49.6	21.3	17.6	23.6	23.2	-	Jun-11
Harbourvest Credit Ops IX	1,084,104	0.1	9.4	15.5	32.9	32.9	16.9	16.3	14.9	32.1	0.3	8.0	14.4	17.5	-	Jun-11
Harbourvest International PE VI	2,165,043	0.2	0.0	-11.0	-7.3	-7.3	15.1	15.4	13.0	41.2	17.2	6.0	14.8	19.4	-	Mar-10
Harbourvest Venture IX	7,058,306	0.7	-7.4	-1.6	28.9	28.9	47.8	36.3	26.1	91.1	52.4	24.6	25.9	9.4	-	Jun-11
Harbourvest 2017 Global Fund	28,925,800	2.8	-0.5	7.6	31.8	31.8	30.4	-	-	61.6	18.8	8.8	20.9	-	25.3	Oct-17
Harbourvest 2018 Global Fund	20,318,844	2.0	3.0	3.0	29.4	29.4	22.3	-	-	37.0	16.0	14.3	-	-	19.6	Jan-19
Harbourvest 2019 Global Fund	16,446,387	1.6	10.7	11.9	43.9	43.9	-	-	-	49.6	34.6	-	-	-	36.9	Dec-19
Russell 3000 + 3%			*-16.1*	*-19.9*	*-11.3*	*-11.3*	-	-	-	*29.4*	*24.5*	-	-	-	*11.7*	
Total Private Credit	**41,924,581**	**4.1**	**0.3**	**4.0**	**14.6**	**14.6**	**9.8**	**-**	**-**	**16.1**	**4.8**	**9.4**	**6.7**	**-**		
Portfolio Advisors Credit Strategies Fund	12,087,617	1.2	0.0	3.1	16.9	16.9	12.3	-	-	26.8	3.9	8.2	6.6	-	10.1	Oct-17
Bloomberg High Yield +2% (Lagged)			*-4.4*	*-3.2*	*1.3*	*1.3*	*6.7*	-	-	*13.5*	*5.3*	*8.5*	*5.1*	-	*6.4*	
Crescent Direct Lending Levered Fund II	3,011,924	0.3	0.0	1.7	6.6	6.6	8.7	-	-	11.5	6.0	12.4	-	-	8.7	Mar-18
Bloomberg High Yield +2% (Lagged)			*-4.4*	*-3.2*	*1.3*	*1.3*	*6.7*	-	-	*13.5*	*5.3*	*8.5*	-	-	*6.5*	
Audax Direct Lending Fund A	4,986,525	0.5	2.6	8.7	23.2	23.2	16.5	-	-	23.1	10.1	16.3	-	-	19.2	Oct-18
Bloomberg High Yield +2% (Lagged)			*-4.4*	*-3.2*	*1.3*	*1.3*	*6.7*	-	-	*13.5*	*5.3*	*8.5*	-	-	*7.1*	
Ares Capital Europe IV	6,797,725	0.7	0.8	2.3	8.4	8.4	9.3	-	-	11.8	8.2	13.1	-	-	10.0	Aug-18
Bloomberg High Yield +2% (Lagged)			*-4.4*	*-3.2*	*1.3*	*1.3*	*6.7*	-	-	*13.5*	*5.3*	*8.5*	-	-	*6.9*	
Lone Star XI	3,370,122	0.3	0.0	1.4	131.9	131.9	19.7	-	-	538.0	-62.8	-	-	-	19.1	Jun-19
Bloomberg High Yield +2% (Lagged)			*-4.4*	*-3.2*	*1.3*	*1.3*	*6.7*	-	-	*13.5*	*5.3*	-	-	-	*6.9*	

Tortoise is now Ducenta Squared. TSSP Adjacent funded 4/16/2020. Portfolio Advisors, Crescent Direct Lending, Lone Star, and Ascribe Opportunities Fund market value as of 3/31/2021. ASB Real Estate as of 6/30/2022.

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017	Inception	Inception Date
Sixth Street Diversified Credit	8,754,700	0.8	0.0	11.4	8.0	8.0	-	-	-	-1.4	-	-	-	-	3.8	May-20
Bloomberg High Yield +2% (Lagged)			*-4.4*	*-3.2*	*1.3*	*1.3*	-	-	-	*13.5*	-	-	-	-	*5.4*	
Ascribe Opportunities Fund IV	2,915,969	0.3	0.0	1.7	44.2	44.2	-	-	-	-17.3	-	-	-	-	-192.8	Jul-20
Bloomberg High Yield +2% (Lagged)			*-4.4*	*-3.2*	*1.3*	*1.3*	-	-	-	*13.5*	-	-	-	-	*11.0*	
Total Opportunistic	**23,599,021**	**2.3**	**2.3**	**15.8**	**23.1**	**23.1**	**11.9**	**11.0**	**12.9**	**18.6**	**0.9**	**-10.7**	**32.0**	**5.3**		
KKR Mezzanine Partners	2,201,086	0.2	5.2	6.4	16.0	16.0	1.0	4.5	7.6	10.5	-15.2	-4.2	25.3	8.7	8.1	Jun-11
PIMCO BRAVO	13,621	0.0	-0.4	-0.6	-2.3	-2.3	-31.7	-19.0	-3.8	-21.7	-48.2	-49.1	77.8	-12.4	-1.6	May-11
TSSP Adjacent Opportunities Partners	21,384,314	2.1	2.6	18.3	30.8	30.8	-	-	-	26.1	-	-	-	-	24.6	Apr-20
Total Cash	**9,984,407**	**1.0**														
Cash Account	9,984,407	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	
90 Day U.S. Treasury Bill			*0.1*	*0.1*	*0.2*	*0.2*	*0.6*	*1.1*	*0.6*	*0.0*	*0.7*	*2.3*	*1.9*	*0.9*	*0.7*	

Tortoise is now Ducenta Squared. TSSP Adjacent funded 4/16/2020. Portfolio Advisors, Crescent Direct Lending, Lone Star, and Ascribe Opportunities Fund market value as of 3/31/2021. ASB Real Estate as of 6/30/2022.

	Annualized Return	Annualized Excess Return	Annualized Standard Deviation	Annualized Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Information Ratio	Up Capture	Down Capture
BlackRock Russell 3000	9.80	11.75	23.76	0.02	1.00	0.02	1.00	0.49	0.84	100.05	99.96
BlackRock International Equity	1.38	3.17	21.41	0.31	1.00	0.12	1.00	0.15	2.47	101.00	99.18
DFA Emerging Markets Value	1.91	5.30	27.11	3.49	1.07	5.05	0.97	0.19	0.71	114.05	95.88
Harding Loevner Emerging Markets	-5.39	-2.04	27.94	-6.78	1.06	8.09	0.92	-0.07	-0.82	92.45	125.68
Ducenta Squared	-0.52	-0.94	6.37	0.53	1.08	1.82	0.92	-0.15	0.25	122.65	108.99
MacKay Shields Core Plus Opportunities	-0.34	-0.73	6.81	0.75	1.10	2.83	0.83	-0.11	0.24	129.67	110.36
BlackRock US TIPS	3.06	2.57	5.67	0.00	1.01	0.13	1.00	0.45	0.18	100.42	100.11
ASB Real Estate	9.36	8.54	5.00	-0.85	1.01	2.62	0.73	1.65	-0.29	91.77	77.56
Clarion Lion	14.62	13.43	5.99	0.69	1.34	2.40	0.90	2.18	1.72	142.81	184.41
ARA American Strategic Value Realty	11.24	10.25	4.13	-0.30	0.93	1.21	0.92	2.39	-0.91	90.48	65.05
Portfolio Advisors Credit Strategies Fund	12.34	11.48	7.74	8.28	0.57	6.54	0.65	1.48	0.76	116.09	46.54
Crescent Direct Lending Levered Fund II	8.72	7.91	4.08	8.36	0.06	11.03	0.03	1.85	0.13	60.60	-15.78
Audax Direct Lending Fund A	16.50	15.13	6.31	14.53	0.28	9.67	0.23	2.37	0.89	125.07	0.98
Ares Capital Europe IV	9.28	8.45	4.71	9.60	-0.03	12.17	0.00	1.80	0.16	63.83	-18.19
Lone Star XI	19.72	52.94	99.89	58.20	0.70	99.66	0.01	0.53	0.47	474.28	115.76

	Annualized Return	Annualized Excess Return	Annualized Standard Deviation	Annualized Alpha	Annualized Beta	Tracking Error	R-Squared	Sharpe Ratio	Information Ratio	Up Capture	Down Capture
BlackRock Russell 3000	9.80	10.59	19.09	0.02	1.00	0.03	1.00	0.55	0.58	100.04	99.97
BlackRock International Equity	1.38	2.34	17.83	0.31	1.00	0.34	1.00	0.13	0.94	101.62	100.39
DFA Emerging Markets Value	1.91	3.49	20.64	3.27	1.07	4.72	0.95	0.17	0.69	108.85	95.24
Harding Loevner Emerging Markets	-5.39	-3.87	20.92	-6.92	1.04	8.66	0.83	-0.18	-0.81	91.13	119.74
Ducenta Squared	-0.52	-1.02	4.98	0.49	1.06	1.46	0.92	-0.21	0.30	114.51	105.49
MacKay Shields Core Plus Opportunities	-0.34	-0.82	5.48	0.76	1.12	2.21	0.85	-0.15	0.29	129.01	114.71
BlackRock US TIPS	3.06	2.52	4.98	0.00	1.01	0.11	1.00	0.50	0.23	100.60	100.51
ASB Real Estate	9.36	8.54	6.24	-0.44	0.97	2.64	0.82	1.36	-0.29	91.77	77.56
Clarion Lion	14.62	13.43	8.30	0.36	1.38	2.93	0.95	1.61	1.41	142.81	184.41

Vintage	Manager & Fund Name	Estimated 6/30/2022 Market Value[3]	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value for IRR	Distrib./ Paid-In (DPI)[1]	Tot. Value/ Paid-In (TVPI)[2]	Net IRR Since Inception[4]	IRR Date
2011	HarbourVest IX-Buyout	$7,980,151	$10,000,000	$8,525,000	85%	$1,475,000	$11,261,546	$7,980,151	*132.1%*	*225.7%*	*20.5%*	*3/31/22*
2011	HarbourVest IX-Credit	$1,084,104	$2,000,000	$1,600,000	80%	$400,000	$1,673,361	$1,084,104	*104.6%*	*172.3%*	*13.6%*	*3/31/22*
2008	HarbourVest Int'l VI[5]	$2,165,043	$3,712,930	$2,630,078	71%	$1,082,852	$3,711,933	$2,168,193	*141.1%*	*223.5%*	*16.0%*	*3/31/22*
2011	HarbourVest IX-Venture	$7,058,306	$4,000,000	$3,800,000	95%	$200,000	$6,776,438	$7,058,306	*178.3%*	*364.1%*	*26.1%*	*3/31/22*
2017	HarbourVest 2017 Global	$28,925,800	$30,000,000	$17,700,000	59%	$12,300,000	$8,822,822	$29,219,727	*49.8%*	*213.3%*	*30.3%*	*3/31/22*
2018	HarbourVest 2018 Global	$20,318,844	$20,000,000	$10,538,043	53%	$9,461,957	$2,442,005	$21,192,575	*23.2%*	*216.0%*	*38.2%*	*3/31/22*
2019	HarbourVest 2019 Global	$16,446,387	$20,000,000	$10,375,273	52%	$9,624,727	$0	$14,829,545	*0.0%*	*158.5%*	*63.0%*	*3/31/21*
	Total Illiquid Private Equity	**$83,978,635**	$89,712,930	$55,168,394	61%	$34,544,536	$34,688,105	$83,532,601	*151.4%*	*214.3%*		
	% of Portfolio (Market Value)	**7.4%**										

	Management Fee	Admin Fee	Interest Expense	Other Expense	Total Expense[6]
HarbourVest IX-Buyout	$22,419	$0	$0	$267	$22,686
HarbourVest IX-Credit	$4,479	$0	$2	$197	$4,678
HarbourVest Int'l VI	$5,019	$0	$92	$28	$5,138
HarbourVest IX-Venture	$8,986	$0	$20	$11	$9,017
HarbourVest 2017 Global	$66,000	$0	$491	$29,326	$95,817
HarbourVest 2018 Global	$43,719	$0	$10	$23,402	$67,131
HarbourVest 2019 Global	$43,162	$0	$6,711	$19,497	$69,370
	$193,784	$0	$7,326	$72,728	**$273,837**

[1](DPI) is equal to (capital returned / capital called)
[2](TVPI) is equal to (market value + capital returned) / capital called
[3]Last known market value + capital calls - distributions (preliminary MV's as of 6/30/2022)
[4]Net IRR is calculated on the cash flows of all the limited partners of the fund and is net of all fees. Each IRR figure is provided by its respective manager.
[5]HarbourVest International Private Equity Partners VI-Partnership Fund L.P. values are originally presented in euros and are calculated to dollars using XE
[6]All fees and expenses are for 1Q 2022

HarbourVest 2017 Global Fund first capital call issued 9/21/2017. Portfolio Advisors first capital call issued 10/5/2017. HarbourVest 2018 Global Fund first capital call issued 12/13/2018.

Vintage	Manager & Fund Name	Estimated 6/30 Market Value[3]	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value for IRR	Distrib./ Paid-In (DPI)[1]	Tot. Value/ Paid-In (TVPI)[2]	Net IRR Since Inception[4]	IRR Date
2013	Portfolio Advisors Credit Strategies Fund	$12,087,617	$11,250,000	$11,250,000	100%	$0	$2,029,294	$12,305,593	*18.0%*	*125.5%*	*7.8%*	*3/31/22*
2017	Crescent Direct Lending Levered Fund II	$3,011,924	$7,000,000	$5,707,507	82%	$1,292,493	$3,923,170	$3,279,004	*68.7%*	*121.5%*	*8.8%*	*3/31/22*
2017	Audax Direct Lending Fund A	$4,986,525	$7,000,000	$5,121,503	73%	$1,878,497	$1,720,894	*NA*	*33.6%*	*131.0%*	*NM*[6]	*NM*[6]
2018	Ares Capital Europe IV	$6,797,725	$8,000,000	$6,762,884	85%	$1,237,116	$1,625,378	*NA*	*24.0%*	*124.5%*	*NM*[7]	*NM*[7]
2019	Lone Star Fund XI	$3,370,122	$5,750,000	$1,544,010	27%	$4,205,990	$103,177	*NA*	*6.7%*	*225.0%*	*NA*	*NA*
2019	Ascribe Opportunities IV	$2,915,969	$6,000,000	$2,845,406	47%	$3,154,594	$26,909	*NA*	*NA*	*NA*	*NA*	*NA*
2020	Sixth Street Diversified Credit	$8,754,700	$50,000,000	$10,611,623	21%	$39,388,377	$2,714,385	*NA*	*25.6%*	*108.1%*	*NA*	*NA*
	Total Illiquid Private Credit	**$41,924,581**	$95,000,000	$43,842,933	46%	$51,157,067	$12,143,207	$15,584,597	*35.5%*	*63.2%*		
	% of Portfolio (Market Value)	**3.7%**										

	Management Fee	Accrued Carried Interest	Admin Fee	Interest Expense	Other Expense	Total Expense[5]
Portfolio Advisors CSF	$0	$0	$0	$0	$0	$0
Crescent Direct Lending II	$35,272	$6,247	$11,739	$0	$0	$53,258
Audax Direct Lending A	$30,034	$0	$0	$0	$56,906	$86,940
Ares Capital Europe IV	$24,507	$10,243	$0	$27,927	$6,636	$69,313
Ascribe Opportunities IV	$0	$0	$0	$0	$0	$0
Lone Star Fund XI	$0	$0	$0	$0	$0	$0
Sixth Street Diversified Credit	$0	$0	$0	$0	$0	$0
	$89,813	$16,490	$11,739	$27,927	$63,542	**$209,511**

[1](DPI) is equal to (capital returned / capital called)
[2](TVPI) is equal to (market value + capital returned) / capital called
[3]Last known market value + capital calls - distributions (preliminary MV's as of 6/30/2022)
[4]Net IRR is calculated on the cash flows of all the limited partners of the fund and is net of all fees. Each IRR figure is provided by its respective manager.
[5]All fees and expenses except Audax Direct Lending are for 1Q 2022
[6]The Fund issued its first capital call on October 26, 2018. As such it does not consider the IRR to be meaningful.
[7]Given the nature of the ACE IV strategy, Ares will begin reporting fund-level IRR metrics beginning in Q3 2019, one year after the fund's first investment.

Portfolio Advisors first capital call issued 10/5/2017. Crescent Direct Lending first called 3/13/2018. Ares IV first called 8/13/2018. Audax Direct Lending first called 10/26/2018.

Vintage	Manager & Fund Name	Estimated 6/30 Market Value[3]	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value for IRR	Distrib./ Paid-In (DPI)[1]	Tot. Value/ Paid-In (TVPI)[2]	Net IRR Since Inception[5]	IRR Date
2010	KKR Mezzanine[6]	$2,201,086	$10,000,000	$10,011,880	100%	-$11,880	$14,073,969	$2,189,206	*140.6%*	*162.6%*	*7.3%*	*3/31/22*
2011	PIMCO BRAVO [4]	$13,621	$10,000,000	$10,000,000	100%	$0	$18,212,617	$13,621	*182.1%*	*182.3%*	*-1.5%*	*3/31/22*
2020	TSSP Adjacent Opportunities Partners	$21,384,314	$40,000,000	$16,712,675	42%	$23,287,325	$3,919,665	*NA*	*23.5%*	*151.4%*	*NA*	*NA*
	Total Illiquid Opportunistic	**$23,599,021**	$60,000,000	$36,724,555	61%	$23,275,445	$36,206,251	$2,202,827	*6.0%*	*104.6%*		
	% of Portfolio (Market Value)	**2.1%**										

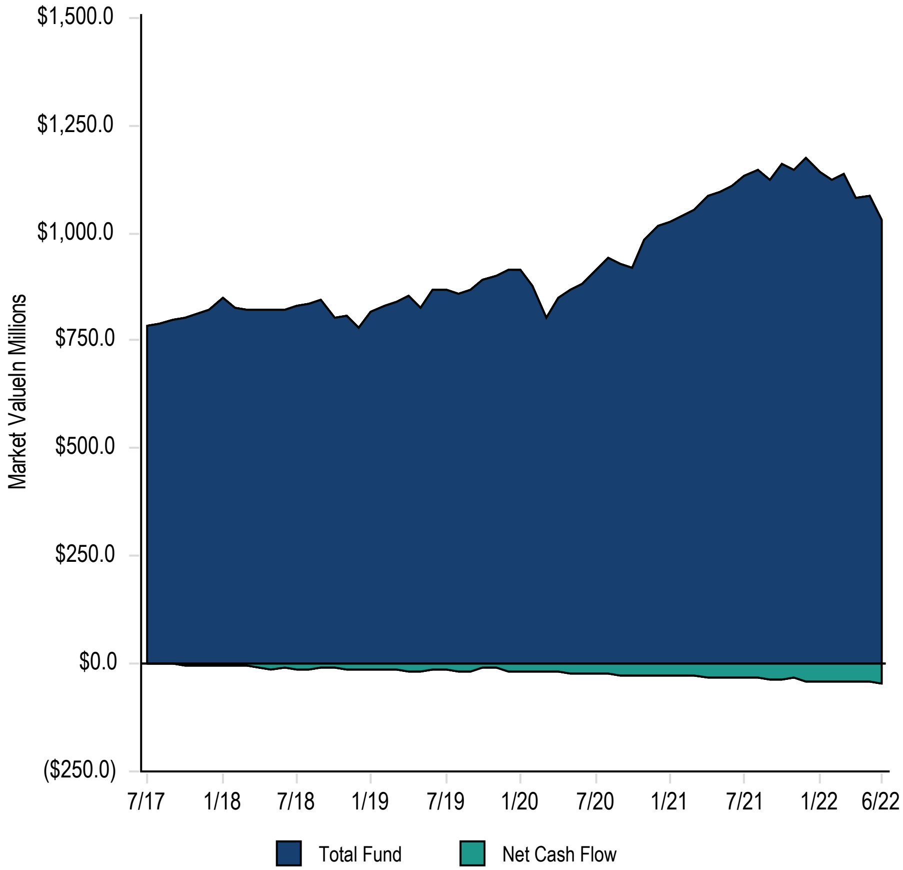
	Management Fee	Accrued Carried Interest	Admin Fee	Interest Expense	Other Expense	Total Expense[7]
KKR Mezzanine	$3,960	$0	$0	$0	$1,910	$5,870
PIMCO BRAVO	$0	$21	$0	$0	$13	$34
TSSP Adjacent Opportunities	$0	$0	$0	$0	$0	$0
	$3,960	$21	$0	$0	$1,923	**$5,904**

[1](DPI) is equal to (capital returned / capital called)
[2](TVPI) is equal to (market value + capital returned) / capital called
[3]Last known market value + capital calls - distributions (preliminary MV's as of 3/31/2022)
[4]Investment period ended, no further capital to be called.
[5]Net IRR is calculated on the cash flows of all the limited partners of the fund and is net of all fees. Each IRR figure is provided by its respective manager.
[6]KKR: Total capital called is $12,536,525 which includes recycled distributions. Unused capital commitment is $314,979 after including distribution proceeds available for reinvestment
[7]All fees and expenses are for 1Q 2022

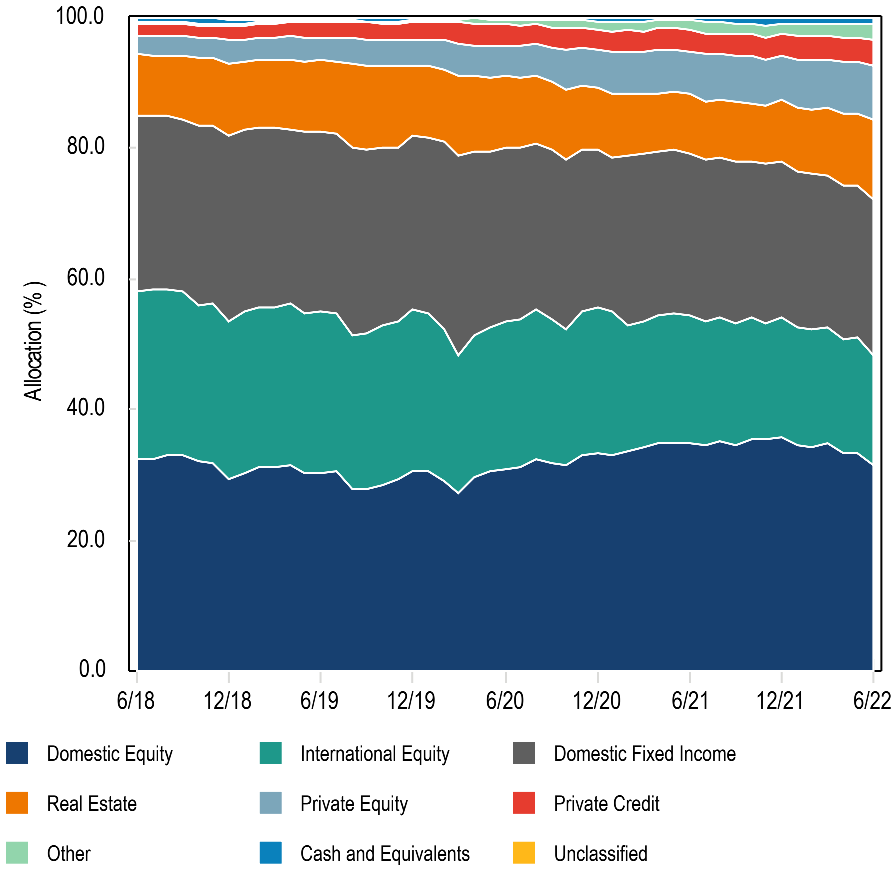
	Beginning Market Value	Contributions	Withdrawals	Net Cash Flows	Capital Appreciation	Income	Ending Market Value
BlackRock Russell 3000	$397,630,485	$0	-$6,260,491	-$6,260,491	-$66,414,728	$0	$324,955,266
BlackRock International Equity	$153,769,802	$0	$0	$0	-$22,006,043	$0	$131,763,759
DFA Emerging Markets Value	$26,964,137	$0	$0	$0	-$2,891,048	$0	$24,073,089
Harding Loevner Emerging Markets	$21,193,270	$0	$0	$0	-$2,331,260	$0	$18,862,010
Ducenta Squared	$105,910,613	$0	$0	$0	-$6,174,143	$0	$99,736,470
MacKay Shields Core Plus Opportunities	$104,697,423	$0	$0	$0	-$6,262,441	$0	$98,434,982
BlackRock US TIPS	$52,374,776	$0	-$3,089,000	-$3,089,000	-$3,152,244	$0	$46,133,531
ASB Real Estate	$30,370,031	$0	$0	$0	$1,373,700	$0	$31,743,731
Clarion Lion	$33,750,374	$192,887	-$298,076	-$105,189	$2,485,283	$0	$36,130,468
ARA American Strategic Value Realty	$53,080,142	$3,254,000	$0	$3,254,000	$1,509,575	$0	$57,843,717
1221 State St. Corp	$2,000,725	$19,448	-$58,600	-$39,152	$8	$0	$1,961,582
Harbourvest Buyout IX	$8,056,458	$0	$0	$0	-$76,307	$0	$7,980,151
Harbourvest Credit Ops IX	$1,067,380	$0	-$83,749	-$83,749	$100,473	$0	$1,084,104
Harbourvest International PE VI	$2,277,729	$0	-$112,686	-$112,686	$0	$0	$2,165,043
Harbourvest Venture IX	$7,622,043	$0	$0	$0	-$563,737	$0	$7,058,306
Harbourvest 2017 Global Fund	$29,371,267	$0	-$293,927	-$293,927	-$151,540	$0	$28,925,800
Harbourvest 2018 Global Fund	$20,571,902	$0	-$873,731	-$873,731	$620,673	$0	$20,318,844
Harbourvest 2019 Global Fund	$14,137,334	$800,000	$0	$800,000	$1,509,053	$0	$16,446,387
Portfolio Advisors Credit Strategies Fund	$12,305,593	$0	-$217,976	-$217,976	$0	$0	$12,087,617
Crescent Direct Lending Levered Fund II	$3,279,004	$0	-$267,080	-$267,080	$0	$0	$3,011,924
Audax Direct Lending Fund A	$4,688,247	$500,827	-$322,689	$178,138	$120,140	$0	$4,986,525
Ares Capital Europe IV	$6,997,401	$0	-$257,784	-$257,784	$58,108	$0	$6,797,725
Lone Star XI	$2,700,336	$669,786	$0	$669,786	$0	$0	$3,370,122
Sixth Street Diversified Credit	$9,710,270	$85,837	-$1,041,407	-$955,570	$0	$0	$8,754,700
Ascribe Opportunities Fund IV	$1,433,060	$1,482,909	$0	$1,482,909	$0	$0	$2,915,969
KKR Mezzanine Partners	$2,633,936	$11,880	-$580,456	-$568,576	$135,726	$0	$2,201,086
PIMCO BRAVO	$13,673	$0	$0	$0	-$52	$0	$13,621
TSSP Adjacent Opportunities Partners	$19,280,609	$1,609,491	$0	$1,609,491	$494,214	$0	$21,384,314
Cash Account	$10,711,298	$834,618	-$1,561,510	-$726,891	$0	$0	$9,984,407
Total Fund	**$1,138,599,317**	**$9,461,683**	**-$15,319,162**	**-$5,857,479**	**-$101,616,589**	**$0**	**$1,031,125,249**

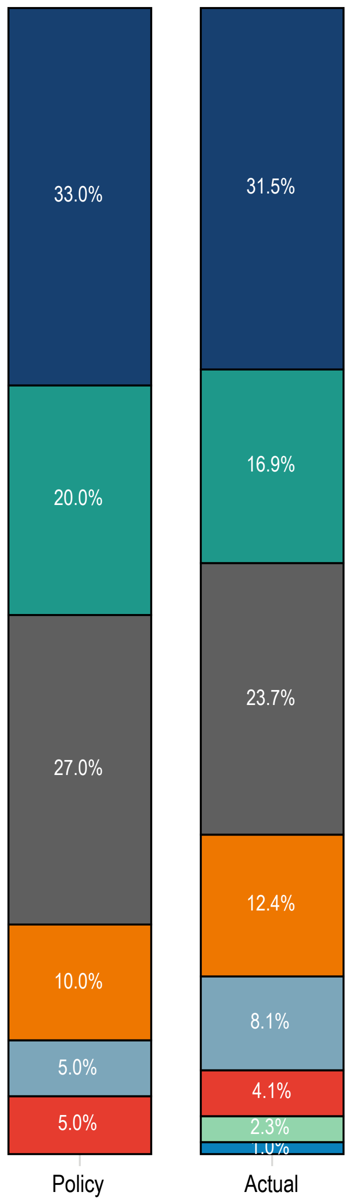
Harbourvest and KKR Mezzanine market values as of 3/31/2022 +/- 1Q22 and 2Q22 calls/distributions. Portfolio Advisors, Crescent Direct Lending, Audax Direct Lending, Ares Capital, Lone Star Fund, Sixth Street Diversified Credit, Ascribe, PIMCO BRAVO, and Sixth Street TAO Partners market values as of 03/31/2022 +/- 2Q22 calls/distributions. ASB Real Estate market value as of 6/30/2022.

Market Value History

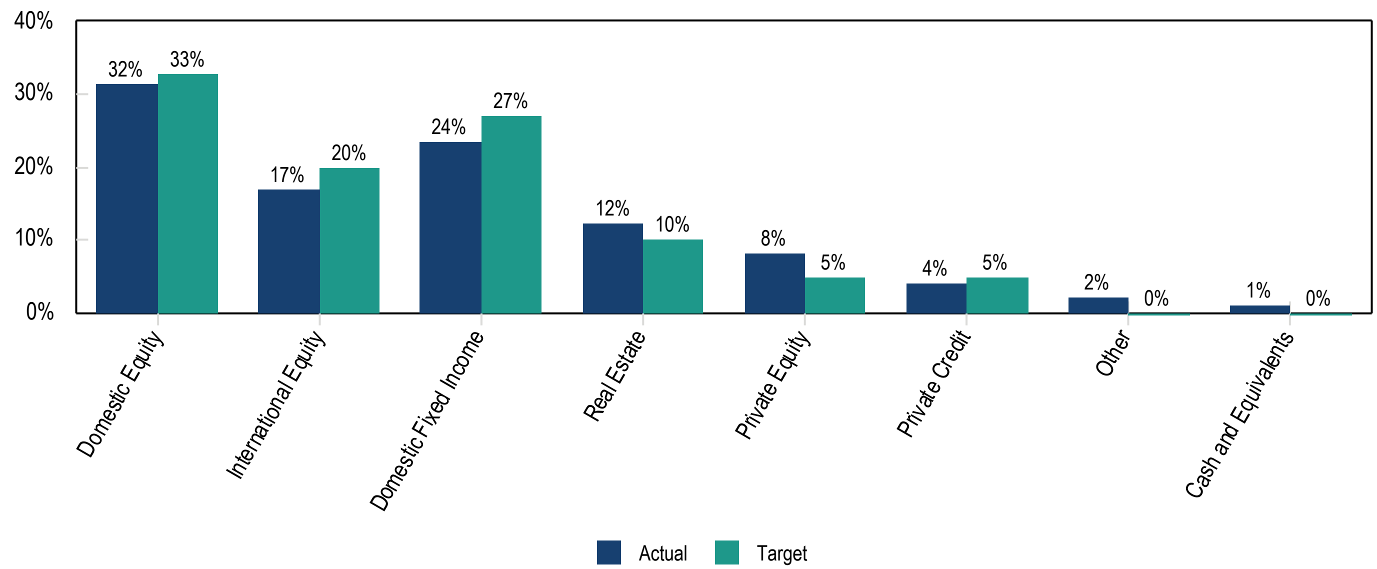


Asset Allocation History





	Current Balance ($)	Current Allocation (%)	Policy Allocation (%)	Excess Allocation (%)	Policy Range (%)	Within IPS Range?
Domestic Equity	324,955,266	31.5	33.0	-1.5	23.0 - 43.0	Yes
International Equity	174,698,859	16.9	20.0	-3.1	10.0 - 30.0	Yes
Domestic Fixed Income	244,304,984	23.7	27.0	-3.3	17.0 - 40.0	Yes
Real Estate	127,679,497	12.4	10.0	2.4	5.0 - 15.0	Yes
Private Equity	83,978,635	8.1	5.0	3.1	0.0 - 10.0	Yes
Private Credit	41,924,581	4.1	5.0	-0.9	0.0 - 10.0	Yes
Other	23,599,021	2.3	0.0	2.3	0.0 - 10.0	Yes
Cash and Equivalents	9,984,407	1.0	0.0	1.0	0.0 - 0.0	No
Total	**1,031,125,249**	**100.0**	**100.0**	**0.0**		

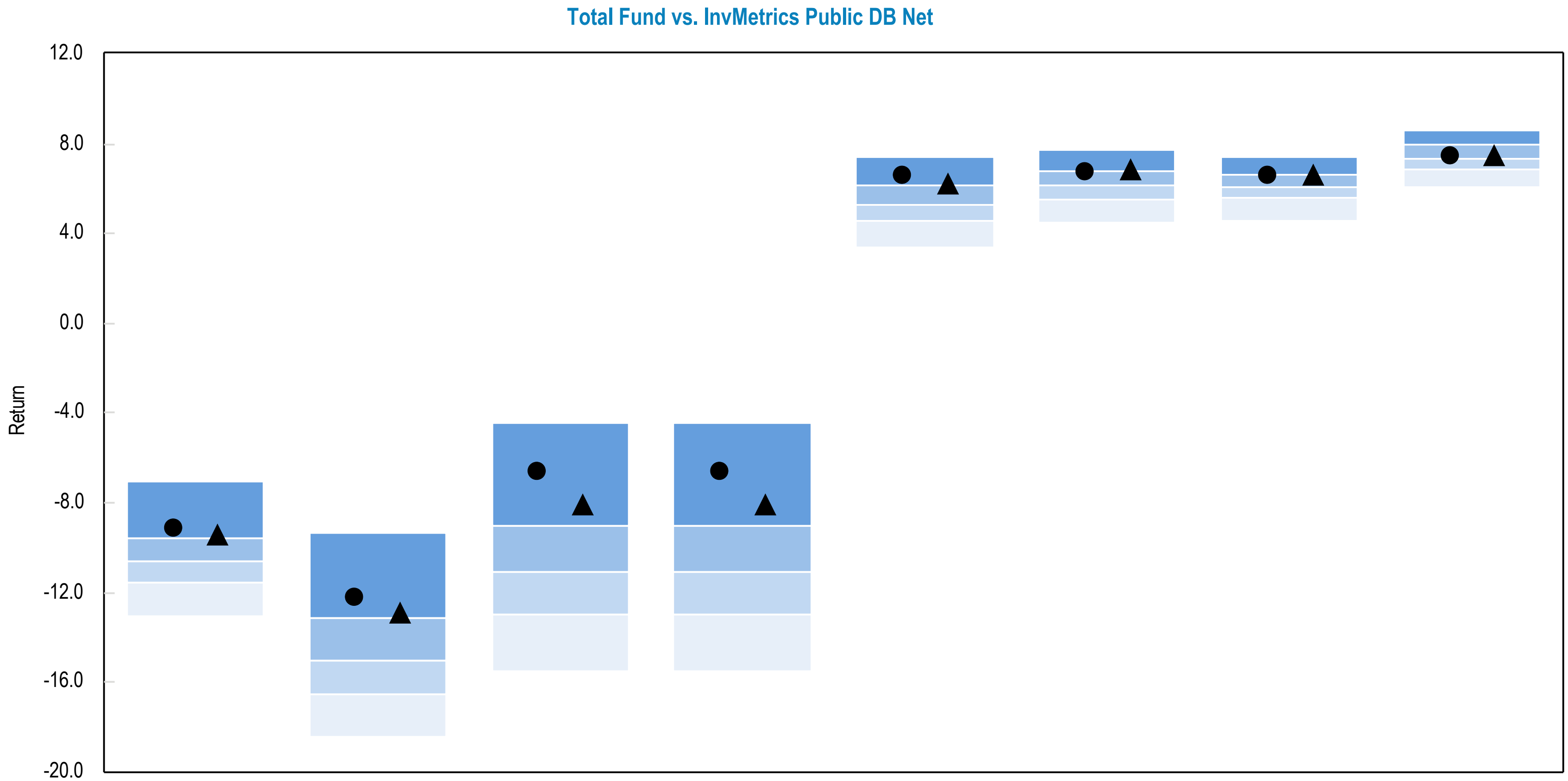


Account	Fee Schedule	Market Value	% of Portfolio	Estimated Annual Fee ($)	Estimated Annual Fee (%)
1221 State St. Corp		1,961,582	0.19	-	-
ARA American Strategic Value Realty	1.25 % of First $10 M 1.20 % of Next $15 M 1.10 % of Next $25 M 1.00 % Thereafter	57,843,717	5.61	658,437	1.14
Ares Capital Europe IV		6,797,725	0.66	-	-
ASB Real Estate	1.25 % of First $5 M 1.00 % of Next $10 M 0.75 % Thereafter	31,743,731	3.08	288,078	0.91
Ascribe Opportunities Fund IV		2,915,969	0.28	-	-
Audax Direct Lending Fund A		4,986,525	0.48	-	-
BlackRock International Equity	0.15 % of First $50 M 0.10 % of Next $50 M 0.00 % Thereafter	131,763,759	12.78	125,000	0.09
BlackRock Russell 3000	0.03 % of Assets	324,955,266	31.51	97,487	0.03
BlackRock US TIPS	0.07 % of Assets	46,133,531	4.47	32,293	0.07
Cash Account		9,984,407	0.97	-	-
Clarion Lion	1.25 % of First $10 M 1.00 % of Next $15 M 0.85 % Thereafter	36,130,468	3.50	369,609	1.02
Crescent Direct Lending Levered Fund II		3,011,924	0.29	-	-
DFA Emerging Markets Value	0.41 % of Assets	24,073,089	2.33	98,700	0.41
Ducenta Squared	0.29 % of First $100 M 0.25 % of Next $100 M 0.00 % Thereafter	99,736,470	9.67	284,249	0.28
Harbourvest 2017 Global Fund	Minimum Fee: $262,500	28,925,800	2.81	262,500	0.91
Harbourvest 2018 Global Fund	Minimum Fee: $138,000	20,318,844	1.97	138,000	0.68
Harbourvest 2019 Global Fund	0.45 % of Assets	16,446,387	1.59	74,009	0.45
Harbourvest Buyout IX	Minimum Fee: $100,000	7,980,151	0.77	100,000	1.25
Harbourvest Credit Ops IX	Minimum Fee: $20,000	1,084,104	0.11	20,000	1.84
Harbourvest International PE VI	Minimum Fee: $35,000	2,165,043	0.21	35,000	1.62
Harbourvest Venture IX	Minimum Fee: $40,000	7,058,306	0.68	40,000	0.57
Harding Loevner Emerging Markets	1.05 % of Assets	18,862,010	1.83	198,051	1.05
KKR Mezzanine Partners	Minimum Fee: $150,000	2,201,086	0.21	150,000	6.81
Lone Star XI		3,370,122	0.33	-	-
MacKay Shields Core Plus Opportunities	0.35 % of Assets	98,434,982	9.55	344,522	0.35
PIMCO BRAVO	1.90 % of Assets	13,621	0.00	259	1.90

**HarbourVest, KKR and PIMCO BRAVO fees are estimated gross management fees only and do not include incentive allocations or offsetting cash flows received by the fund.*
**HarbourVest International Private Equity VI fees are based on committed Euros, actual US Dollar amount will fluctuate based on exchange rates.*
**Verus advisory fee shown for disclosure purposes only and is not included in total investment management fee calculations.*
**Portfolio Advisors fee is 0.20% on committed capital and 1.00% on invested capital.*

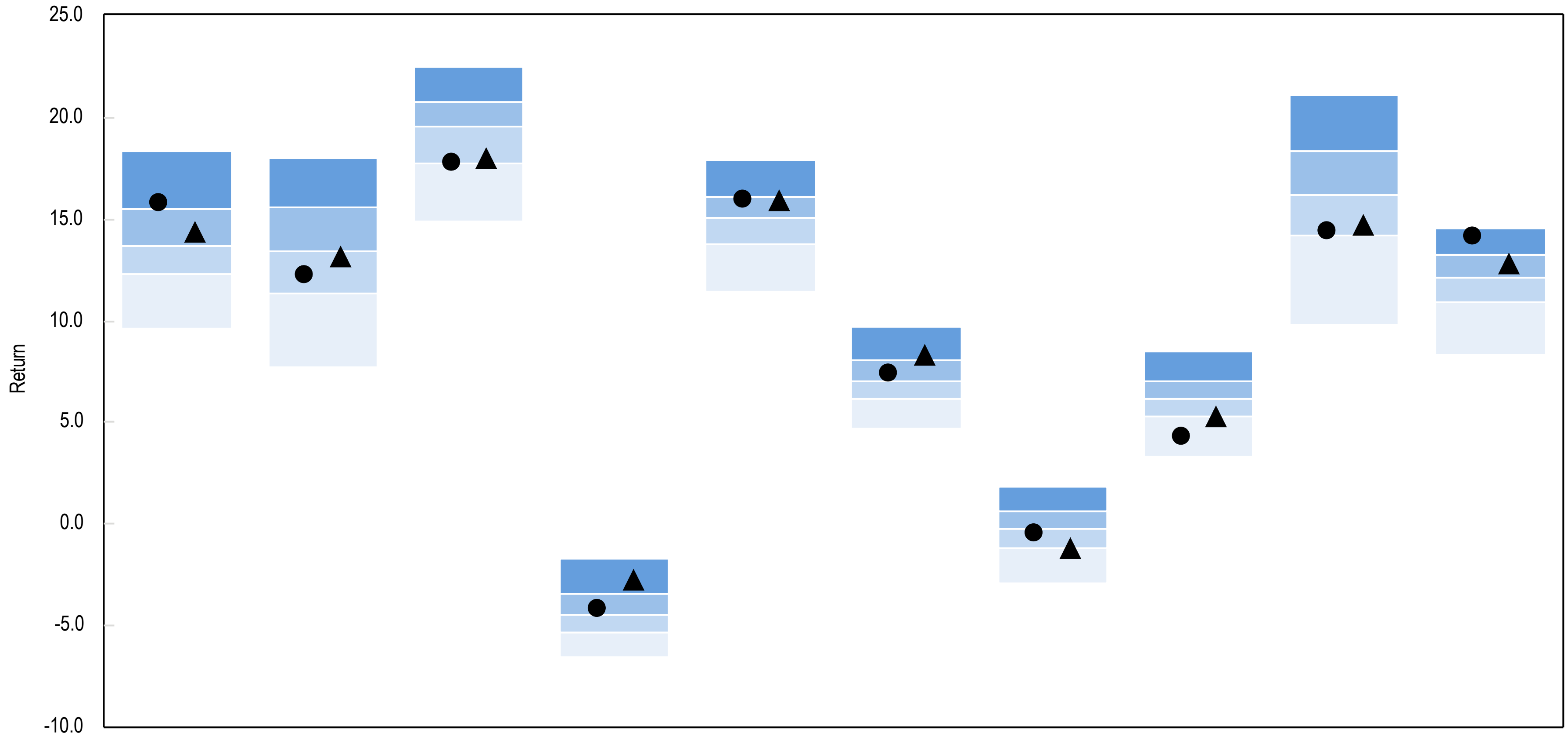
Account	Fee Schedule	Market Value	% of Portfolio	Estimated Annual Fee ($)	Estimated Annual Fee (%)
Portfolio Advisors Credit Strategies Fund	Minimum Fee: $180,000	12,087,617	1.17	180,000	1.49
Sixth Street Diversified Credit		8,754,700	0.85	-	-
TSSP Adjacent Opportunities Partners		21,384,314	2.07	-	-
Investment Management Fee		**1,031,125,249**	**100.00**	**3,496,194**	**0.34**

**HarbourVest, KKR and PIMCO BRAVO fees are estimated gross management fees only and do not include incentive allocations or offsetting cash flows received by the fund.*
**HarbourVest International Private Equity VI fees are based on committed Euros, actual US Dollar amount will fluctuate based on exchange rates.*
**Verus advisory fee shown for disclosure purposes only and is not included in total investment management fee calculations.*
**Portfolio Advisors fee is 0.20% on committed capital and 1.00% on invested capital.*

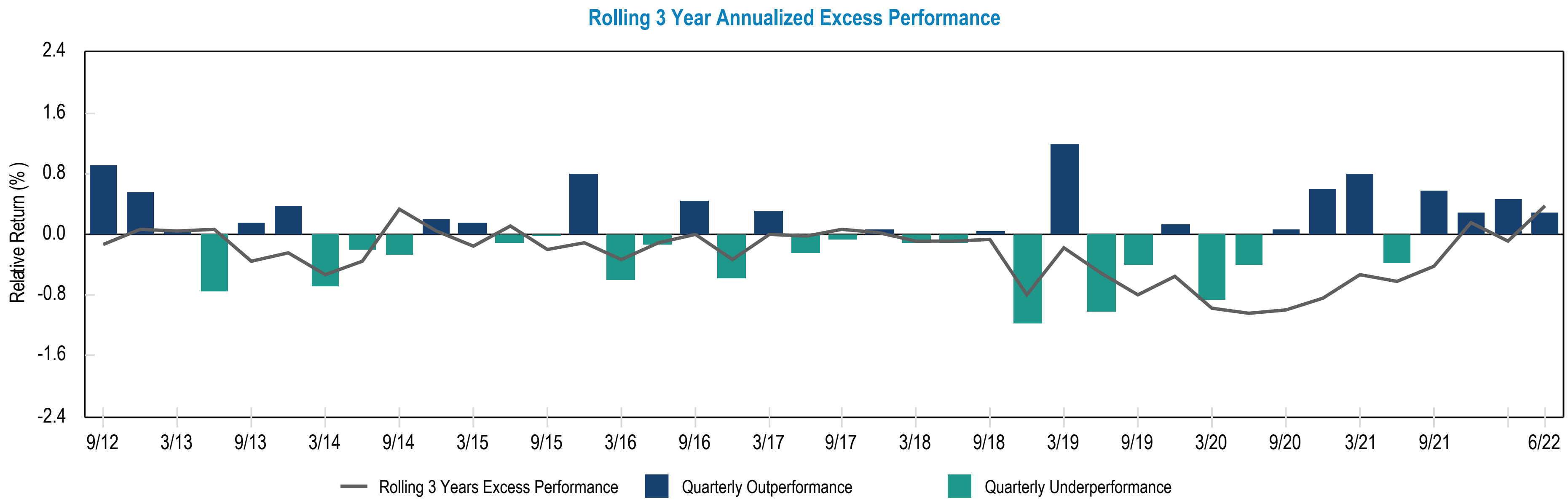


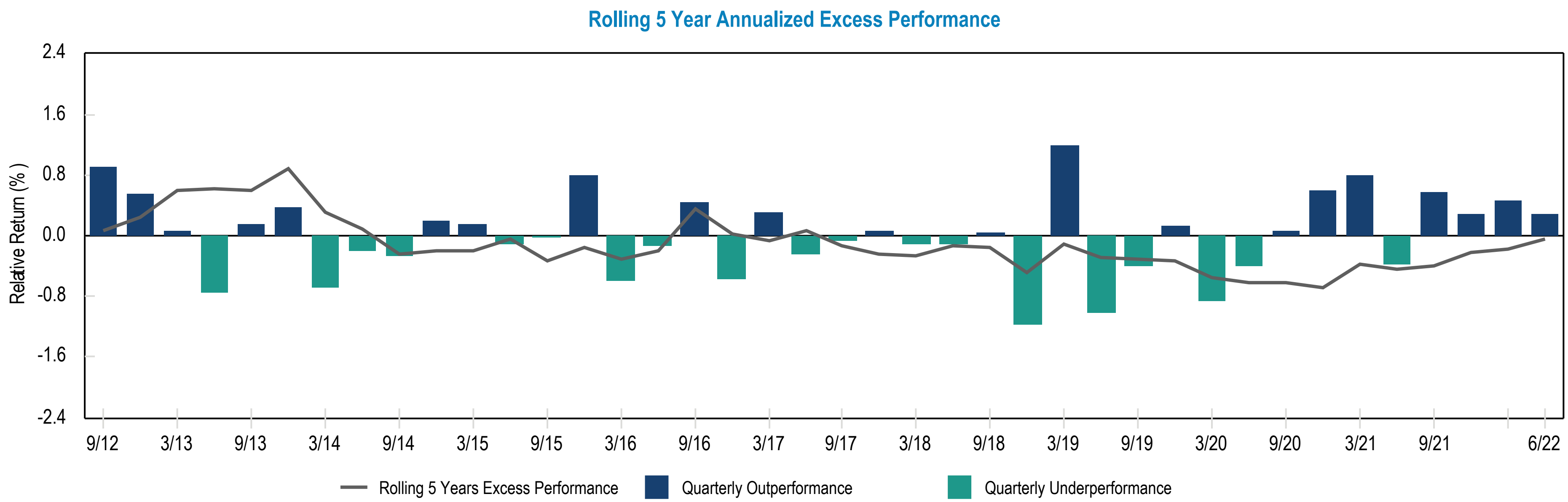
	Quarter	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
● Total Fund	-9.09 (19)	-12.17 (15)	-6.56 (10)	-6.56 (10)	6.61 (15)	6.77 (25)	6.59 (25)	7.52 (40)
▲ Policy Index	-9.38 (23)	-12.88 (22)	-8.09 (18)	-8.09 (18)	6.23 (23)	6.83 (24)	6.63 (23)	7.52 (41)
5th Percentile	-7.06	-9.37	-4.44	-4.44	7.40	7.77	7.40	8.63
1st Quartile	-9.54	-13.16	-9.00	-9.00	6.12	6.77	6.59	7.94
Median	-10.64	-15.02	-11.11	-11.11	5.32	6.15	6.04	7.36
3rd Quartile	-11.58	-16.50	-12.94	-12.94	4.57	5.51	5.59	6.84
95th Percentile	-13.02	-18.41	-15.48	-15.48	3.37	4.53	4.60	6.09
Population	507	506	503	503	490	474	446	398

Total Fund vs. InvMetrics Public DB Net



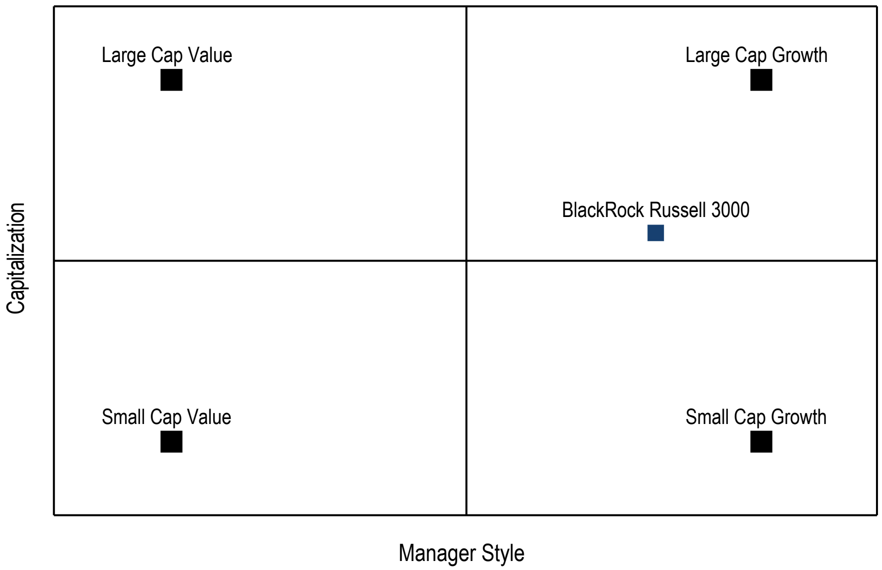
	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
● Total Fund	15.84 (21)	12.33 (63)	17.85 (75)	-4.12 (40)	16.02 (27)	7.45 (41)	-0.41 (57)	4.37 (88)	14.48 (74)	14.23 (8)
▲ Policy Index	14.38 (38)	13.15 (54)	18.03 (73)	-2.73 (13)	15.93 (29)	8.36 (20)	-1.22 (77)	5.33 (74)	14.71 (71)	12.82 (35)
5th Percentile	18.37	17.99	22.53	-1.73	17.89	9.68	1.80	8.45	21.12	14.57
1st Quartile	15.48	15.62	20.80	-3.42	16.08	8.06	0.64	7.05	18.31	13.26
Median	13.65	13.42	19.54	-4.45	15.06	7.07	-0.22	6.16	16.21	12.14
3rd Quartile	12.31	11.37	17.78	-5.30	13.75	6.18	-1.16	5.31	14.21	10.92
95th Percentile	9.63	7.71	14.90	-6.55	11.40	4.69	-2.94	3.31	9.79	8.34
Population	938	1,000	919	880	883	873	810	777	747	733


Rolling 3 Year Annualized Excess Performance
2.4
1.6
0.8
0.0
-0.8
-1.6
-2.4
Relative Return (%)
9/12
3/13
9/13
3/14
9/14
3/15
9/15
3/16
9/16
3/17
9/17
3/18
9/18
3/19
9/19
3/20
9/20
3/21
9/21
6/22
Rolling 3 Years Excess Performance
Quarterly Outperformance
Quarterly Underperformance


Rolling 5 Year Annualized Excess Performance
2.4
1.6
0.8
0.0
-0.8
-1.6
-2.4
Relative Return (%)
9/12
3/13
9/13
3/14
9/14
3/15
9/15
3/16
9/16
3/17
9/17
3/18
9/18
3/19
9/19
3/20
9/20
3/21
9/21
6/22
Rolling 5 Years Excess Performance
Quarterly Outperformance
Quarterly Underperformance

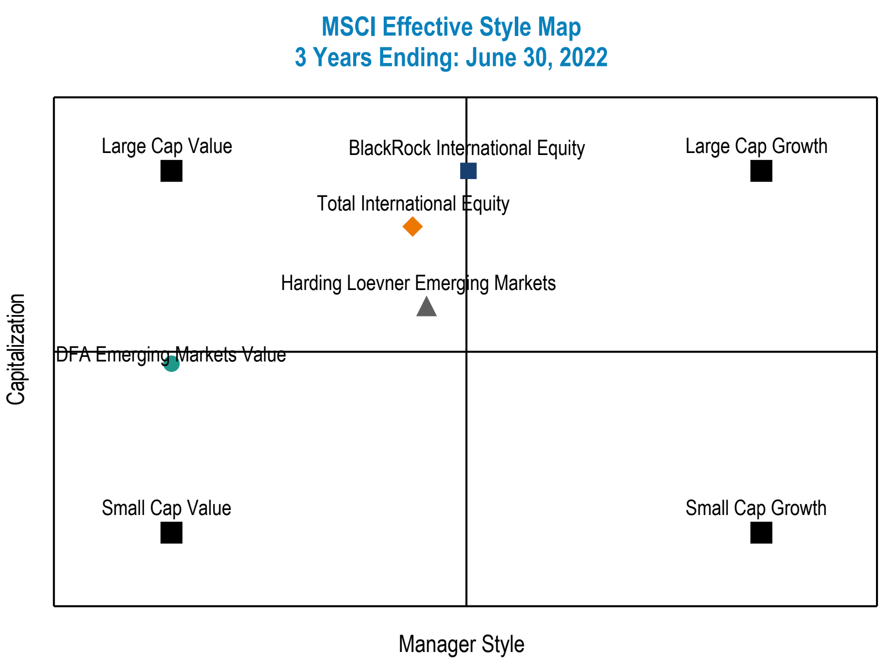
	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017
Total Domestic Equity	**324,955,266**	**100.0**	**-16.7**	**-21.1**	**-13.9**	**-13.9**	**9.8**	**10.6**	**12.4**	**25.7**	**21.0**	**31.1**	**-5.2**	**21.2**
Russell 3000 Index			*-16.7*	*-21.1*	*-13.9*	*-13.9*	*9.8*	*10.6*	*12.6*	*25.7*	*20.9*	*31.0*	*-5.2*	*21.1*
BlackRock Russell 3000	324,955,266	100.0	-16.7	-21.1	-13.9	-13.9	9.8	10.6	-	25.7	21.0	31.1	-5.2	21.2
Russell 3000 Index			*-16.7*	*-21.1*	*-13.9*	*-13.9*	*9.8*	*10.6*	*-*	*25.7*	*20.9*	*31.0*	*-5.2*	*21.1*
eV US All Cap Core Equity Rank			*61*	*50*	*47*	*47*	*36*	*31*	*-*	*55*	*42*	*35*	*45*	*40*

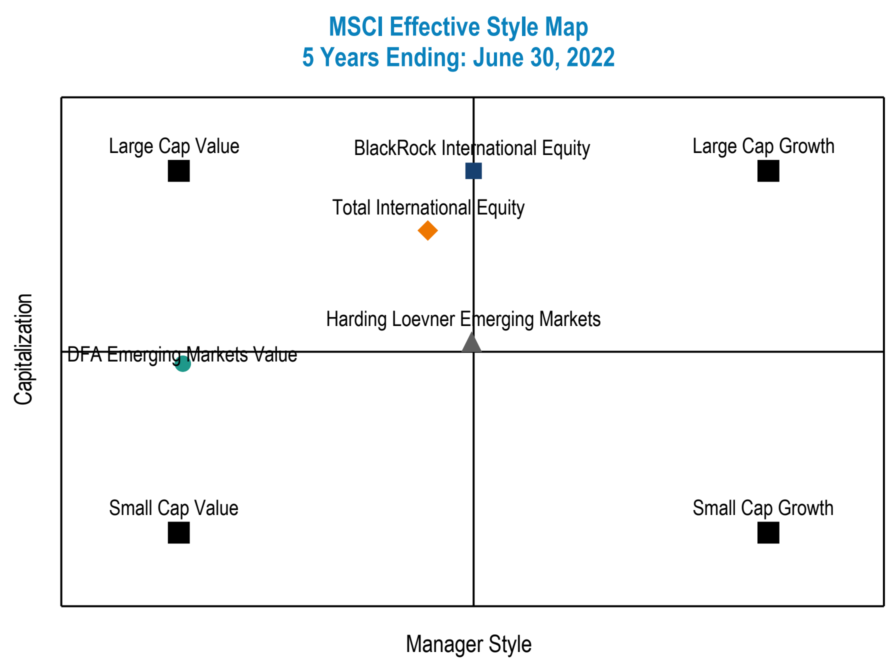
U.S. Effective Style Map
3 Years Ending: June 30, 2022

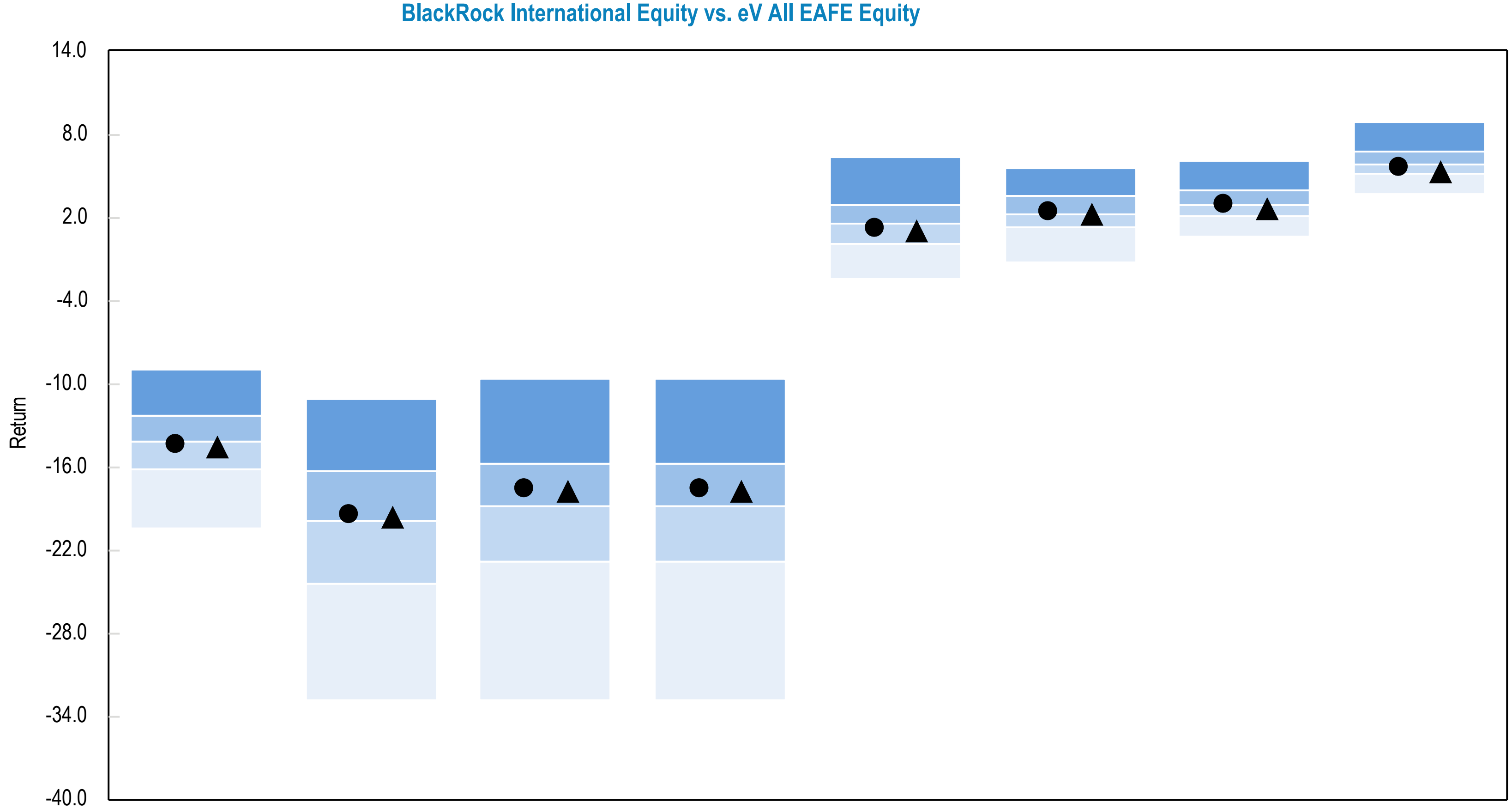


U.S Effective Style Map
5 Years Ending: March 31, 2022

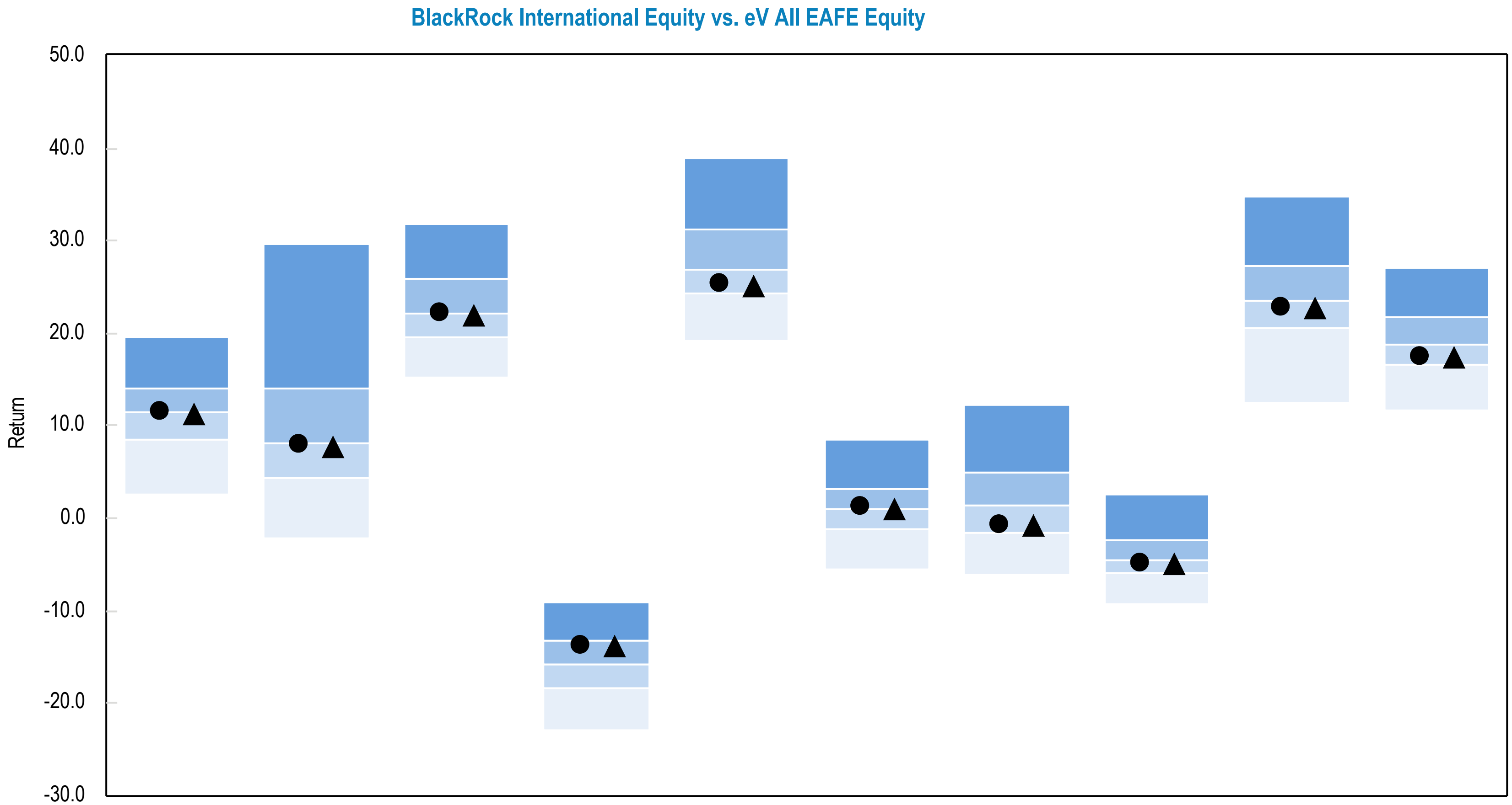
	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017
Total International Equity	**174,698,859**	**100.0**	**-13.5**	**-19.1**	**-19.1**	**-19.1**	**0.8**	**2.0**	**4.8**	**10.1**	**8.1**	**20.7**	**-14.3**	**27.9**
MSCI AC World ex USA Index			*-13.5*	*-18.2*	*-19.0*	*-19.0*	*1.8*	*3.0*	*5.3*	*8.3*	*11.1*	*22.1*	*-13.8*	*27.8*
BlackRock International Equity	131,763,759	75.4	-14.3	-19.3	-17.4	-17.4	1.4	2.5	5.7	11.6	8.1	22.4	-13.5	25.4
MSCI EAFE (Net)			*-14.5*	*-19.6*	*-17.8*	*-17.8*	*1.1*	*2.2*	*5.4*	*11.3*	*7.8*	*22.0*	*-13.8*	*25.0*
eV All EAFE Equity Rank			*53*	*44*	*38*	*38*	*53*	*42*	*56*	*49*	*52*	*49*	*29*	*62*
DFA Emerging Markets Value	24,073,089	13.8	-10.7	-10.2	-12.9	-12.9	1.9	2.7	3.3	12.4	2.8	9.6	-11.9	33.8
MSCI Emerging Markets Value (Net)			*-10.8*	*-13.9*	*-18.6*	*-18.6*	*-1.0*	*1.2*	*1.5*	*4.0*	*5.5*	*12.0*	*-10.7*	*28.1*
eV Emg Mkts All Cap Value Equity Rank			*47*	*27*	*17*	*17*	*46*	*56*	*81*	*17*	*83*	*91*	*33*	*38*
Harding Loevner Emerging Markets	18,862,010	10.8	-11.2	-27.0	-34.3	-34.3	-5.4	-2.4	-	-4.3	12.4	24.0	-19.5	33.6
MSCI Emerging Markets Growth Index			*-12.0*	*-21.0*	*-31.0*	*-31.0*	*2.1*	*3.1*	-	*-8.2*	*31.6*	*25.4*	*-18.0*	*47.1*
eV Emg Mkts All Cap Growth Equity Rank			*30*	*78*	*77*	*77*	*98*	*99*	-	*49*	*97*	*53*	*70*	*83*





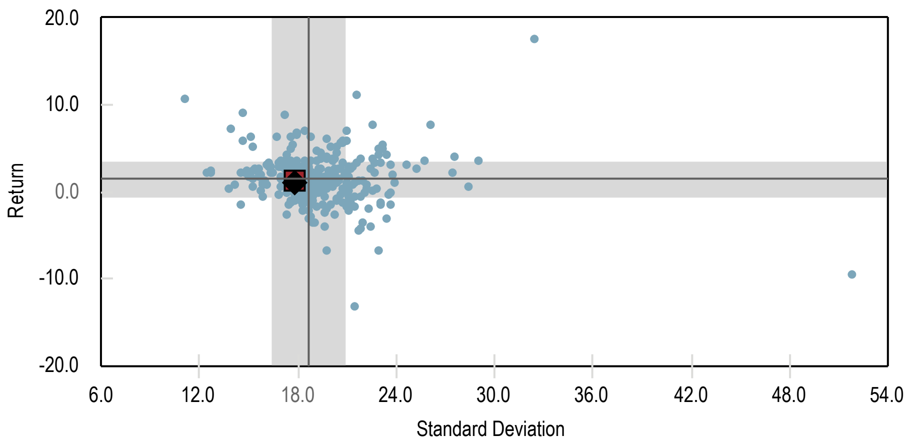


	Quarter	YTD	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● BlackRock International Equity	-14.33 (53)	-19.31 (44)	-17.44 (38)	-17.44 (38)	1.38 (53)	2.52 (42)	3.01 (49)	5.67 (56)
▲ MSCI EAFE (Net)	-14.51 (57)	-19.57 (48)	-17.77 (42)	-17.77 (42)	1.07 (63)	2.20 (51)	2.70 (59)	5.40 (69)
5th Percentile	-8.93	-11.02	-9.54	-9.54	6.41	5.65	6.15	9.00
1st Quartile	-12.20	-16.21	-15.72	-15.72	2.93	3.55	3.95	6.86
Median	-14.20	-19.92	-18.86	-18.86	1.57	2.22	2.93	5.80
3rd Quartile	-16.12	-24.38	-22.85	-22.85	0.13	1.27	2.10	5.21
95th Percentile	-20.47	-32.75	-32.81	-32.81	-2.37	-1.22	0.71	3.78
Population	328	328	327	327	309	289	254	207

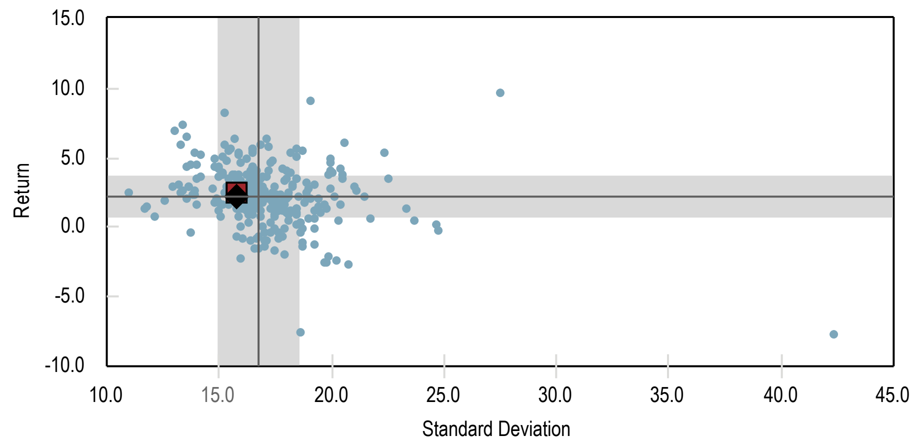


	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
● BlackRock International Equity	11.62 (49)	8.07 (52)	22.40 (49)	-13.52 (29)	25.42 (62)	1.34 (44)	-0.63 (65)	-4.77 (57)	22.94 (56)	17.58 (63)
▲ MSCI EAFE (Net)	11.26 (53)	7.82 (55)	22.01 (53)	-13.79 (34)	25.03 (67)	1.00 (50)	-0.81 (67)	-4.90 (60)	22.78 (56)	17.32 (67)
5th Percentile	19.60	29.59	31.80	-9.00	38.96	8.59	12.23	2.61	34.73	27.15
1st Quartile	14.09	14.07	25.90	-13.19	31.32	3.28	5.00	-2.41	27.28	21.68
Median	11.40	8.18	22.16	-15.81	26.91	0.97	1.43	-4.42	23.58	18.74
3rd Quartile	8.57	4.29	19.49	-18.38	24.23	-1.09	-1.58	-5.94	20.49	16.59
95th Percentile	2.50	-2.22	15.25	-22.92	19.22	-5.47	-6.02	-9.17	12.50	11.63
Population	355	374	385	395	394	388	374	368	343	341

3 Years



5 Years

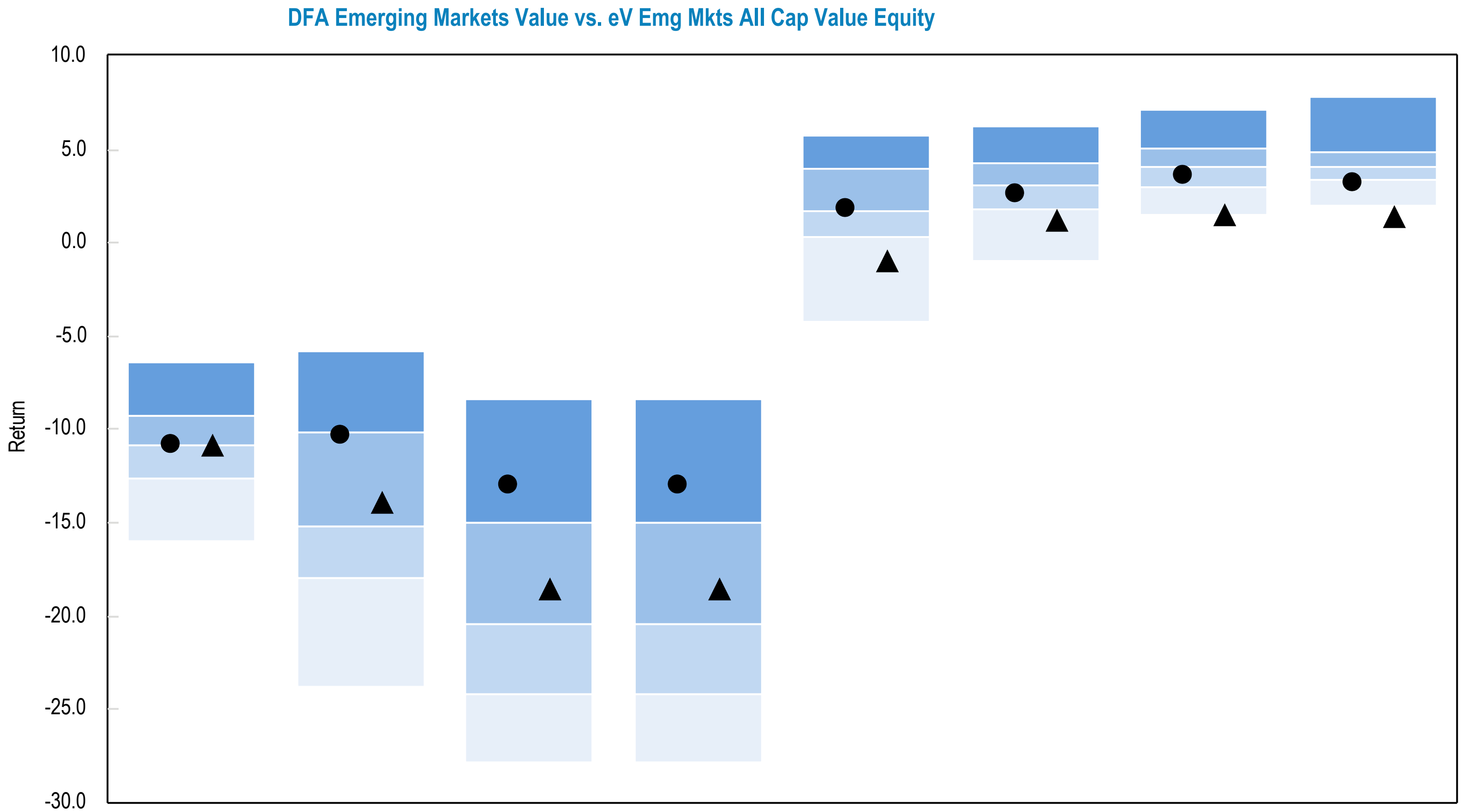


eV All EAFE Equity

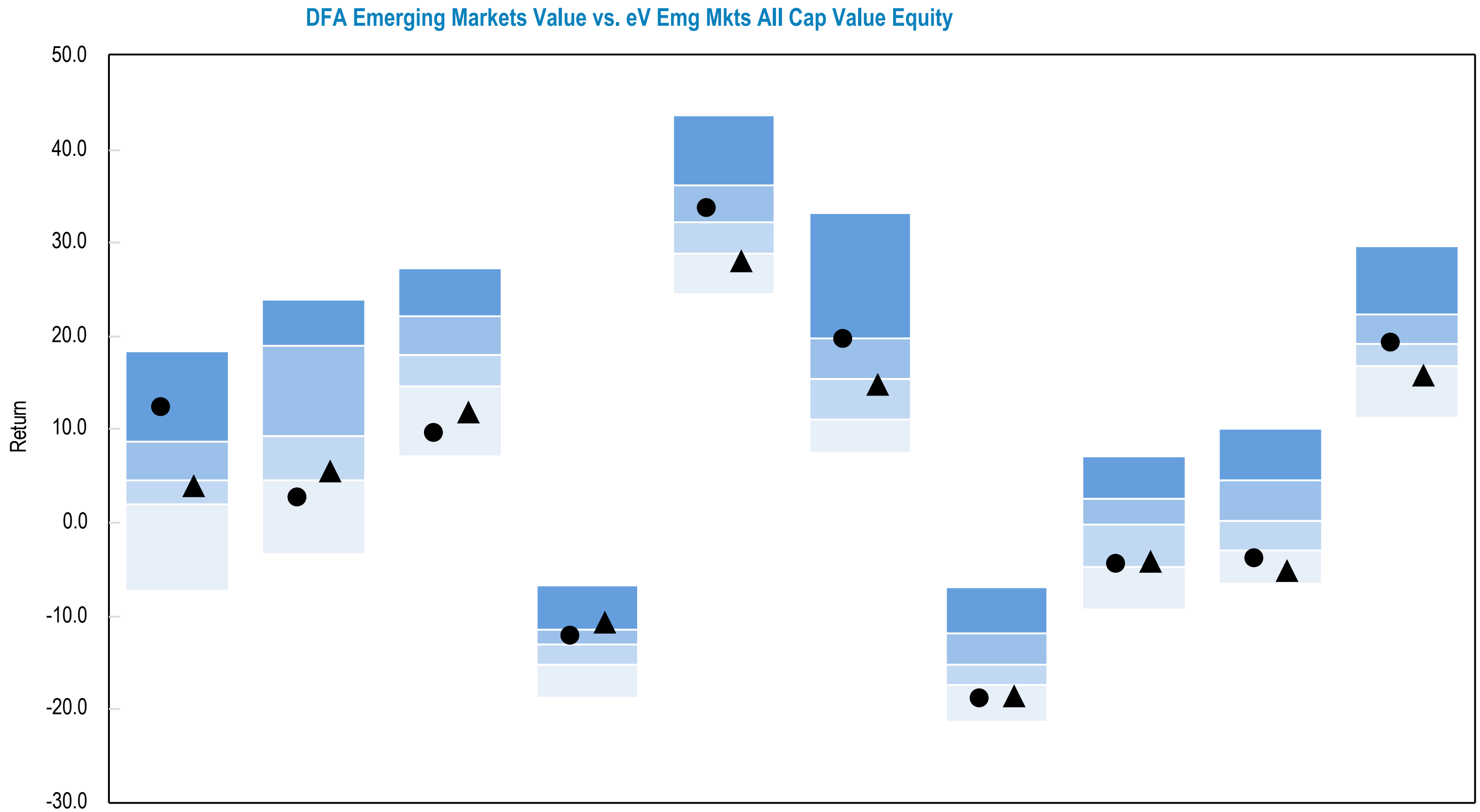
	Return	Standard Deviation
BlackRock International Equity	1.38	17.83
MSCI EAFE (Net)	1.07	17.76
Median	1.57	18.69
Population	309	309

eV All EAFE Equity

	Return	Standard Deviation
BlackRock International Equity	2.52	15.79
MSCI EAFE (Net)	2.20	15.74
Median	2.22	16.74
Population	289	289

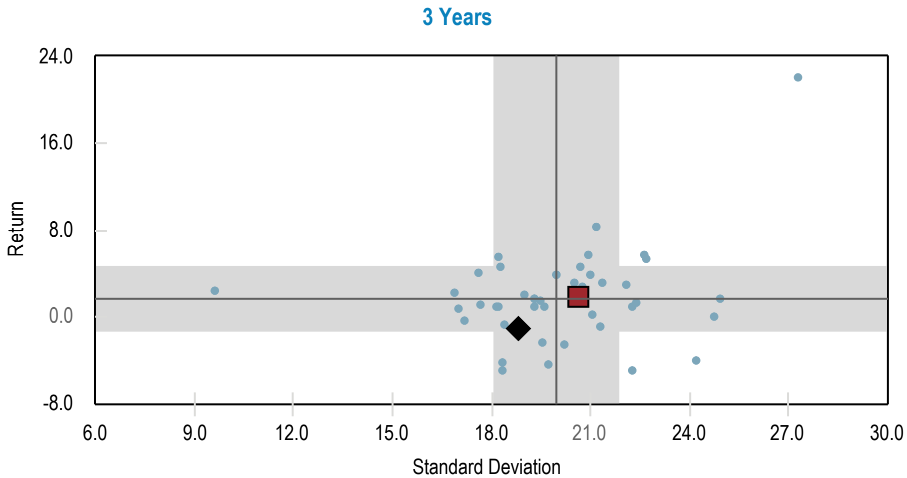


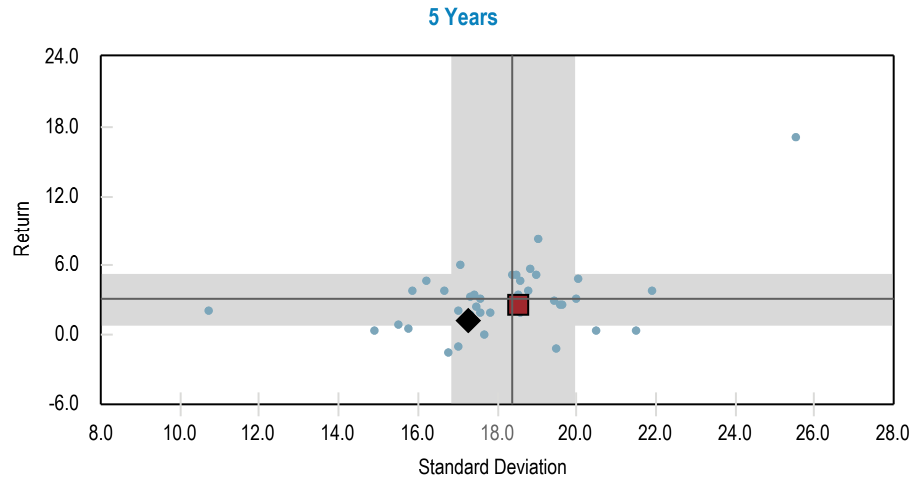
	Quarter	YTD	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● DFA Emerging Markets Value	-10.72 (47)	-10.25 (27)	-12.89 (17)	-12.89 (17)	1.91 (46)	2.67 (56)	3.64 (60)	3.25 (81)
▲ MSCI Emerging Markets Value (Net)	-10.83 (49)	-13.89 (38)	-18.59 (42)	-18.59 (42)	-0.97 (84)	1.25 (78)	1.46 (98)	1.46 (100)
5th Percentile	-6.40	-5.77	-8.32	-8.32	5.71	6.25	7.12	7.79
1st Quartile	-9.29	-10.12	-15.02	-15.02	3.93	4.27	5.07	4.89
Median	-10.88	-15.23	-20.38	-20.38	1.73	3.08	4.06	4.11
3rd Quartile	-12.62	-17.94	-24.19	-24.19	0.29	1.85	2.96	3.40
95th Percentile	-16.02	-23.73	-27.84	-27.84	-4.23	-1.00	1.55	1.99
Population	49	49	49	49	44	39	32	24



	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
● DFA Emerging Markets Value	12.41 (17)	2.81 (83)	9.64 (91)	-11.93 (33)	33.76 (38)	19.83 (24)	-18.77 (88)	-4.40 (73)	-3.80 (81)	19.38 (49)
▲ MSCI Emerging Markets Value (Net)	4.00 (60)	5.48 (72)	11.96 (89)	-10.74 (20)	28.07 (82)	14.90 (54)	-18.57 (88)	-4.08 (72)	-5.11 (89)	15.87 (87)
5th Percentile	18.44	23.96	27.36	-6.62	43.75	33.20	-6.89	7.11	10.19	29.62
1st Quartile	8.80	18.97	22.09	-11.41	36.16	19.71	-11.76	2.60	4.55	22.41
Median	4.63	9.21	18.02	-12.92	32.24	15.44	-15.19	-0.27	0.22	19.24
3rd Quartile	2.05	4.56	14.64	-15.24	28.81	11.09	-17.28	-4.73	-2.89	16.72
95th Percentile	-7.35	-3.43	7.12	-18.81	24.61	7.49	-21.30	-9.35	-6.40	11.34
Population	51	57	58	56	54	50	47	51	51	41

Verus





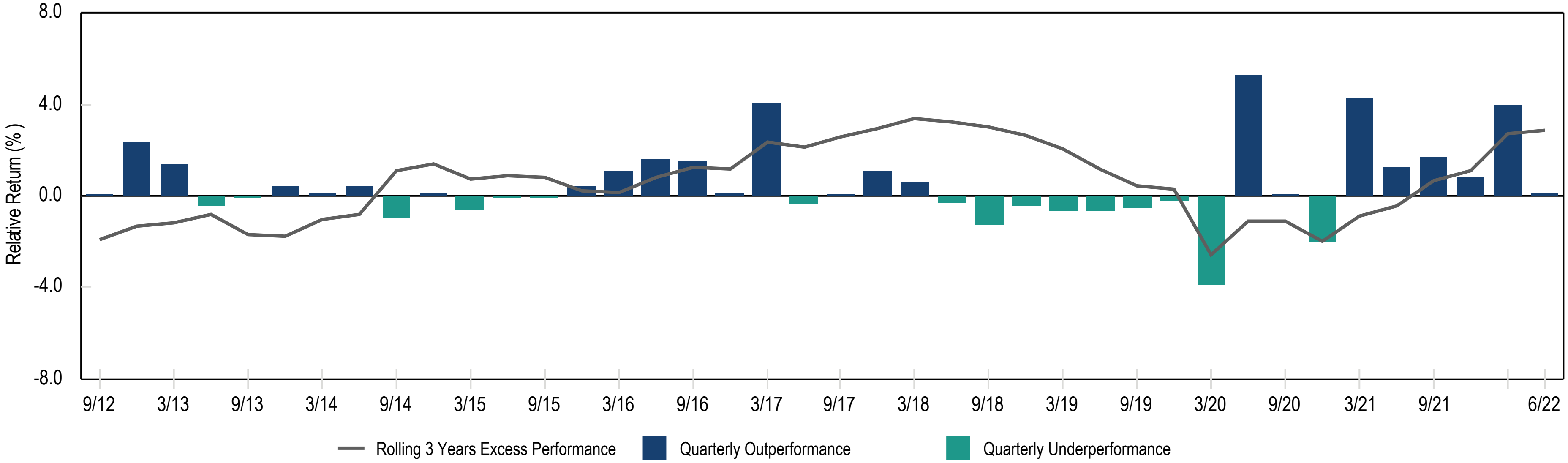
eV Emg Mkts All Cap Value Equity (3 Years)

	Return	Standard Deviation
DFA Emerging Markets Value	1.91	20.64
MSCI Emerging Markets Value (Net)	-0.97	18.82
Median	1.73	19.96
Population	44	44

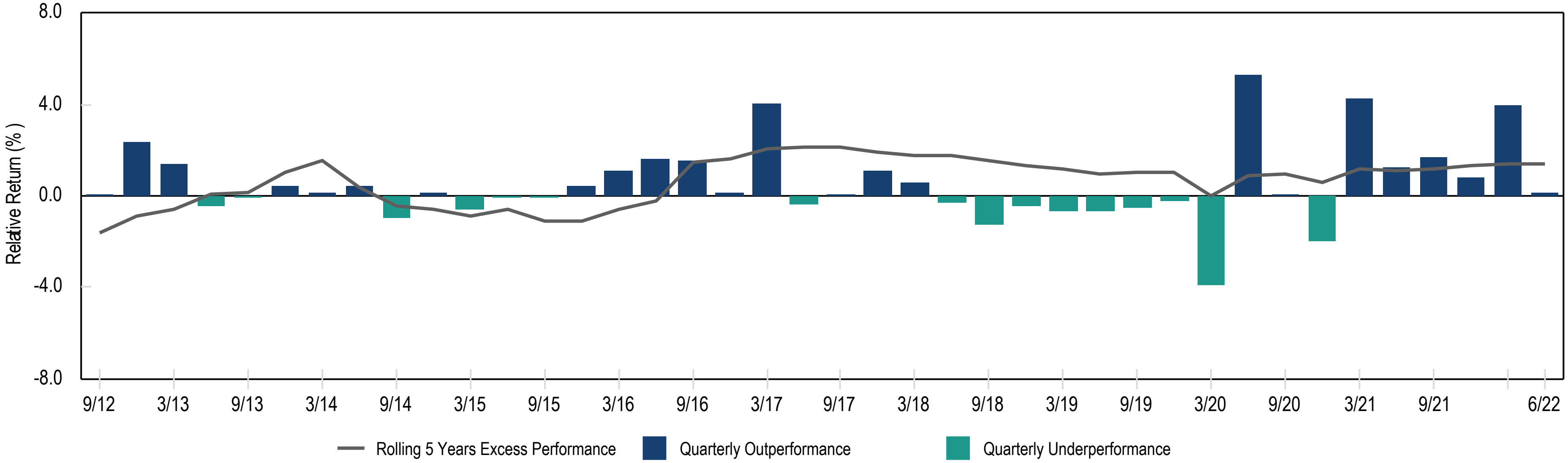
eV Emg Mkts All Cap Value Equity (5 Years)

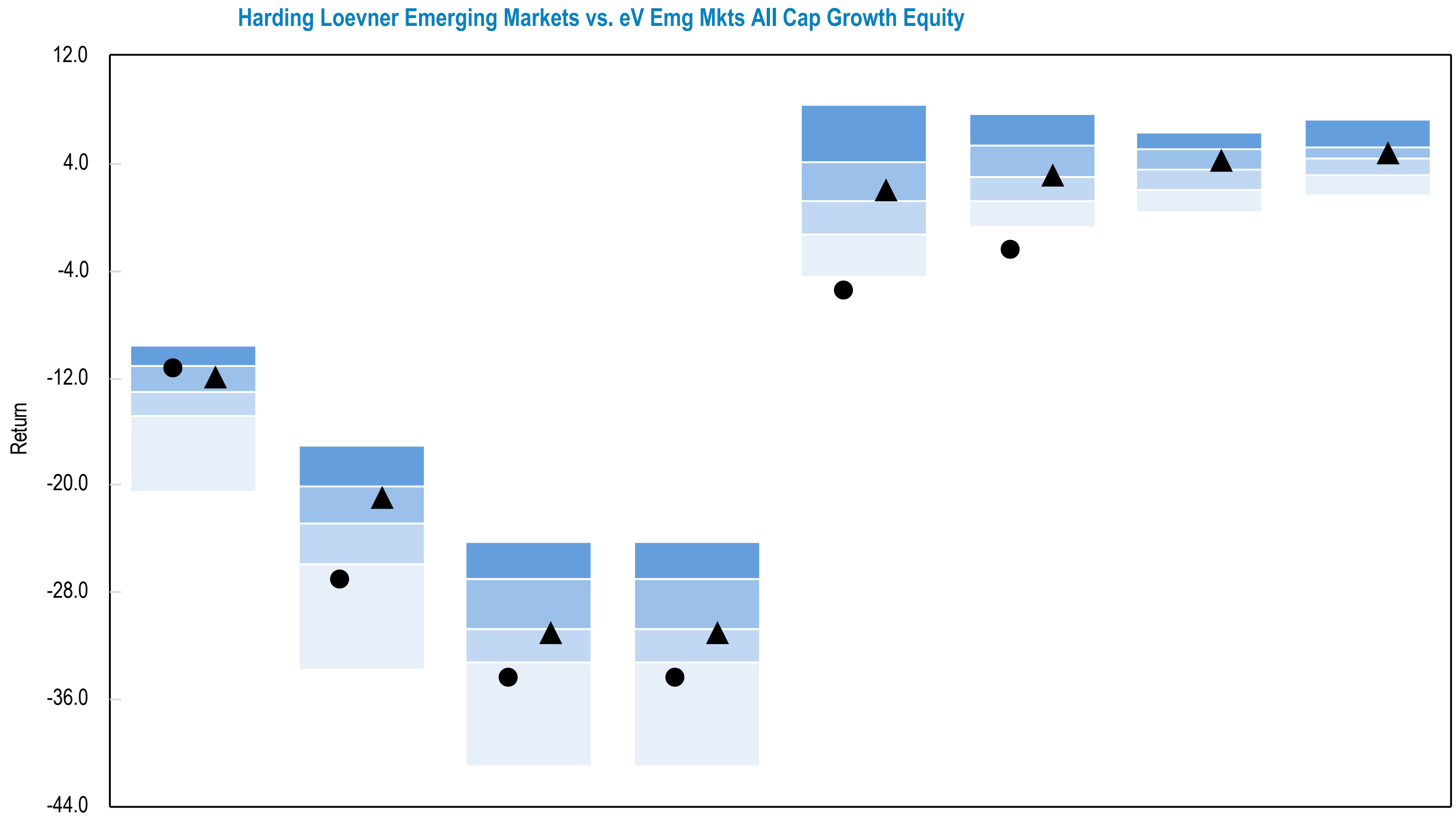
	Return	Standard Deviation
DFA Emerging Markets Value	2.67	18.51
MSCI Emerging Markets Value (Net)	1.25	17.27
Median	3.08	18.40
Population	39	39

Rolling 3 Year Annualized Excess Performance



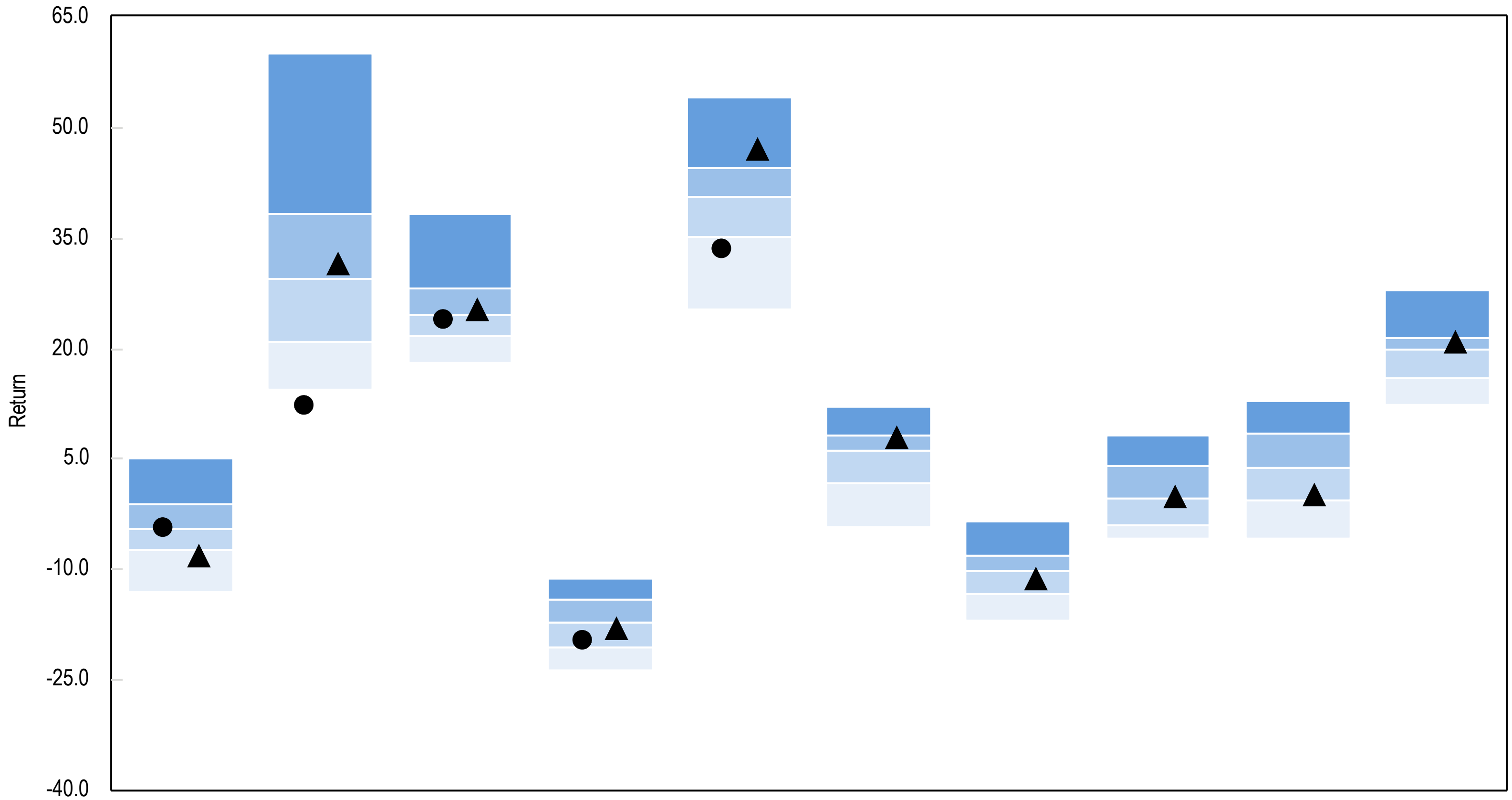
Rolling 5 Year Annualized Excess Performance





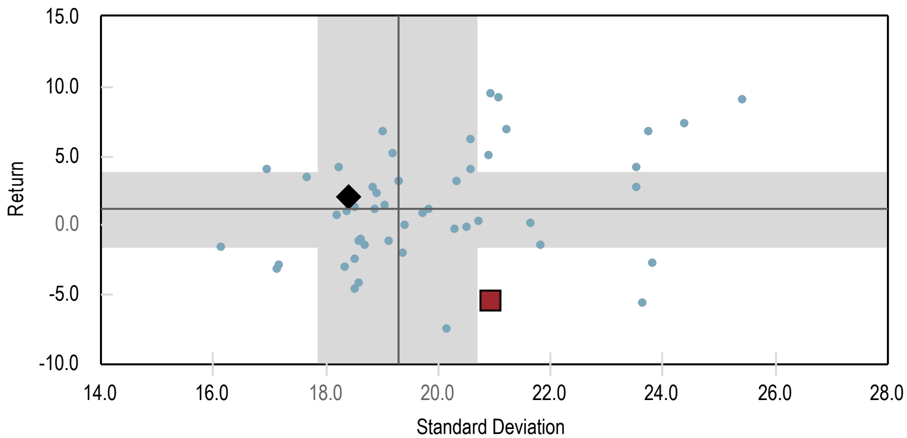
	Quarter	YTD	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● Harding Loevner Emerging Markets	-11.24 (30)	-27.00 (78)	-34.34 (77)	-34.34 (77)	-5.39 (98)	-2.45 (99)	-	-
▲ MSCI Emerging Markets Growth Index	-11.97 (40)	-20.97 (36)	-31.02 (53)	-31.02 (53)	2.09 (43)	3.15 (46)	4.19 (47)	4.79 (45)
5th Percentile	-9.57	-16.97	-24.24	-24.24	8.41	7.75	6.32	7.36
1st Quartile	-11.15	-20.01	-26.93	-26.93	4.15	5.30	5.10	5.27
Median	-13.02	-22.79	-30.70	-30.70	1.18	2.97	3.63	4.35
3rd Quartile	-14.84	-25.85	-33.21	-33.21	-1.32	1.28	1.98	3.17
95th Percentile	-20.52	-33.81	-40.90	-40.90	-4.39	-0.68	0.44	1.61
Population	54	54	54	54	49	39	36	25

Harding Loevner Emerging Markets vs. eV Emg Mkts All Cap Growth Equity

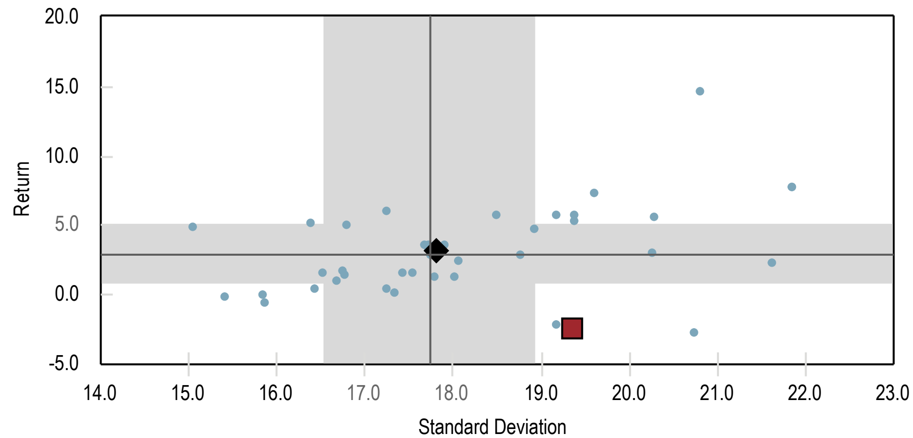


	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
● Harding Loevner Emerging Markets	-4.27 (49)	12.36 (97)	24.04 (53)	-19.48 (70)	33.62 (83)	-	-	-	-	-
▲ MSCI Emerging Markets Growth Index	-8.24 (81)	31.58 (39)	25.44 (41)	-18.04 (60)	47.12 (15)	7.87 (29)	-11.12 (59)	-0.09 (43)	0.07 (71)	20.86 (38)
5th Percentile	5.14	60.06	38.36	-11.25	54.20	12.19	-3.42	8.34	13.00	27.92
1st Quartile	-1.01	38.35	28.06	-14.06	44.46	8.14	-8.12	4.05	8.44	21.43
Median	-4.44	29.54	24.57	-17.30	40.53	6.22	-10.06	-0.35	3.80	19.82
3rd Quartile	-7.37	20.99	21.70	-20.57	35.18	1.71	-13.31	-3.97	-0.65	15.94
95th Percentile	-13.09	14.42	18.11	-23.56	25.26	-4.31	-16.80	-5.77	-5.67	12.48
Population	54	57	58	54	54	54	54	46	43	38

3 Years



3 Years

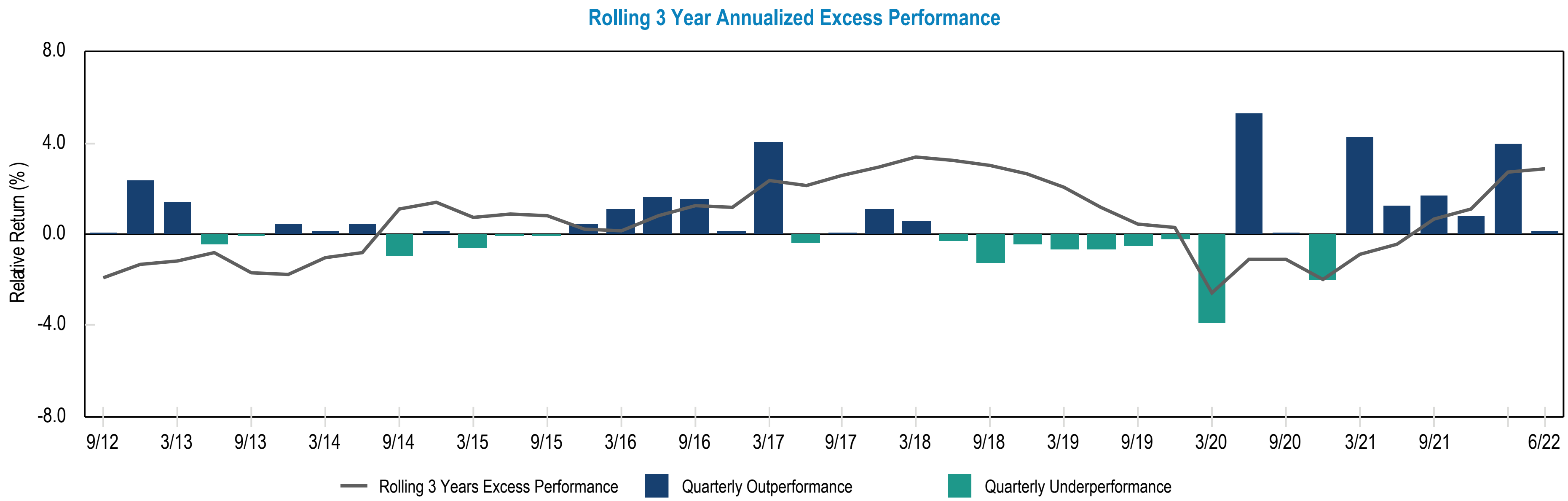


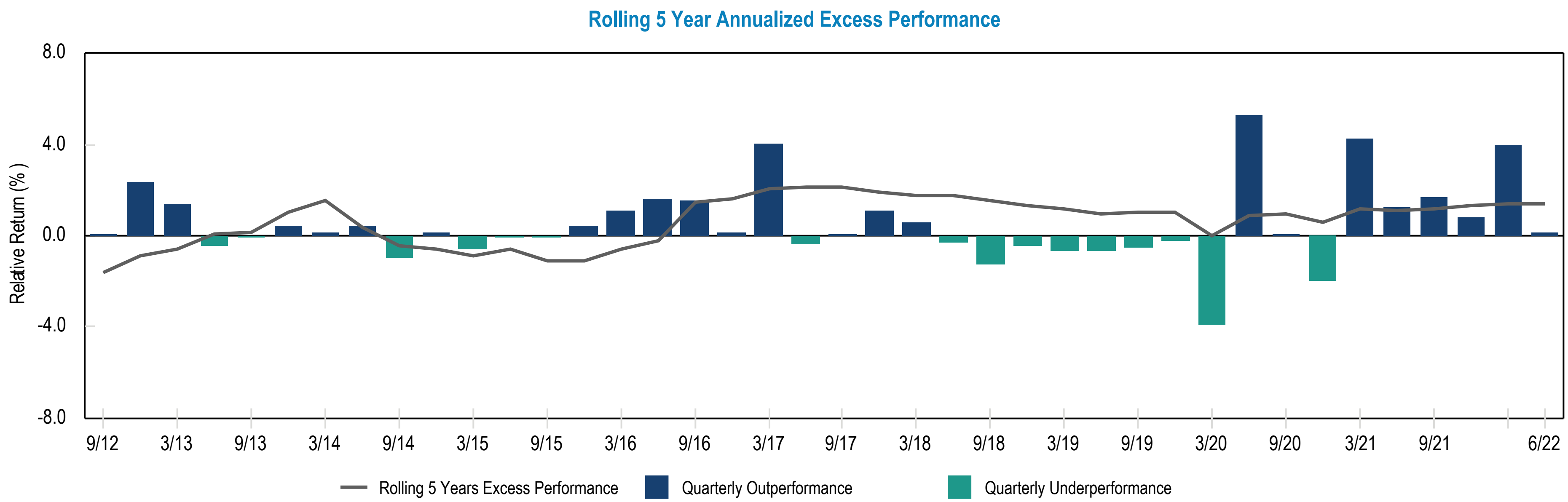
eV Emg Mkts All Cap Growth Equity

	Return	Standard Deviation
Harding Loevner Emerging Markets	-5.39	20.92
MSCI Emerging Markets Growth Index	2.09	18.41
Median	1.18	19.29
Population	49	49

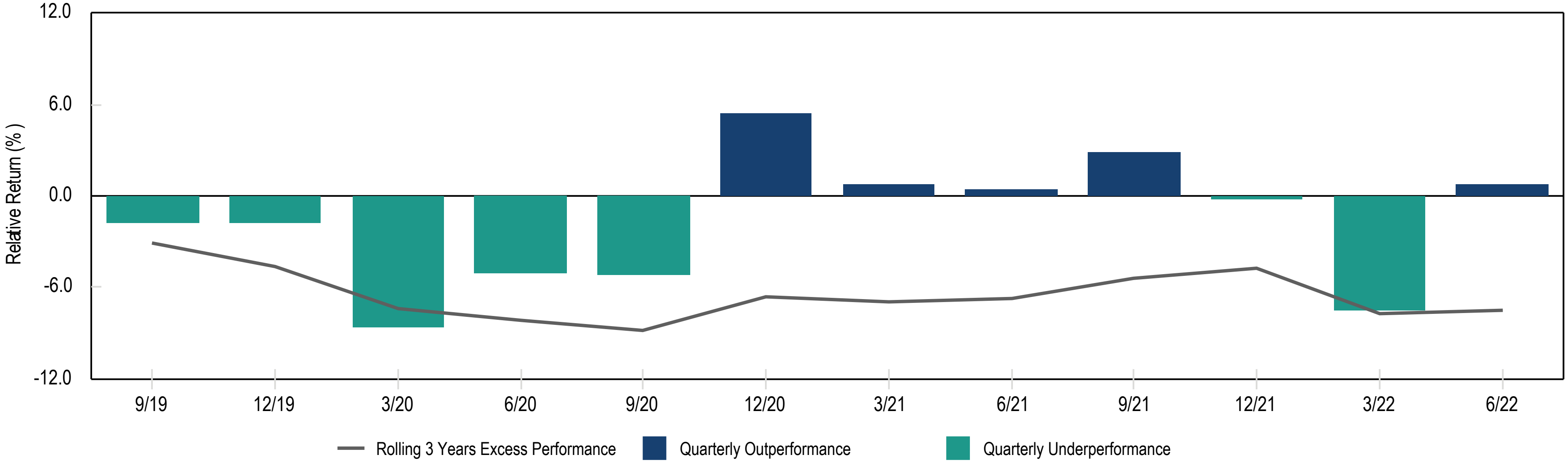
eV Emg Mkts All Cap Growth Equity

	Return	Standard Deviation
Harding Loevner Emerging Markets	-2.45	19.35
MSCI Emerging Markets Growth Index	3.15	17.81
Median	2.97	17.73
Population	39	39

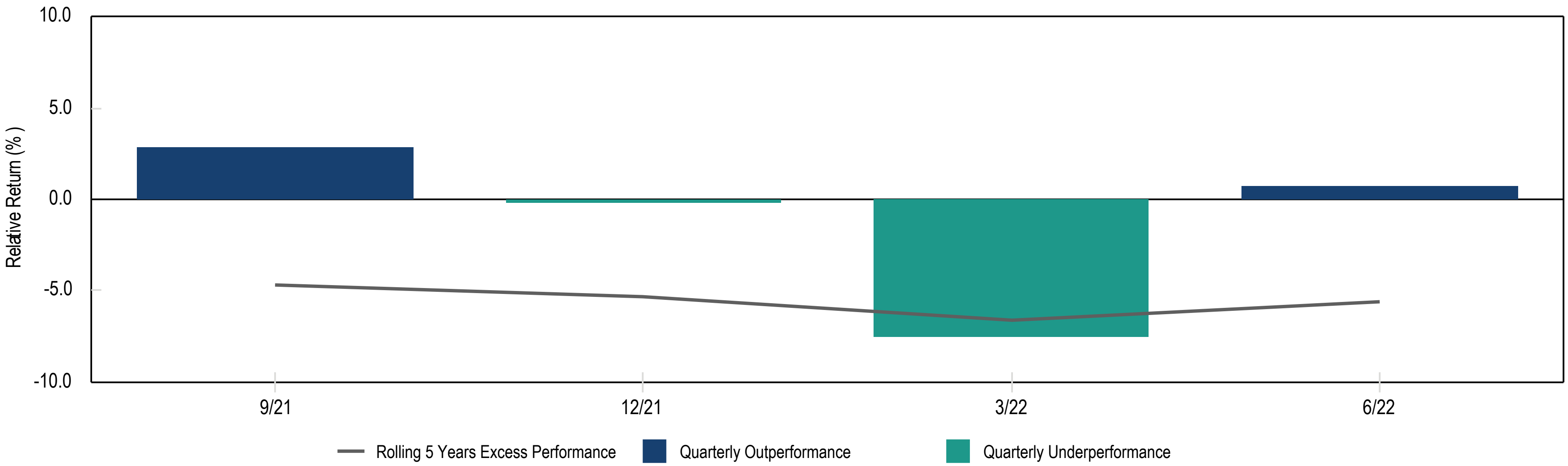

Rolling 3 Year Annualized Excess Performance
8.0
4.0
0.0
-4.0
-8.0
Relative Return (%)
9/12
3/13
9/13
3/14
9/14
3/15
9/15
3/16
9/16
3/17
9/17
3/18
9/18
3/19
9/19
3/20
9/20
3/21
9/21
6/22
Rolling 3 Years Excess Performance
Quarterly Outperformance
Quarterly Underperformance


Rolling 5 Year Annualized Excess Performance
8.0
4.0
0.0
-4.0
-8.0
Relative Return (%)
9/12
3/13
9/13
3/14
9/14
3/15
9/15
3/16
9/16
3/17
9/17
3/18
9/18
3/19
9/19
3/20
9/20
3/21
9/21
6/22
Rolling 5 Years Excess Performance
Quarterly Outperformance
Quarterly Underperformance

Rolling 3 Year Annualized Excess Performance



Rolling 5 Year Annualized Excess Performance



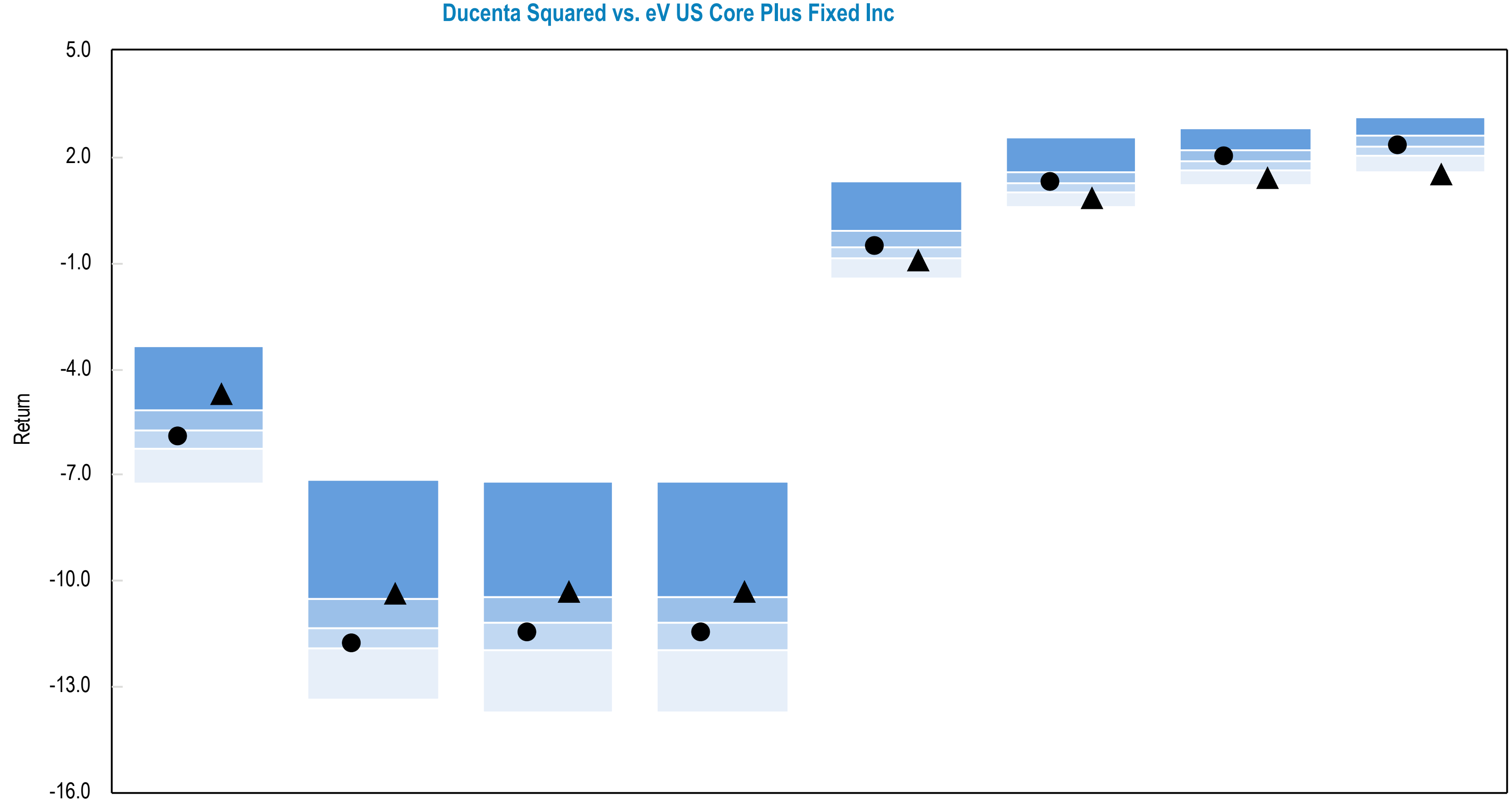
	Market Value	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017
Total Fixed Income	**244,304,984**	**-6.0**	**-11.3**	**-10.5**	**-10.5**	**0.2**	**1.6**	**2.2**	**0.6**	**9.8**	**9.5**	**-0.8**	**4.3**
Blmbg. U.S. Aggregate Index		*-4.7*	*-10.3*	*-10.3*	*-10.3*	*-0.9*	*0.9*	*1.5*	*-1.5*	*7.5*	*8.7*	*0.0*	*3.5*
Ducenta Squared	99,736,470	-5.9	-11.8	-11.5	-11.5	-0.5	1.3	2.3	-0.6	9.1	9.9	-0.1	4.3
Blmbg. U.S. Aggregate Index		*-4.7*	*-10.3*	*-10.3*	*-10.3*	*-0.9*	*0.9*	*1.5*	*-1.5*	*7.5*	*8.7*	*0.0*	*3.5*
eV US Core Plus Fixed Inc Rank		*59*	*71*	*64*	*64*	*48*	*44*	*43*	*52*	*35*	*42*	*26*	*66*
MacKay Shields Core Plus Opportunities	98,434,982	-6.0	-12.0	-11.9	-11.9	-0.3	1.2	-	-0.5	9.9	9.7	-1.0	4.5
Blmbg. U.S. Aggregate Index		*-4.7*	*-10.3*	*-10.3*	*-10.3*	*-0.9*	*0.9*	*-*	*-1.5*	*7.5*	*8.7*	*0.0*	*3.5*
eV US Core Plus Fixed Inc Rank		*61*	*76*	*74*	*74*	*36*	*55*	*-*	*49*	*21*	*51*	*76*	*52*
BlackRock US TIPS	46,133,531	-6.1	-8.9	-5.2	-5.2	3.1	3.3	1.8	5.9	11.2	8.5	-1.2	3.2
Blmbg. U.S. TIPS		*-6.1*	*-8.9*	*-5.1*	*-5.1*	*3.0*	*3.2*	*1.7*	*6.0*	*11.0*	*8.4*	*-1.3*	*3.0*
eV US TIPS / Inflation Fixed Inc Rank		*58*	*61*	*54*	*54*	*48*	*31*	*35*	*29*	*30*	*34*	*36*	*41*

Fixed Income Style Map
3 Years Ending June 30, 2022

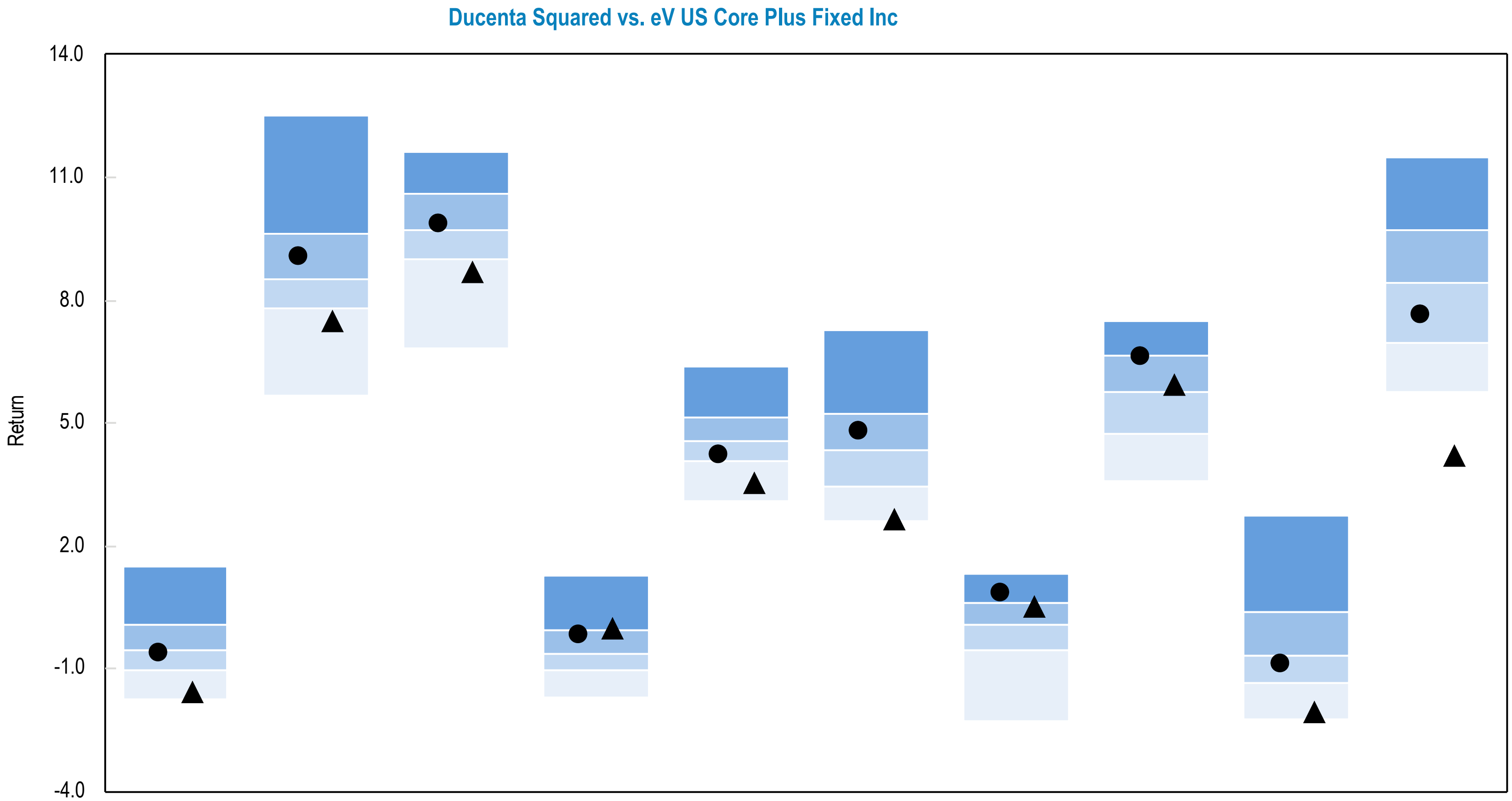
Fixed Income Style Map
5 Years Ending June 30, 2022

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017
Total Fixed Income	**244,304,984**	**100.0**	**-6.0**	**-11.3**	**-10.5**	**-10.5**	**0.2**	**1.6**	**2.2**	**0.6**	**9.8**	**9.5**	**-0.8**	**4.3**
Blmbg. U.S. Aggregate Index			*-4.7*	*-10.3*	*-10.3*	*-10.3*	*-0.9*	*0.9*	*1.5*	*-1.5*	*7.5*	*8.7*	*0.0*	*3.5*
Ducenta Squared	99,736,470	40.8	-5.9	-11.8	-11.5	-11.5	-0.5	1.3	2.3	-0.6	9.1	9.9	-0.1	4.3
Blmbg. U.S. Aggregate Index			*-4.7*	*-10.3*	*-10.3*	*-10.3*	*-0.9*	*0.9*	*1.5*	*-1.5*	*7.5*	*8.7*	*0.0*	*3.5*
MacKay Shields Core Plus Opportunities	98,434,982	40.3	-6.0	-12.0	-11.9	-11.9	-0.3	1.2	-	-0.5	9.9	9.7	-1.0	4.5
Blmbg. U.S. Aggregate Index			*-4.7*	*-10.3*	*-10.3*	*-10.3*	*-0.9*	*0.9*	-	*-1.5*	*7.5*	*8.7*	*0.0*	*3.5*
BlackRock US TIPS	46,133,531	18.9	-6.1	-8.9	-5.2	-5.2	3.1	3.3	1.8	5.9	11.2	8.5	-1.2	3.2
Blmbg. U.S. TIPS			*-6.1*	*-8.9*	*-5.1*	*-5.1*	*3.0*	*3.2*	*1.7*	*6.0*	*11.0*	*8.4*	*-1.3*	*3.0*

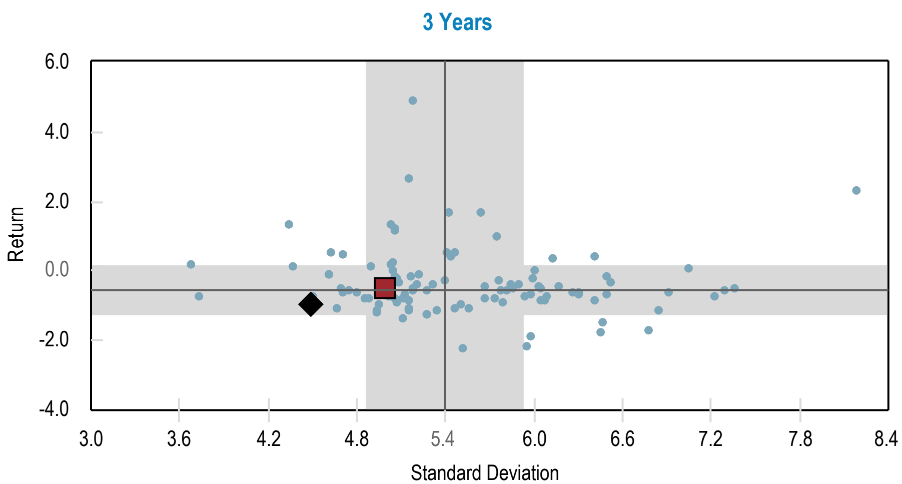
	Total Fixed Income	Ducenta Squared	MacKay Shields Core Plus Opportunities	BlackRock US TIPS	Blmbg. U.S. Aggregate Index
Total Fixed Income	1.00				
Ducenta Squared	0.99	1.00			
MacKay Shields Core Plus Opportunities	0.99	0.99	1.00		
BlackRock US TIPS	0.90	0.85	0.85	1.00	
Blmbg. U.S. Aggregate Index	0.94	0.96	0.92	0.81	1.00

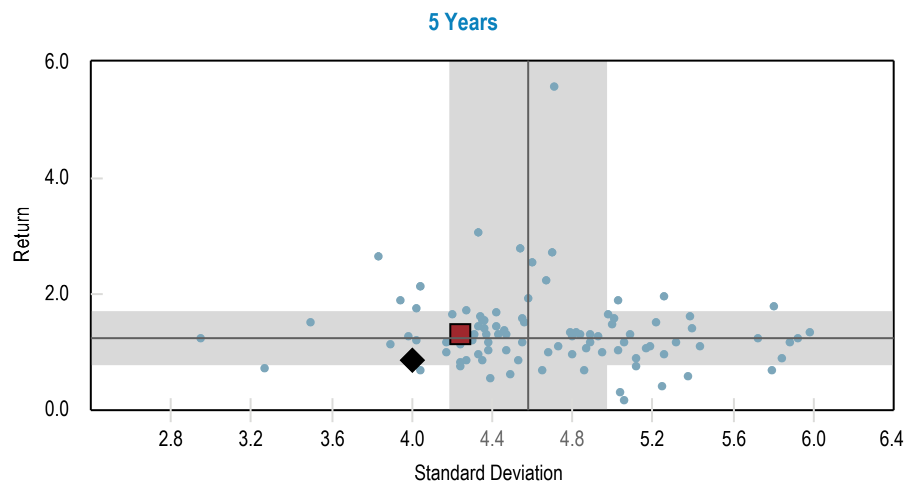


	Quarter	YTD	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● Ducenta Squared	-5.90 (59)	-11.76 (71)	-11.46 (64)	-11.46 (64)	-0.52 (48)	1.31 (44)	2.06 (35)	2.35 (43)
▲ Blmbg. U.S. Aggregate Index	-4.69 (12)	-10.35 (23)	-10.29 (19)	-10.29 (19)	-0.94 (81)	0.88 (83)	1.42 (86)	1.54 (96)
5th Percentile	-3.35	-7.12	-7.17	-7.17	1.34	2.57	2.81	3.14
1st Quartile	-5.17	-10.51	-10.47	-10.47	-0.08	1.55	2.22	2.60
Median	-5.73	-11.33	-11.16	-11.16	-0.55	1.24	1.88	2.30
3rd Quartile	-6.24	-11.93	-11.95	-11.95	-0.83	1.01	1.63	2.03
95th Percentile	-7.25	-13.35	-13.71	-13.71	-1.45	0.61	1.21	1.59
Population	105	105	105	105	103	95	92	86



	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
● Ducenta Squared	-0.57 (52)	9.11 (35)	9.91 (42)	-0.13 (26)	4.25 (66)	4.85 (33)	0.89 (16)	6.67 (25)	-0.83 (55)	7.67 (66)
▲ Blmbg. U.S. Aggregate Index	-1.55 (92)	7.51 (82)	8.72 (81)	0.01 (25)	3.54 (90)	2.65 (95)	0.55 (29)	5.97 (40)	-2.02 (90)	4.21 (100)
5th Percentile	1.52	12.52	11.65	1.28	6.40	7.28	1.35	7.53	2.75	11.53
1st Quartile	0.11	9.63	10.60	-0.05	5.14	5.23	0.64	6.65	0.41	9.73
Median	-0.52	8.55	9.71	-0.61	4.60	4.37	0.11	5.78	-0.65	8.46
3rd Quartile	-1.03	7.83	9.01	-1.03	4.10	3.44	-0.55	4.76	-1.35	6.99
95th Percentile	-1.75	5.70	6.86	-1.67	3.11	2.63	-2.28	3.61	-2.23	5.77
Population	115	119	120	120	123	122	122	120	119	118





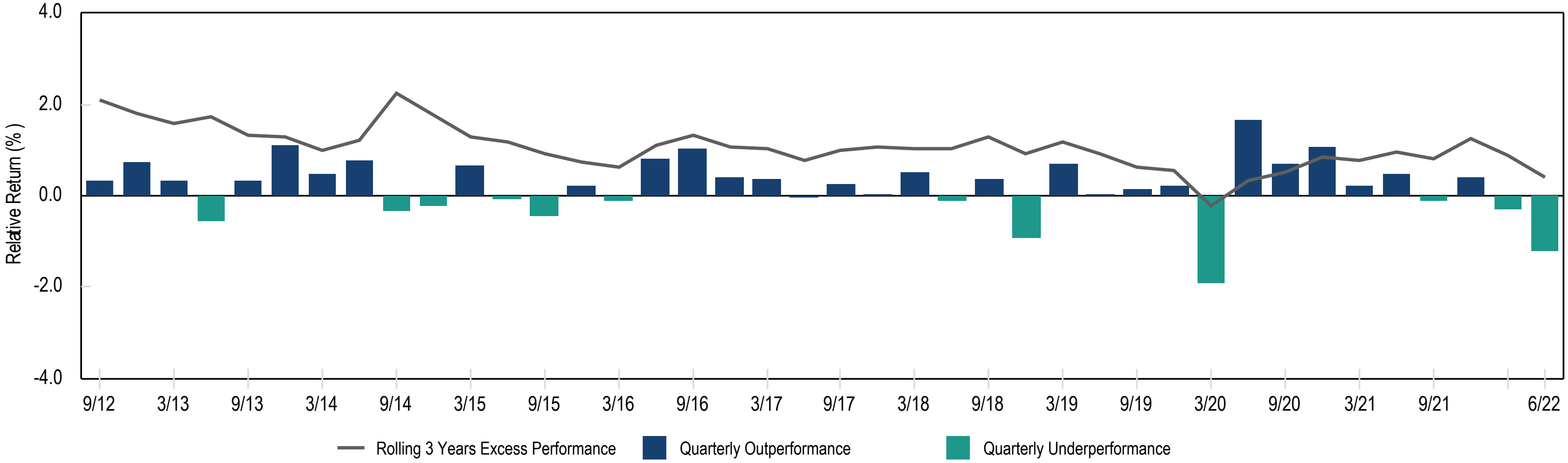
eV US Core Plus Fixed Inc (3 Years)

	Return	Standard Deviation
Ducenta Squared	-0.52	4.98
Blmbg. U.S. Aggregate Index	-0.94	4.49
Median	-0.55	5.39
Population	103	103

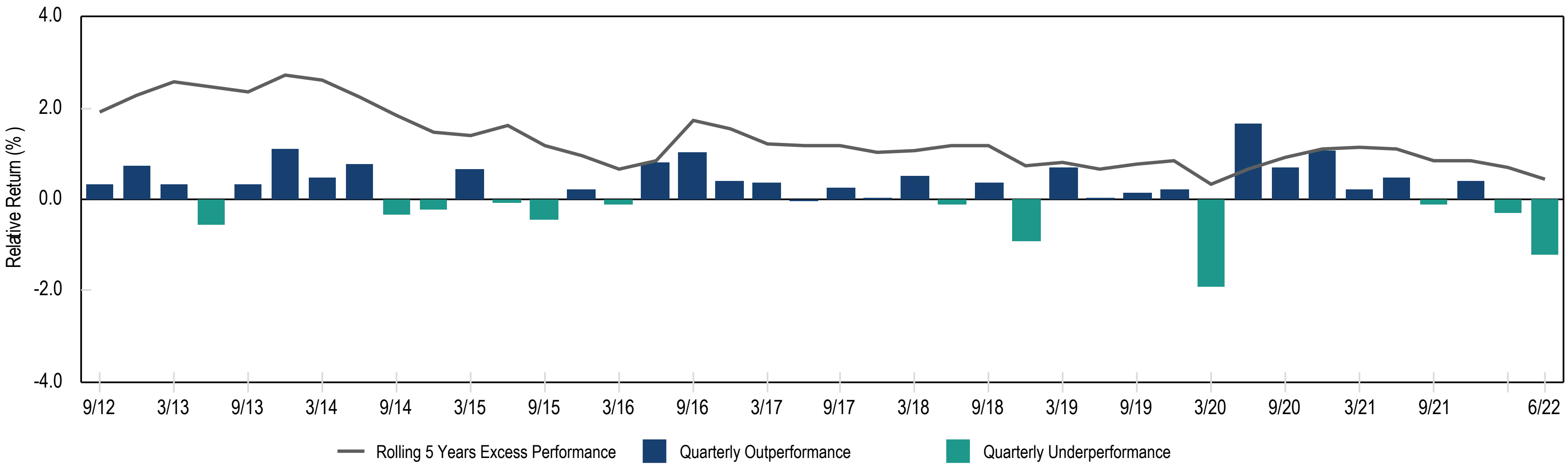
eV US Core Plus Fixed Inc (5 Years)

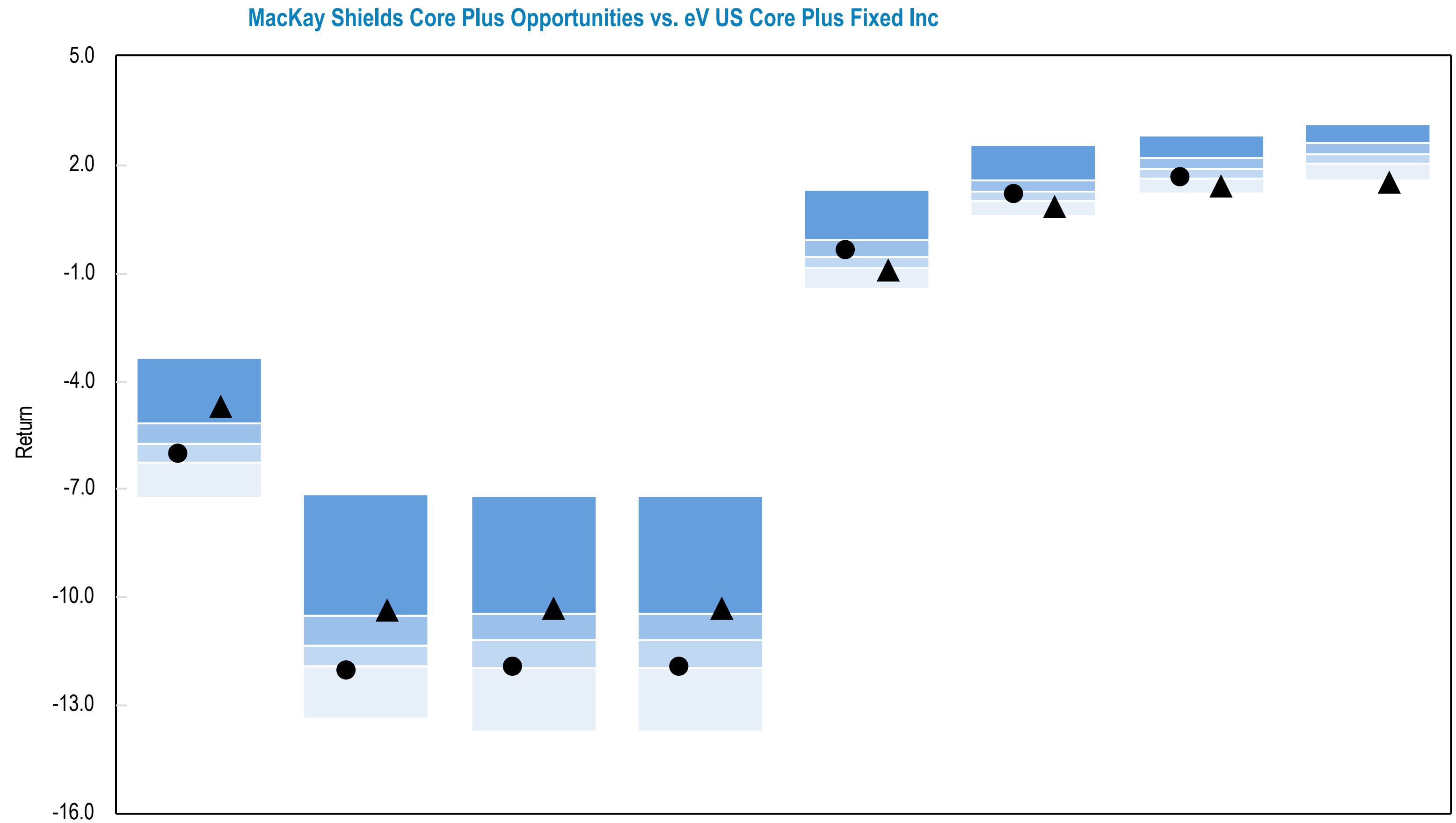
	Return	Standard Deviation
Ducenta Squared	1.31	4.24
Blmbg. U.S. Aggregate Index	0.88	4.01
Median	1.24	4.58
Population	95	95

Rolling 3 Year Annualized Excess Performance

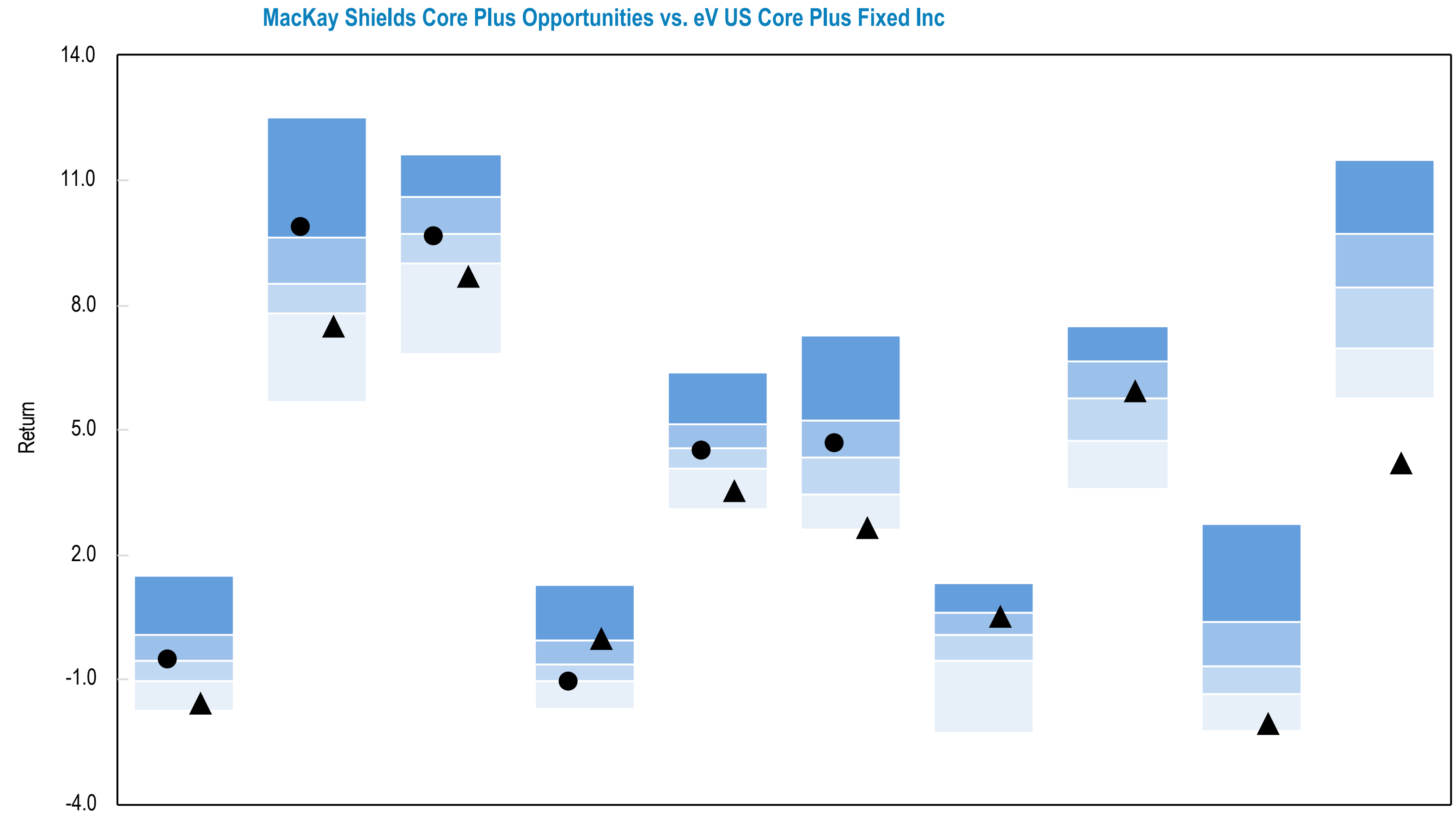


Rolling 5 Year Annualized Excess Performance

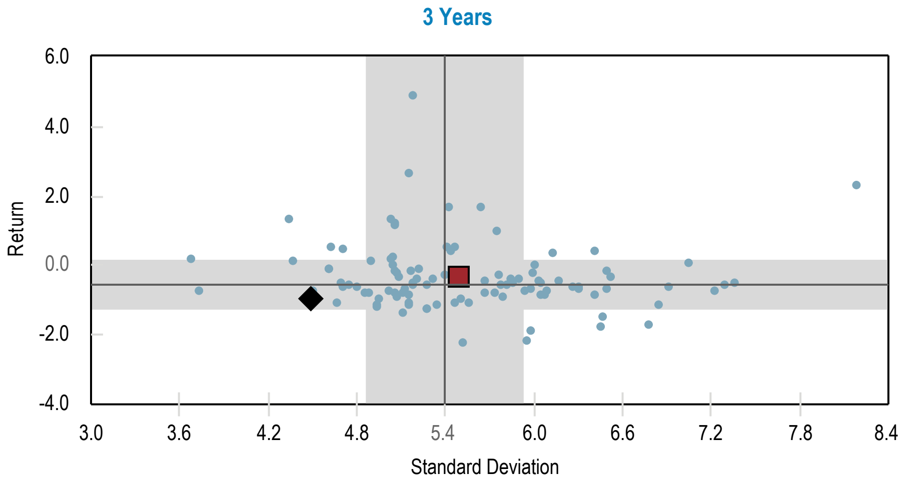


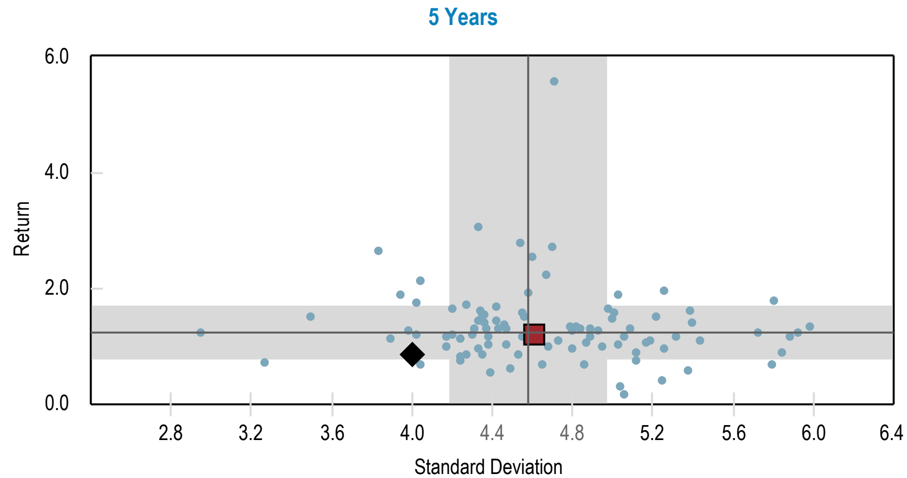


	Quarter	YTD	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● MacKay Shields Core Plus Opportunities	-5.98 (61)	-11.99 (76)	-11.92 (74)	-11.92 (74)	-0.34 (36)	1.20 (55)	1.68 (72)	-
▲ Blmbg. U.S. Aggregate Index	-4.69 (12)	-10.35 (23)	-10.29 (19)	-10.29 (19)	-0.94 (81)	0.88 (83)	1.42 (86)	1.54 (96)
5th Percentile	-3.35	-7.12	-7.17	-7.17	1.34	2.57	2.81	3.14
1st Quartile	-5.17	-10.51	-10.47	-10.47	-0.08	1.55	2.22	2.60
Median	-5.73	-11.33	-11.16	-11.16	-0.55	1.24	1.88	2.30
3rd Quartile	-6.24	-11.93	-11.95	-11.95	-0.83	1.01	1.63	2.03
95th Percentile	-7.25	-13.35	-13.71	-13.71	-1.45	0.61	1.21	1.59
Population	105	105	105	105	103	95	92	86



	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
● MacKay Shields Core Plus Opportunities	-0.49 (49)	9.91 (21)	9.67 (51)	-1.03 (76)	4.53 (52)	4.69 (39)	-	-	-	-
▲ Blmbg. U.S. Aggregate Index	-1.55 (92)	7.51 (82)	8.72 (81)	0.01 (25)	3.54 (90)	2.65 (95)	0.55 (29)	5.97 (40)	-2.02 (90)	4.21 (100)
5th Percentile	1.52	12.52	11.65	1.28	6.40	7.28	1.35	7.53	2.75	11.53
1st Quartile	0.11	9.63	10.60	-0.05	5.14	5.23	0.64	6.65	0.41	9.73
Median	-0.52	8.55	9.71	-0.61	4.60	4.37	0.11	5.78	-0.65	8.46
3rd Quartile	-1.03	7.83	9.01	-1.03	4.10	3.44	-0.55	4.76	-1.35	6.99
95th Percentile	-1.75	5.70	6.86	-1.67	3.11	2.63	-2.28	3.61	-2.23	5.77
Population	115	119	120	120	123	122	122	120	119	118



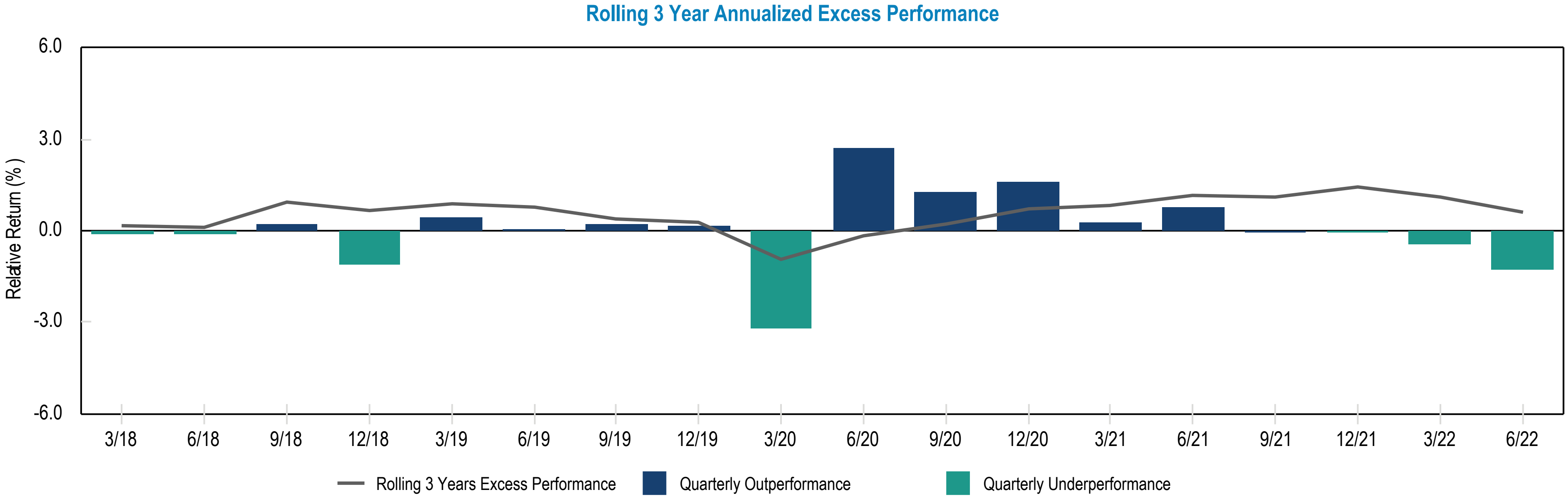


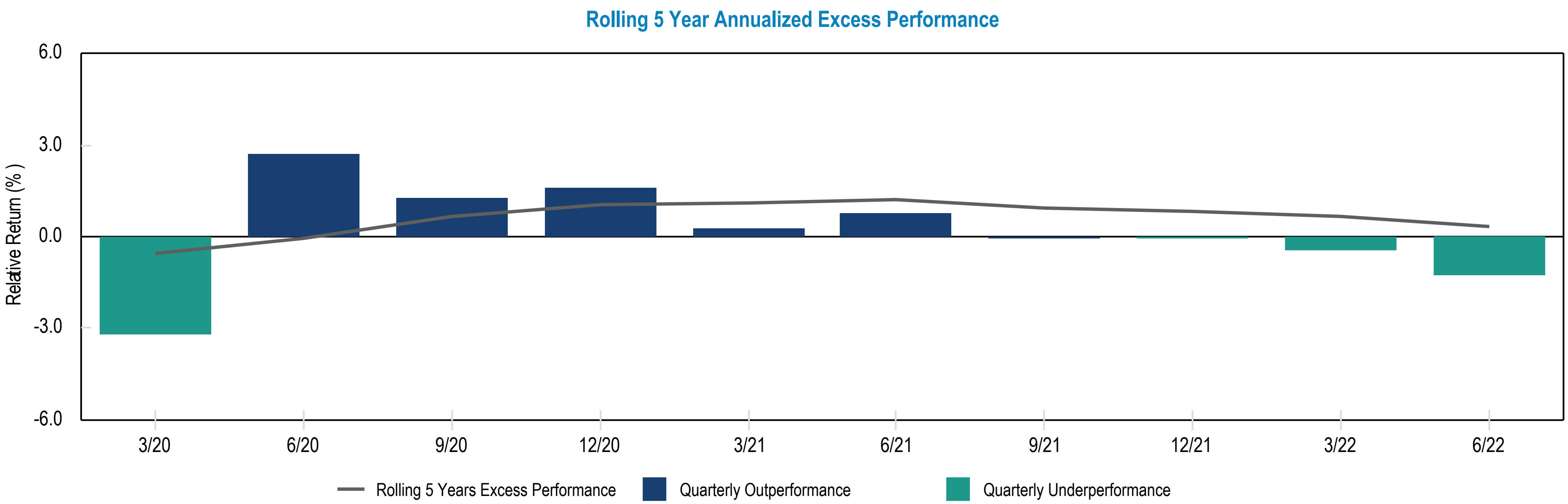
eV US Core Plus Fixed Inc

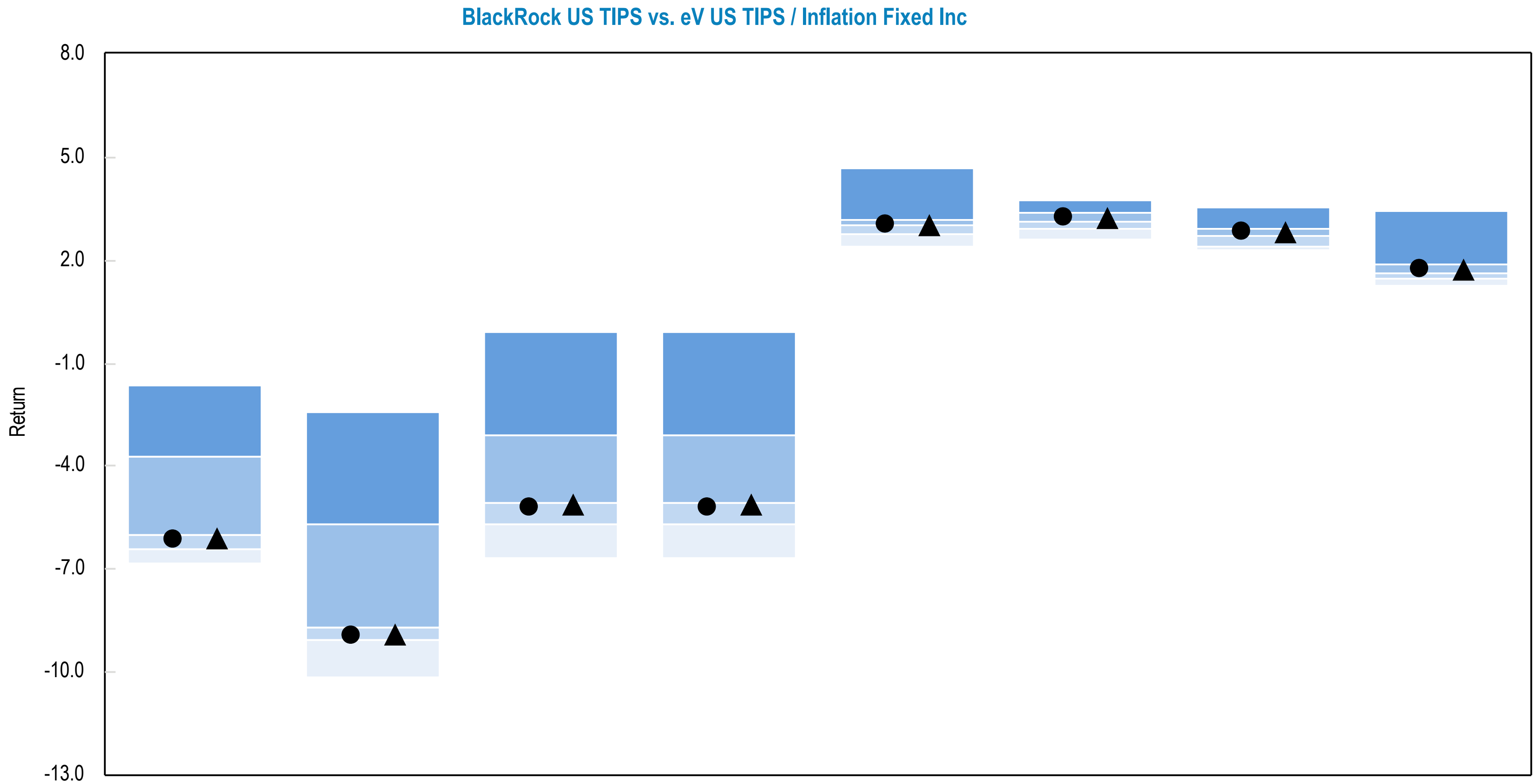
	Return	Standard Deviation
MacKay Shields Core Plus Opportunities	-0.34	5.48
Blmbg. U.S. Aggregate Index	-0.94	4.49
Median	-0.55	5.39
Population	103	103

eV US Core Plus Fixed Inc

	Return	Standard Deviation
MacKay Shields Core Plus Opportunities	1.20	4.61
Blmbg. U.S. Aggregate Index	0.88	4.01
Median	1.24	4.58
Population	95	95

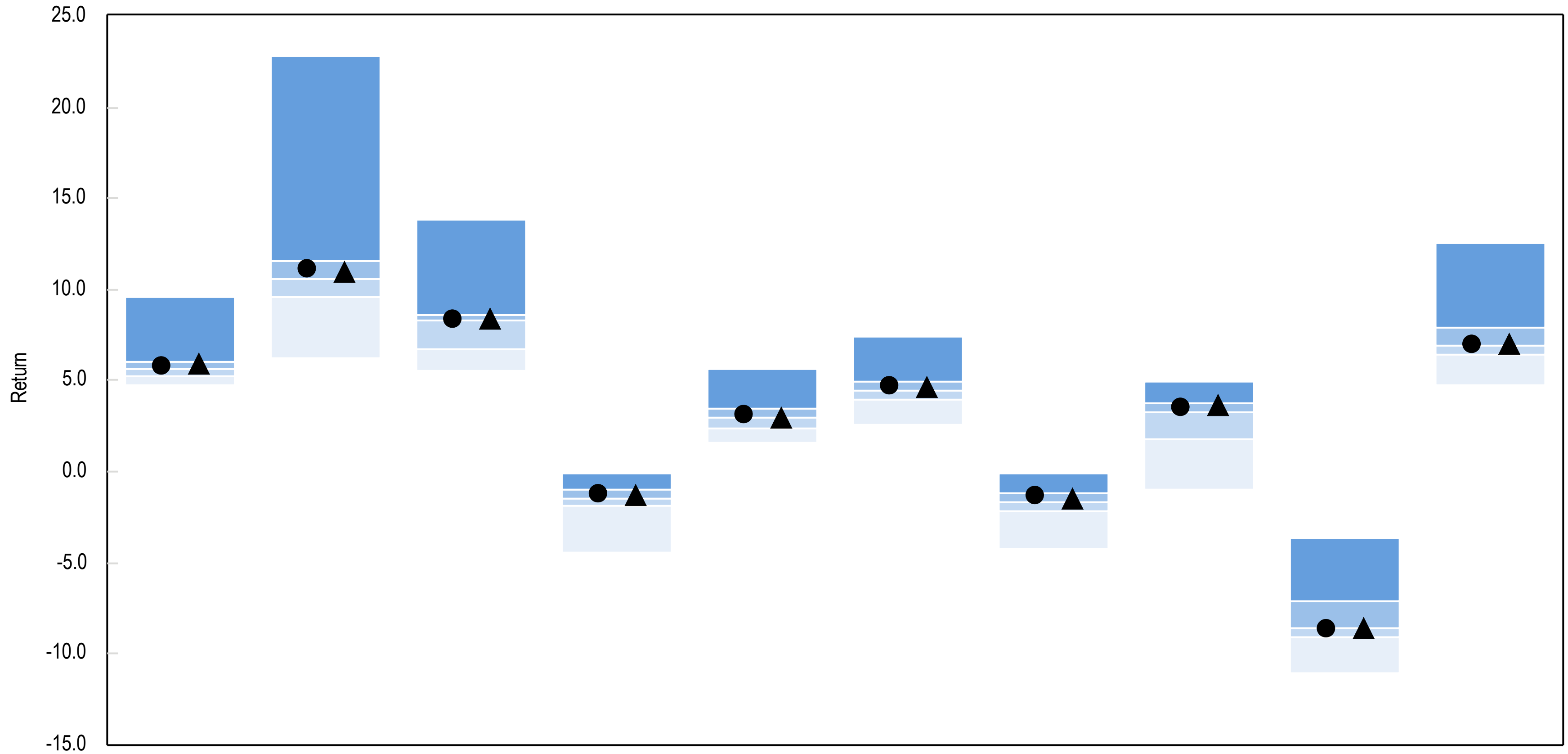

Rolling 3 Year Annualized Excess Performance
6.0
3.0
0.0
-3.0
-6.0
Relative Return (%)
3/18
6/18
9/18
12/18
3/19
6/19
9/19
12/19
3/20
6/20
9/20
12/20
3/21
6/21
9/21
12/21
3/22
6/22
Rolling 3 Years Excess Performance
Quarterly Outperformance
Quarterly Underperformance


Rolling 5 Year Annualized Excess Performance
6.0
3.0
0.0
-3.0
-6.0
Relative Return (%)
3/20
6/20
9/20
12/20
3/21
6/21
9/21
12/21
3/22
6/22
Rolling 5 Years Excess Performance
Quarterly Outperformance
Quarterly Underperformance

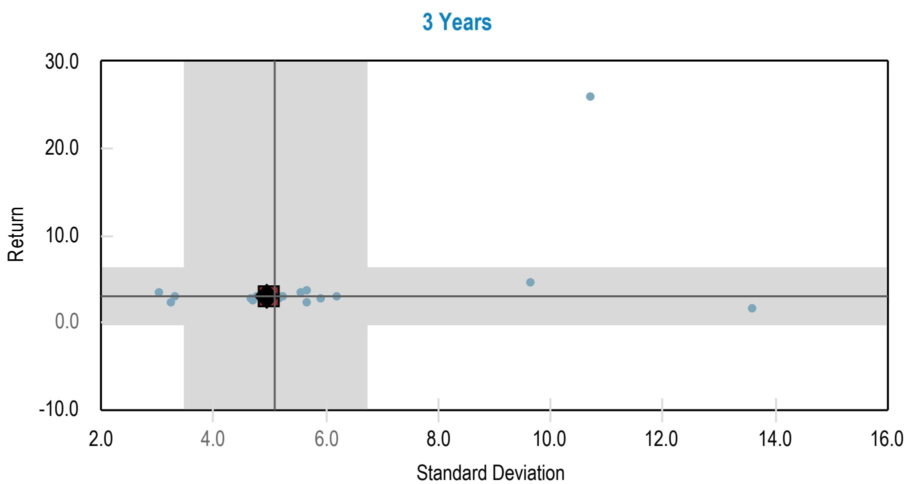


	Quarter	YTD	Fiscal YTD	1 Year	3 Years	5 Years	7 Years	10 Years
● BlackRock US TIPS	-6.11 (58)	-8.91 (61)	-5.19 (54)	-5.19 (54)	3.06 (48)	3.26 (31)	2.88 (30)	1.77 (35)
▲ Blmbg. U.S. TIPS	-6.08 (58)	-8.92 (63)	-5.14 (52)	-5.14 (52)	3.04 (51)	3.21 (37)	2.82 (40)	1.73 (39)
5th Percentile	-1.66	-2.45	-0.08	-0.08	4.70	3.72	3.52	3.43
1st Quartile	-3.73	-5.71	-3.07	-3.07	3.19	3.36	2.91	1.90
Median	-5.99	-8.70	-5.08	-5.08	3.05	3.13	2.71	1.64
3rd Quartile	-6.40	-9.05	-5.67	-5.67	2.74	2.93	2.39	1.45
95th Percentile	-6.84	-10.13	-6.68	-6.68	2.39	2.62	2.28	1.24
Population	24	24	23	23	23	22	22	19

BlackRock US TIPS vs. eV US TIPS / Inflation Fixed Inc

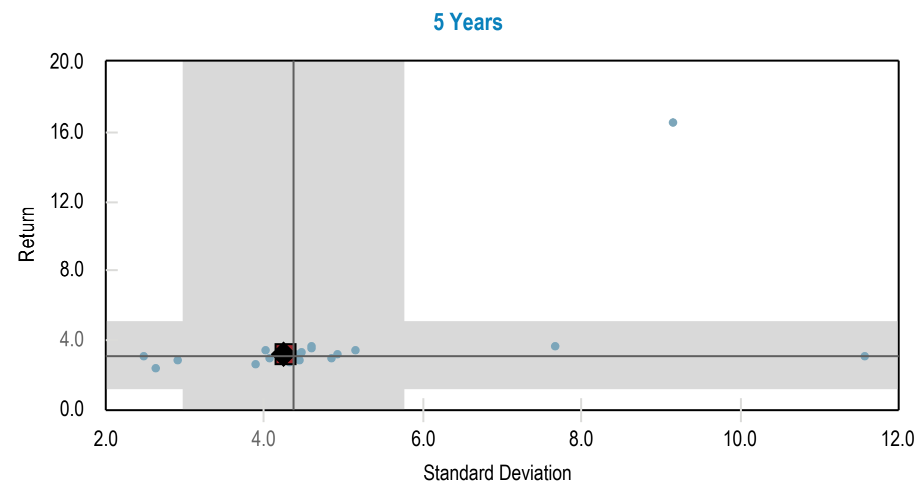


	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
● BlackRock US TIPS	5.86 (29)	11.15 (30)	8.46 (34)	-1.19 (36)	3.17 (41)	4.77 (33)	-1.31 (30)	3.56 (32)	-8.61 (51)	6.99 (48)
▲ Blmbg. U.S. TIPS	5.96 (26)	10.99 (37)	8.43 (34)	-1.26 (40)	3.01 (48)	4.68 (38)	-1.44 (33)	3.64 (31)	-8.61 (50)	6.98 (49)
5th Percentile	9.56	22.84	13.88	-0.06	5.68	7.37	-0.09	4.97	-3.64	12.56
1st Quartile	6.03	11.54	8.60	-0.94	3.43	5.00	-1.19	3.79	-7.11	7.93
Median	5.60	10.60	8.30	-1.47	2.96	4.43	-1.64	3.23	-8.61	6.91
3rd Quartile	5.25	9.64	6.74	-1.88	2.40	3.93	-2.19	1.82	-9.06	6.38
95th Percentile	4.80	6.19	5.52	-4.40	1.60	2.56	-4.19	-0.95	-11.04	4.72
Population	28	28	30	35	37	41	43	46	48	47



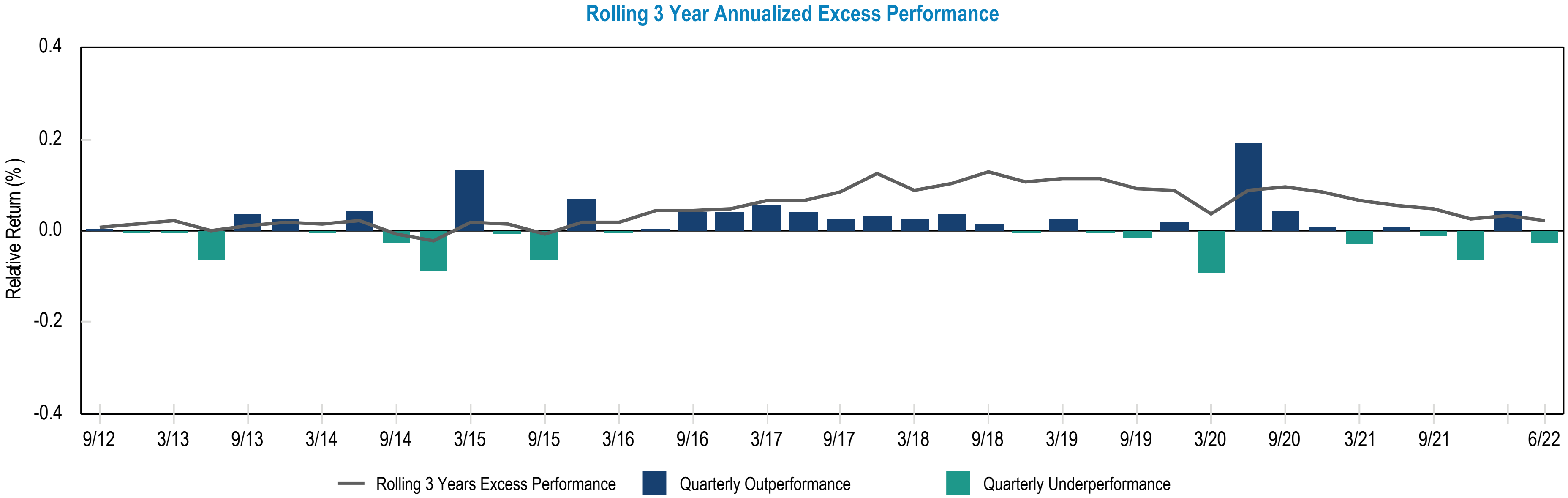
eV US TIPS / Inflation Fixed Inc

	Return	Standard Deviation
BlackRock US TIPS	3.06	4.98
Blmbg. U.S. TIPS	3.04	4.94
Median	3.05	5.10
Population	23	23



eV US TIPS / Inflation Fixed Inc

	Return	Standard Deviation
BlackRock US TIPS	3.26	4.28
Blmbg. U.S. TIPS	3.21	4.25
Median	3.13	4.36
Population	22	22


Rolling 3 Year Annualized Excess Performance
0.4
0.2
0.0
-0.2
-0.4
Relative Return (%)
9/12
3/13
9/13
3/14
9/14
3/15
9/15
3/16
9/16
3/17
9/17
3/18
9/18
3/19
9/19
3/20
9/20
3/21
9/21
6/22
Rolling 3 Years Excess Performance
Quarterly Outperformance
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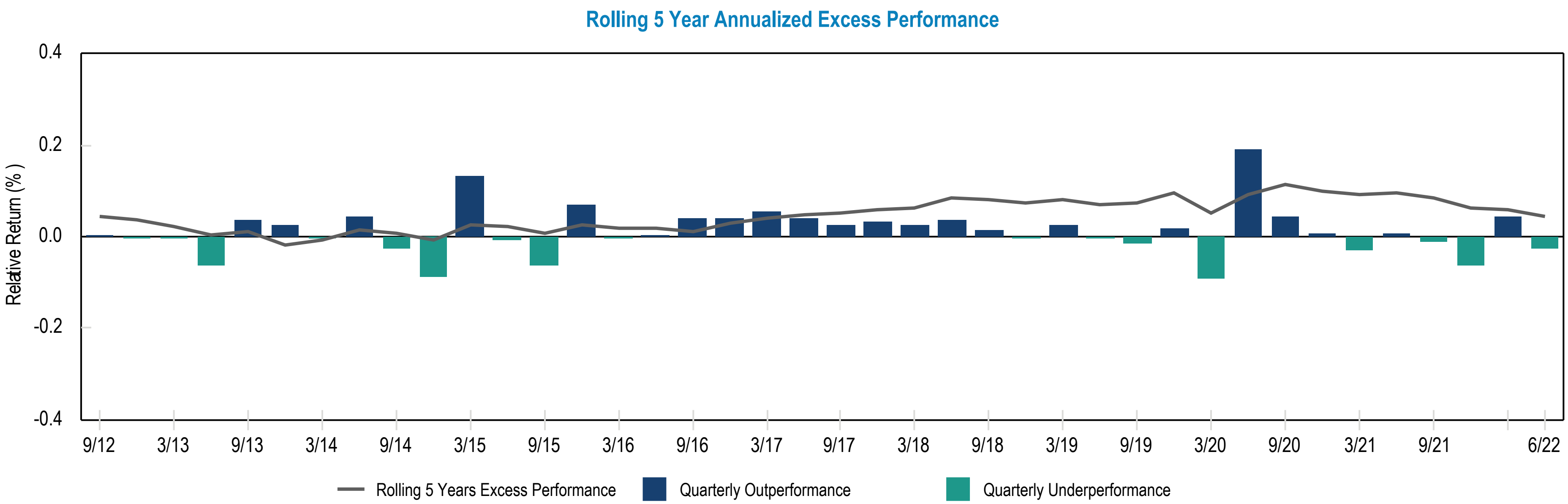
Rolling 5 Year Annualized Excess Performance
0.4
0.2
0.0
-0.2
-0.4
Relative Return (%)
9/12
3/13
9/13
3/14
9/14
3/15
9/15
3/16
9/16
3/17
9/17
3/18
9/18
3/19
9/19
3/20
9/20
3/21
9/21
6/22
Rolling 5 Years Excess Performance
Quarterly Outperformance
Quarterly Underperformance

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2021	2020	2019	2018	2017
Total Real Estate	**127,679,497**	**100.0**	**4.4**	**11.5**	**24.1**	**24.1**	**11.4**	**9.5**	**10.0**	**18.4**	**2.1**	**5.7**	**7.5**	**5.8**
NCREIF Property Index			*3.2*	*8.7*	*21.5*	*21.5*	*10.2*	*8.9*	*9.7*	*17.7*	*1.6*	*6.4*	*6.7*	*7.0*
NCREIF ODCE			*4.8*	*12.5*	*29.5*	*29.5*	*12.7*	*10.2*	*10.3*	*22.2*	*1.2*	*5.3*	*7.1*	*7.0*
ASB Real Estate	31,743,731	24.9	4.5	12.8	22.9	22.9	9.4	8.0	-	14.2	1.5	3.0	6.6	4.0
NCREIF Property Index			*3.2*	*8.7*	*21.5*	*21.5*	*10.2*	*8.9*	-	*17.7*	*1.6*	*6.4*	*6.7*	*7.0*
NCREIF ODCE			*4.8*	*12.5*	*29.5*	*29.5*	*12.7*	*10.2*	-	*22.2*	*1.2*	*5.3*	*7.1*	*7.0*
Clarion Lion	36,130,468	28.3	7.3	14.9	31.5	31.5	14.6	11.8	11.6	23.6	2.3	6.8	8.6	7.9
NCREIF Property Index			*3.2*	*8.7*	*21.5*	*21.5*	*10.2*	*8.9*	*9.7*	*17.7*	*1.6*	*6.4*	*6.7*	*7.0*
NCREIF ODCE			*4.8*	*12.5*	*29.5*	*29.5*	*12.7*	*10.2*	*10.3*	*22.2*	*1.2*	*5.3*	*7.1*	*7.0*
ARA American Strategic Value Realty	57,843,717	45.3	2.8	9.1	21.4	21.4	11.2	-	-	18.6	2.4	7.8	-	-
NCREIF Property Index +2%			*3.7*	*9.8*	*23.9*	*23.9*	*12.4*	-	-	*20.0*	*3.6*	*8.5*	*8.9*	-
NCREIF ODCE +2%			*5.3*	*13.6*	*32.1*	*32.1*	*14.9*	-	-	*24.6*	*3.2*	*7.4*	*8.9*	-
1221 State St. Corp	1,961,582	1.5	0.0	0.0	0.0	0.0	2.6	1.5	2.4	0.0	0.0	7.9	0.0	0.0

ASB Real Esatte market value as of 06/30/2022.

Performance Return Calculations

Performance is calculated using Modified Dietz and for time periods with large cash flow (generally greater than 10% of portfolio value), Time Weighted Rates of Return (TWRR) methodologies. Monthly returns are geometrically linked and annualized for periods longer than one year.

Data Source

Verus is an independent third party consulting firm and calculates returns from best source book of record data. Returns calculated by Verus may deviate from those shown by the manager in part, but not limited to, differences in prices and market values reported by the custodian and manager, as well as significant cash flows into or out of an account. It is the responsibility of the manager and custodian to provide insight into the pricing methodologies and any difference in valuation.

Illiquid Alternatives

Due to the inability to receive final valuation prior to report production, closed end funds (including but are not limited to Real Estate, Hedge Funds, Private Equity, and Private Credit) performance is typically reported at a one-quarter lag. Valuation is reported at a one-quarter lag, adjusted for current quarter flow (cash flows are captured real time). Closed end fund performance is calculated using a time-weighted return methodology consistent with all portfolio and total fund performance calculations. For Private Markets, performance reports also include Verus-calculated multiples based on flows and valuations (e.g. DPI and TVPI) and manager-provided IRRs.

Manager Line Up

Manager	Inception Date	Data Source	Manager	Inception Date	Data Source
BlackRock Russell 3000	12/10/2015	J.P. Morgan	1221 State Street Corp	9/30/2008	ICERS/Union Bank
BlackRock International Equity	7/3/2003	J.P. Morgan	Cash	-	J.P. Morgan
DFA Emerging Markets Value	1/11/2007	J.P. Morgan	HarbourVest IX-Buyout	2011[1]	HarbourVest
Harding Loevner	7/5/2016	Harding Loevner	HarbourVest IX-Credit	2011[1]	HarbourVest
Bradford & Marzec Fixed (Tortoise Capital)	12/1/1992	J.P. Morgan	HarbourVest International VI	2008[1]	HarbourVest
MacKay Shields Core Plus Ops	3/2/2015	CITCO	Harbourvest IX-Venture	2011[1]	HarbourVest
BlackRock US TIPS	4/11/2007	J.P. Morgan	Harbourvest 2017 Global	2017[1]	HarbourVest
ASB Real Estate	12/31/2012	ASB Real Estate	Harbourvest 2018 Global	2018[1]	HarbourVest
Clarion Lion	12/31/2006	Clarion Lion	Harbourvest 2019 Global	2019[1]	HarbourVest
Portfolio Advisors	10/31/2017	Portfolio Advisors	KKR Mezzanine	2010[1]	KKR
TSSP Adjacent Opportunities Partners	4/16/2020	Sixth Street	PIMCO BRAVO	2011[1]	PIMCO
Sixth Street Diversified Credit	5/29/2020	Sixth Street	ARA American Strategic Value Realty	01/04/2018	ARA

[1]Represents fund vintage year.

Policy & Custom Index Composition

Policy Index (8/1/2020- Current)	33% Russell 3000, 20% MSCI ACWI ex USA Gross, 29% Bloomberg Aggregate, 10% NCREIF Property, 5% Private Equity Benchmark, 3% Private Credit Benchmark.
Policy Index (1/1/2020-7/31/2020)	29% Russell 3000, 24% MSCI ACWI ex USA Gross, 27% Bloomberg Aggregate, 10% NCREIF Property,1% Russell 3000, 2% Bloomberg Aggregate, 4% Private Equity Benchmark, 3% Private Credit Benchmark.
Policy Index (10/1/2018-12/31/2019)	29% Russell 3000, 24% MSCI ACWI ex USA Gross, 27% Bloomberg Aggregate, 10% NCREIF Property, 5% Russell 3000 +3% (Lagged), 5% Bloomberg High Yield +2% (Lagged).
Policy Index (10/1/2016-9/30/2018)	29% Russell 3000, 24% MSCI ACWI ex USA Gross, 27% Bloomberg Aggregate, 5% NCREIF Property, 5% NCREIF Property +2%, 5% Russell 3000 +3% (Lagged), 5% Bloomberg High Yield +2% (Lagged).
Policy Index (7/1/2014-9/30/2016)	29% Russell 3000, 25% MSCI ACWI ex-US (Gross), 30% Barclays U.S. Aggregate, 6% NCREIF Property Index, 5% Bloomberg Commodity Index, 5% Russell 3000 +3% (Lagged).

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.

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