





PERIOD ENDING: JUNE 30, 2020

Investment Performance Review for

Imperial County Employees' Retirement System

Table of Contents



VERUSINVESTMENTS.COM

SEATTLE 206-622-3700 LOS ANGELES 300-297-1777 SAN FRANCISCO 415-362-3484 PITTSBURGH 412-784-6678

Investment Landscape	TABI
Investment Performance	TAB II
Review	



Recent Verus research

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

Annual outlooks

2020 REAL ASSETS OUTLOOK

The ongoing impact of COVID-19 on the global economy has dramatically altered our outlook on inflation, risk and asset class returns. Going into 2020, valuations for many risk assets were rich and expected returns were low. In a matter of weeks, we've seen a broad market sell-off, improving valuations.

- A combination of poor performance, high volatility and ESG-related concerns are driving a shift in investor preference within real assets.
- The shutdowns of economies around the globe will likely have lasting impacts and create some stress and distress for affected assets and those with highly levered capital structures.
- Negative impacts in real estate will likely take several quarters to flow through the appraisal cycle on the private side, creating challenges for existing assets and opportunities for fresh capital.

Topics of interest

BROADENING DIVERSITY CONSIDERATION

CIO Ian Toner, CFA, and Public Markets
Managing Director Marianne Feeley, CFA,
outline broader elements of diversity –
beyond ownership – that may be used to
characterize the demographic qualities of an
investment firm. It frames the broader
approach to understanding diversity that we
are adapting at Verus, which is an integral
part of our process of collecting and using
information about investment managers.

STRATEGIC LIQUIDITY

An analysis of illiquid allocations across a universe of portfolios suggests that institution type and size may be the determining factors in how much capital is allocated to illiquid assets. We believe illiquid allocations should be based on the financial situation of the institution. Verus has developed a framework to analyze the impact illiquid asset programs have on the overall portfolio.

Sound thinking

KNOWING WHERE YOU'RE GOING MATTERS

CIO Ian Toner, CFA, and Public Markets Managing Director Marianne Feeley, CFA, outline broader elements of diversity – beyond ownership – that may be used to characterize the demographic qualities of an investment firm. It frames the broader approach to understanding diversity that we are adapting at Verus, which is an integral part of our process of collecting and using information about investment managers.

Table of contents



VERUSINVESTMENTS.COM

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

Economic environment	6
Fixed income rates & credit	22
Equity	27
Other assets	38
Appendix	41

2nd quarter summary

THE ECONOMIC CLIMATE

- U.S. GDP grew at a -9.5% rate year-over-year in Q2 (-32.9% quarterly annualized rate). The contraction consisted of decreased consumer spending, exports, inventory investment, fixed investment, as well as state and local government expenditures. Federal government spending partly offset the slowdown. p. 11
- The U.S. labor market experienced a historic shock in Q2, as unemployment jumped from 4.4% in March to 14.7% in April, then recovered partially to 11.1% in June. Recent labor market data have beat expectations materially, but the severity of the shock is notable. A majority of the unemployed have reported their job losses as temporary. It will be important to watch what portion of these losses are indeed temporary rather than permanent. p. 13

PORTFOLIO IMPACTS

- Most major equity benchmarks are within 15% of all-time highs, despite major damage that COVID-19 has inflicted on the global economy. Some of this damage has been mitigated by government support, but some damage is likely yet to be felt. p. 28
- U.S. core inflation fell steeply from 2.1% in March to 1.2% in June, while food prices have risen. COVID-19 has led to a significant rise in at-home meal preparation (greater demand for certain items), while reportedly negatively impacting food processing facilities (less supply). p. 12

THE INVESTMENT CLIMATE

- The Federal Reserve continued to roll out the litany of support programs that were announced in the first quarter.
 The Fed's balance sheet grew from \$5.3 trillion to \$7.1 trillion over the second quarter. p. 23
- Moves in the CBOE VIX Index moderated in June. The longterm average of the index is near 19. It has remained above that level since February, reaching a high point of 85 on March 18th, and closing June at 30. p. 36
- The Fed expanded the list of eligible securities for purchase to include corporate debt. While the Fed will primarily target investment grade debt securities, it will also buy some non-investment grade debt from "fallen angels" which were investment-grade prior to the pandemic. p. 23

ASSET ALLOCATION ISSUES

- U.S. equities delivered an incredible comeback, following a sudden and significant sell-off in March. The S&P 500 rallied +20.5% in the second quarter, bringing year-to-date performance to -3.1%, and positive +7.5% over the past twelve months. *p. 30*
- The U.S. dollar weakened in Q2, falling -2.3%. The market recovery (less demand for safe-haven currencies) and materially lower U.S. interest rates (less attractive U.S. dollar) have likely contributed to depreciation. p. 39

A mildly underweight risk stance appears appropriate in today's environment

We remain watchful of the COVID-19 second wave and its impact on economic reopening



What drove the market in Q2?

"The second wave of coronavirus: How bad will it be as lockdowns ease?"

U.S. DAILY NEW CONFIRMED COVID-19 CASES

1/31	2/29	3/31	4/30	5/31	6/30
2	8	26,169	29,419	19,665	45,596

Article Source: The Philadelphia Inquirer, May 6th, 2020

"Early results from Moderna coronavirus vaccine trial show participants developed antibodies against the virus"

MODERNA U.S. EQUITY SHARE PRICE

1/31	2/29	3/31	4/30	5/31	6/30
\$20.51	\$25.93	\$29.95	\$45.99	\$61.50	\$64.21

Article Source: CNN, May 18th, 2020

"Nasdaq erases losses for 2020 as mega-cap tech rallies offset coronavirus drag"

NASDAQ COMPOSITE INDEX TOTAL RETURN MINUS S&P 500 TOTAL RETURN

Jan	Feb	Mar	Apr	May	Jun
+2.1%	+2.0%	+2.3%	+2.7%	+2.1%	+4.1%

Article Source: Business Insider, May 7th, 2020

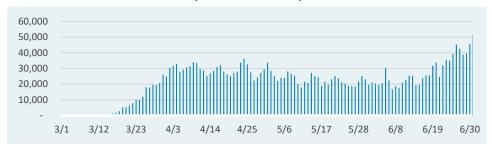
"How China's national security law could change Hong Kong forever"

HONG KONG VISITOR ARRIVALS (YEAR OVER YEAR CHANGE)

Dec	Jan	Feb	Mar	Apr	May
-51.5%	-52.7%	-96.4%	-98.6%	-99.9%	-99.9%

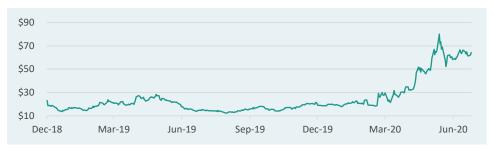
Article Source: CNBC, July 1st, 2020

DAILY NEW COVID-19 CASES (UNITED STATES)



Source: Bloomberg, as of 6/30/20

MODERNA INC. SHARE PRICE



Source: Bloomberg, as of 6/30/20

U.S. EQUITY INDEX PERFORMANCE (INDEXED 12/31/2019=100)



Source: NASDAQ, Standard and Poor's, FTSE Russell, Bloomberg, as of 6/30/20



Economic environment



U.S. economics summary

- U.S. GDP grew at a -9.5% rate year-over-year in Q2 (-32.9% quarterly annualized rate). The contraction consisted of decreased consumer spending, exports, inventory investment, fixed investment, as well as state and local government expenditures. Federal government spending partly offset the slowdown.
- As of June 29th there were 34
 states with a transmission rate of
 COVID-19 above 1.0, an indication
 that the virus continues to spread
 exponentially. Southern states and
 Sun Belt states are in retreat—
 taking lockdown steps reminiscent
 of March and April—only weeks
 after governors began to reopen
 their economies.
- The U.S. labor market experienced a historic shock in Q2 as unemployment jumped from 4.4% in March to 14.7% in April, then recovered partially to 11.1% in June.

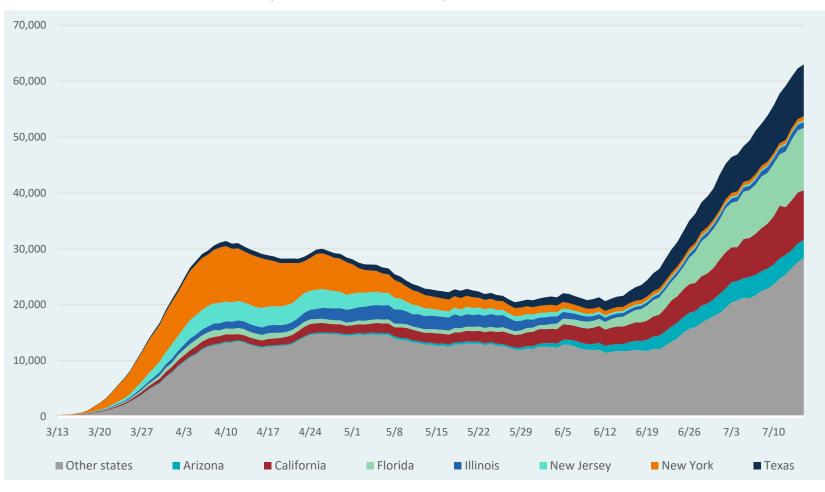
- U.S. core inflation exhibited a steep drop from 2.1% in March to 1.2% in June. Headline inflation also slowed from 1.5% to 0.6%, pushed lower by the recent decline in energy prices. On the other hand, food prices have been rising specifically meats, poultry, fish and eggs—due in large part to interruptions at processing plants.
- The Bloomberg Consumer Comfort Index experienced a dramatic weakening year-to-date, falling from a near-record high of 67.3 in late January to 34.7 in May, then ending June at 43.3.
- It has been reported that 8.6% of all mortgages in the U.S. are in forbearance. To put this number into perspective, during the 2008-2009 housing crisis the mortgage default rate reached approximately 10%. If a large portion of loans in forbearance later face foreclosure, this could put significant pressure on the housing market.

	Most Recent	12 Months Prior
GDP (YoY)	(9.5%) 6/30/20	2.0% 6/30/19
Inflation (CPI YoY, Core)	1.2% 5/31/20	2.0% 5/31/19
Expected Inflation (5yr-5yr forward)	1.5% 6/30/20	1.8% 6/30/19
Fed Funds Target Range	0% – 0.25% 6/30/20	2.25% – 2.50% 6/30/19
10 Year Rate	0.7% 6/30/20	2.0% 6/30/19
U-3 Unemployment	11.1% 6/30/20	3.7% 6/30/19
U-6 Unemployment	18.0% 6/30/20	7.2% 6/30/19



COVID-19 update

U.S. DAILY NEW CASES DECOMPOSITION (7-DAY TRAILING AVERAGE)



Toward the end of June, daily case growth began to indicate the emergence of a second wave of COVID-19

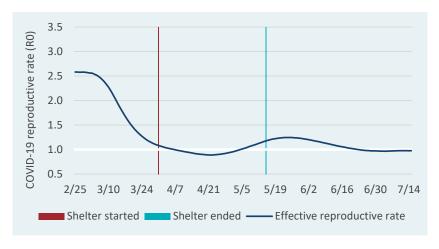
Most of the resurgence has occurred across a small group of U.S. states

Source: Bloomberg, as of 7/15/20

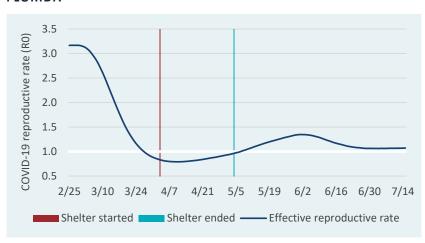


Reproductive rates (R0) by state hot spot

ARIZONA

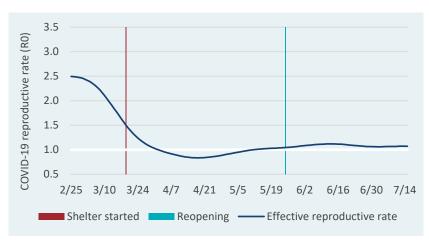


FLORIDA

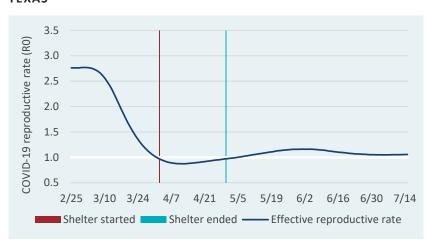


In many states around the country, resurgences in R0 rates above 1.0 began prior to the formal ending of shelter-inplace orders

CALIFORNIA



TEXAS

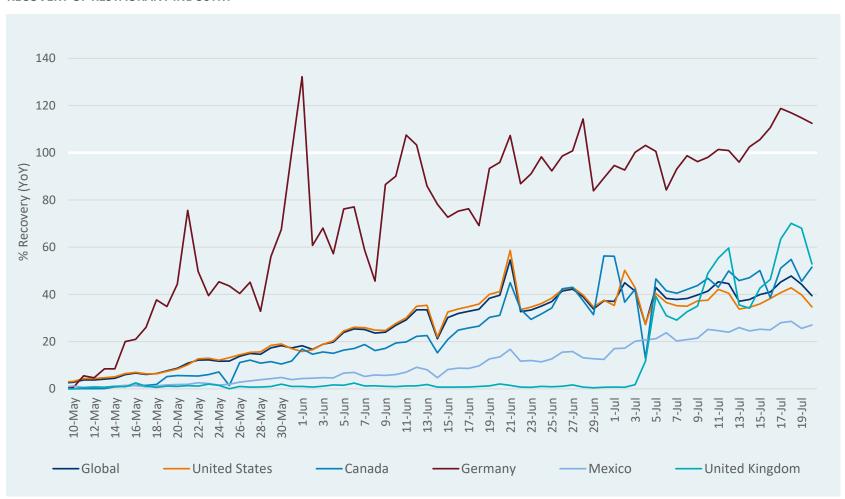


Source: rt.live, as of 7/15/20. The RO rate represents the average number of additional people each infected person will transmit the virus to. RO rates below 1.0 indicate the virus will decline and eventually die out.



Restaurants reopening

RECOVERY OF RESTAURANT INDUSTRY



Restaurant activity recovered notably from May through June, but remains far below prepandemic levels

Source: OpenTable, as of 7/20/20 – Number of meals served for a given week relative to the same week of the prior year



GDP growth

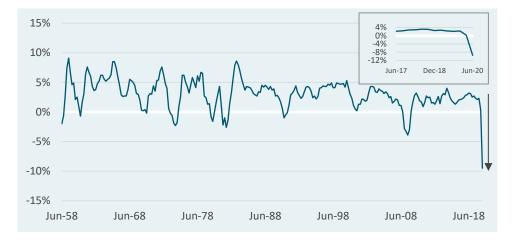
U.S. GDP grew at a -9.5% rate year-over-year in Q2 (-32.9% quarterly annualized rate). The contraction consisted of decreased consumer spending, exports, inventory investment, fixed investment, as well as state and local government expenditures. Federal government spending partly offset the slowdown.

The United States runs a significant trade deficit, and imports far more than it exports in U.S. dollar terms. As a result, the slowdown in global trade in the second quarter provided a tailwind for GDP growth as exports fell less in nominal terms than imports, leading to a reduction in the size of the trade deficit. Additionally, the recent inventory

drawdowns may leave room for inventory builds to contribute positively to GDP growth in the coming quarters. Still, consumption accounts for roughly 70% of GDP. The financial health of the consumer and the willingness of the consumer to spend will likely determine the shape of the recovery over the remainder of the year.

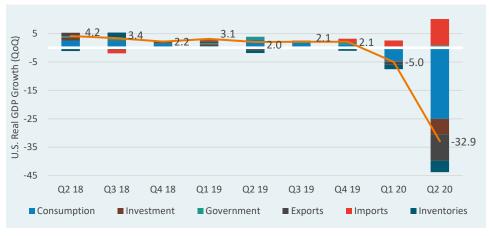
Thus far, fiscal support through the CARES Act and other packages have amounted to roughly 12% of U.S. GDP. Only Japan (42%) has spent more as a percentage of GDP. Moving forward into Q3, the ability and willingness of Congress to provide further accommodation will feature prominently in discussions around the economic outlook.

U.S. REAL GDP GROWTH (YOY)



Source: Bloomberg, as of 6/30/20

U.S. GDP GROWTH ATTRIBUTION



Source: BEA, annualized quarterly rate, as of 6/30/20



Inflation

U.S. core inflation exhibited a steep drop from 2.1% in March to 1.2% in June. Headline inflation also slowed from 1.5% to 0.6%, pushed lower by the recent decline in energy prices. On the other hand, food prices have been increasing—specifically meats, poultry, fish and eggs. COVID-19 has led to a significant rise in at-home meal preparation (greater demand for certain items), while reportedly interrupting food processing plants (less supply). Both effects may be contributing to recent price increases.

The 10yr U.S. TIPS inflation breakeven rate recovered to 1.3%

from a low of 0.5% on March 19th. The breakeven rate is at a level not seen since 2016 at the depths of an oil crash that sparked broad fears of deflation.

Interestingly, consumer inflation surveys indicate that expectations jumped significantly from 2.1% in April to 3.0% in June. Investors have engaged in an ongoing debate regarding the possible direction of inflation throughout the economic recovery. There seem to be reasonable arguments for inflationary pressures, but also for deflationary pressures, as a result of the COVID-19 induced economic slowdown.

U.S. CPI (YOY)



Source: Bloomberg, as of 6/30/20

CONSUMER INFLATION EXPECTATIONS



Source: University of Michigan, as of 6/30/20

BREAKEVEN INFLATION RATES



Source: Bloomberg, as of 6/30/20



Labor market

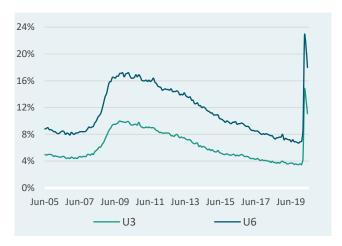
The U.S. labor market experienced a historic shock in Q2, as unemployment jumped from 4.4% in March to 14.7% in April, before recovering partially to 11.1% in June. However, many workers were not present at work but remained categorized as employed. If these workers were instead counted as jobless, the true unemployment rate may have reached 20% before recovering to around 12%. Although recent labor market data has generally beat expectations by a wide margin, the severity of the shock and current magnitude of dislocation is notable. Most of the unemployed have reported their joblessness to be temporary and believe that their employer will be calling them back to work.

It will be important to watch what portion of job losses are indeed temporary, and what portion end up being more permanent in nature.

Churn within the labor market has remained extremely elevated as businesses have contended with the constantly-evolving COVID-19 situation and its impacts on mandated social distancing controls. Additionally, some employers have decided to remain closed until the end of July to allow their employees the flexibility to receive an additional \$600 in weekly unemployment benefits set to expire on July 31st.

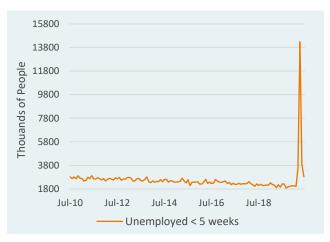
U.S. labor market experienced the largest negative shock in modern history

U.S. UNEMPLOYMENT



Source: FRED, as of 6/30/20

U.S. UNEMPLOYMENT DURATION



Source: U.S. Bureau of Labor Statistics, as of 6/30/20

U.S. LABOR MARKET CHURN

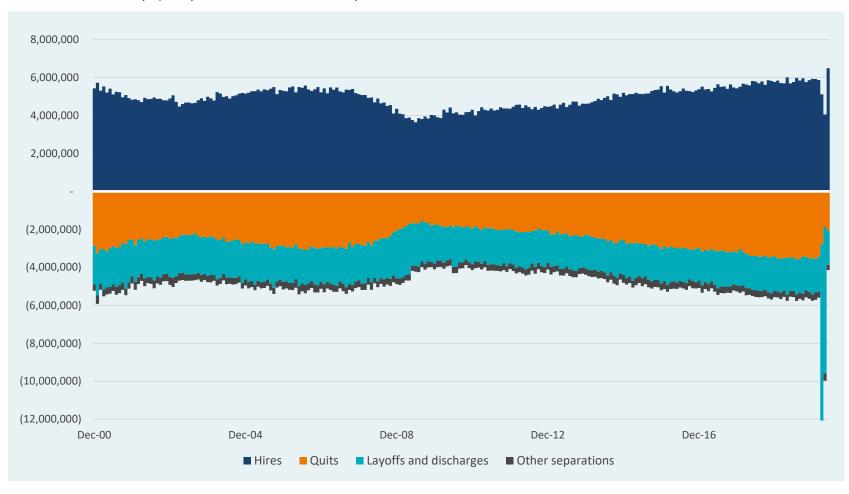


Source: BLS, as of 5/31/20 – Chart illustrates the total number of U.S. workers departing work and starting new work



Labor market churn

MONTHLY JOB HIRES, QUITS, LAYOFFS & DISCHARGES, AND OTHER SEPARATIONS LEVELS



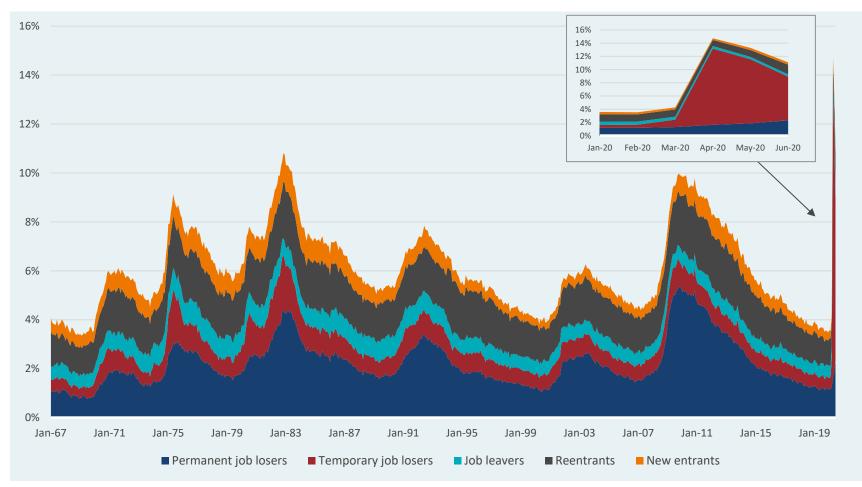
While voluntary separations (quits) have slowed, both hires and involuntary separations have spiked to record levels

Source: BLS, as of 5/31/20



Permanent job losses are increasing...

U-3 UNEMPLOYMENT RATE - CONTRIBUTION BY COHORT



Many temporarily unemployed workers have gone back to work

Some temporary job losses have become permanent, while many unemployed have reignited their job search

Source: BLS, as of 6/30/20



The consumer

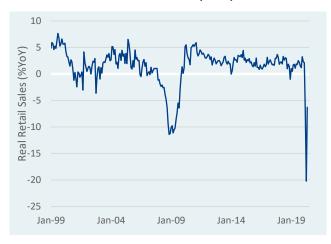
The U.S. consumer has been the greatest support to moderate domestic economic growth in recent years. Consumers have also shown conservatism in their spending habits and restraint in the use of credit, with household balance sheets remaining robust. The economic slowdown resulted in a severe drop in spending—a drop-off in fact nearly double the size of the contraction experienced during the 2008-2009 Global Financial Crisis.

Between February and May, revolving U.S. consumer credit outstanding shrunk by about \$104 billion to \$996 billion, indicating that American consumers have been paying down

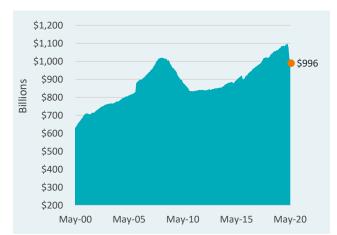
their credit card debts significantly. Some of this deleveraging has been made possible by recent fiscal stimulus.

The U.S. personal savings rate reached 32% in April—the highest reading since its inception in the 1960s. The extreme conservativism shown recently has likely been fueled by uncertainty around job security, but also by a simple inability to spend as restaurants and businesses which typically are the recipients of discretionary spending have been forced to (or have willingly) closed their doors, and vacation plans have been delayed or canceled.

REAL RETAIL SALES GROWTH (YOY)



U.S. REVOLVING CREDIT OUTSTANDING



Source: Federal Reserve, as of 5/31/20

PERSONAL SAVINGS RATE



Source: FRED, as of 5/31/20

Source: FRED, as of 5/31/20

Sentiment

The Bloomberg Consumer Comfort Index attempts to gauge Americans' view on the economy, their personal financial situation, and buying conditions. The index experienced a dramatic weakening year-to-date, falling from a near-record high of 67.3 in late January to 34.7 in May, then ending June at 43.3.

The University of Michigan Consumer Sentiment Survey is similar in purpose to the Bloomberg index. The survey attempts to gauge attitudes about the business climate, personal finances, and spending conditions. This index also showed a significant weakening in Q2 which was comparable

in magnitude to past U.S. economic slowdowns, falling from 101.0 in February to 71.8 in April, before partially rebounding to 78.1 in June. The rebound was reportedly supported by gains in employment. Few survey respondents anticipated favorable economic conditions anytime soon.

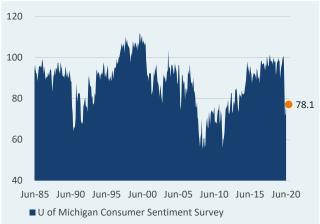
The Small Business Optimism Index has rebounded since the onset of COVID-19 and the subsequent economic slowdown. The index rose to 100.6, as many business owners reportedly expect sales to improve, remain optimistic about future business conditions, and generally expect the recession to be short-lived.

CONSUMER COMFORT



Source: Bloomberg, as of 6/30/20

CONSUMER SENTIMENT



Source: University of Michigan, as of 6/30/20

SMALL BUSINESS OPTIMISM



Source: NFIB, as of 6/30/20



Housing

Existing home sales slowed significantly in Q2, dropping -26.6% year-over-year in June. The 30-year fixed mortgage interest rate fell further, finishing the second quarter at 3.07%. Near record-low interest rates have likely boosted home demand, helping to mitigate the significant effects of the economic recession. Trends in the housing market are typically slower-moving and often lag economic downturns, which may mean the true impact of COVID-19 on the U.S. housing market has yet to be seen.

Under the new CARES Act, homeowners with federally-

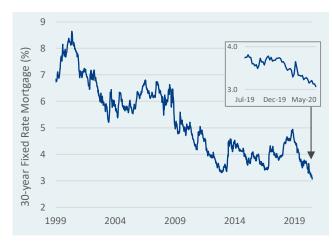
backed mortgages who have been affected by COVID-19 are able to request forbearance on mortgage payments for up to 180 days, with an option to extend for an additional 180 days. According to Black Knight, a mortgage data provider, 8.6% of all mortgages in the United States were in forbearance during late-June. To put this number into perspective, during the 2008-2009 housing crisis the mortgage default rate reached approximately 10%. If these loans in forbearance later face foreclosure, it could put significant pressure on the housing market.



MORTGAGE DEFAULT RATE (%)



30YR FIXED RATE MORTGAGE



Source: FRED, as of 3/31/20 Source: FRED, as of 6/30/20



Source: FRED, as of 5/31/20

International economics summary

- In Q1, most international economies began contracting in what will likely turn out to be a global recession. The steady and stable economic expansion in recent years has shifted suddenly with the onset of COVID-19. The IMF now expects 2020 global GDP to fall -4.9%, followed by a +5.4% recovery in 2021.
- Policymakers in Brussels achieved unanimous approval on a €750 billion stimulus package to help support an economic recovery within the European Union. After much debate, officials decided to distribute €390 billion in the form of grants to member states hardest hit by the pandemic (Italy/Spain), and the other €360 in low-interest, non-concessionary loans for members of the bloc.
- U.S.-China relations were further strained Q2. The Trump administration placed restrictions on U.S. exports to Hong Kong in response to a Chinese law which

- effectively tightens control over the territory. The restrictions apply to only 2.2% of U.S. exports, but sanctions on China could unravel an already fragile agreement between the two global powers. U.S.-China tensions have been escalating and will warrant close monitoring in the coming months.
- Headline consumer prices fell materially over the second quarter as spending at brick-and-mortar stores, restaurants, and bars weakened alongside the implementation of social distancing controls. Continued broad-based price declines could soon lead to deflation risks for many economies.
- Since hitting lows of -304.6 in early May, the Citi Eurozone Economic Surprise Index rallied back to -99.8, indicating that economic data have been improving relative to median economist estimates. Continued relative strengthening could be supportive to the equity market.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	(9.5%)	0.1%	11.1%
	6/30/20	5/31/20	6/30/20
Eurozone	(3.1%) 3/31/20	0.3% 6/30/20	7.4% 5/31/20
Japan	(1.7%) 3/31/20	0.3% 6/30/20	2.9% 5/31/20
BRICS	(4.1%)	4.9 % <i>3/31/20</i>	5.1%
Nations	3/31/20		3/31/20
Brazil	(0.3%)	1.9%	12.9%
	3/31/20	5/31/20	5/31/20
Russia	1.6%	2.9%	6.1%
	3/31/20	5/31/20	5/31/20
India	4.7 % 12/31/19	5.8% 3/31/20	8.5% 12/31/17
China	(6.8%)	2.4%	3.7%
	3/31/20	5/31/20	3/31/20



International economics

In the first quarter, most international economies began contracting, in what will likely turn out to be a global recession. The steady and stable economic expansion in recent years has shifted suddenly with the onset of COVID-19. The IMF now expects 2020 global GDP to fall -4.9%, followed by a +5.4% recovery in 2021.

Headline consumer prices fell internationally over Q2 as spending at brick-and-mortar stores, restaurants, and bars weakened alongside the implementation of social distancing controls. Continued broadbased price declines could soon lead to deflation risks for many economies. A large contributor to disinflation has been the recent sell-off in crude oil. The price of a barrel of Brent crude oil fell from

around \$80 per barrel at year-end to around \$30 per barrel at the end of Q1, and bottomed at \$22.90 on April 28th. Oil later recovered, due in part to certain economies beginning to gradually reopen, as well as price-supportive output cuts announced by OPEC+.

Policymakers in Brussels managed to achieve unanimous approval on a €750 billion stimulus package to help support an economic recovery within the European Union. After much debate, officials decided to distribute €390 billion in the form of grants to member states hardest hit by the pandemic (Italy/Spain), and the other €360 in low-interest, non-concessionary loans for members of the bloc.

REAL GDP GROWTH (YOY)



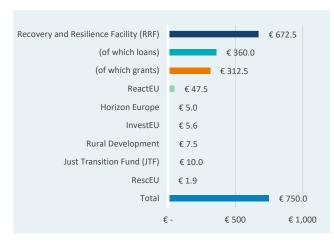
Source: Bloomberg, as of 6/30/20, or most recent release

INFLATION (CPI YOY)



Source: Bloomberg, inflation range of past 5 years, as of 5/31/20

E.U. STIMULUS PACKAGE (BILLIONS)



Source: European Council, as of 7/21/20



U.S.-China tensions escalating

January 15th – U.S. and China sign the Phase One Deal. Agreements include the rollback of recently applied tariffs, increased purchases of certain goods, greater intellectual property protection, and limited currency practices.

May 1st – The Trump Administration directs the Federal Retirement Thrift Investment Board, a retirement fund with over \$500 billion in assets, to halt its plans to invest in Chinese the contested Spratly Islands, and equities. The U.S. Labor Secretary explained that these investments would put American funds "in risky companies" that pose a threat to U.S. national securities."

July 14th – The U.S. Navy conducts a freedom of navigation operation near sends a guided missile destroyer into waters which China claims as its own.

January 31st – The U.S. implements a ban against all non-U.S. citizens who have visited China recently, amid COVID-19 fears.

June 30th – China passes a sweeping new Hong Kong national security law, effectively eliminating free speech and the right to protest, and eroding the sovereignty of the country. Under the new law, any talk or protesting for Hong Kong independence, or of anti-China sentiment, can result in imprisonment.

July 22nd – The U.S. orders China to close its consulate in Houston. Texas, "in order to protect American intellectual property and Americans' private information" said U.S. State Department spokeswoman Morgan Ortagus.

2019

2020

March 18th – China ousts American journalists from the country, including the Wall Street Journal, the New York Times, and the Washington Post. China adds new requirements that these companies must share details of their operations with the Chinese government.

October 9th – The U.S. Secretary of State announces visa restrictions against Chinese officials accused of human rights abuses of ethnic populations in the Xinjiang region, including "mass detentions in internment camps; pervasive, hightech surveillance; draconian controls on expressions of cultural and religious identities; and coercion of individuals to return from abroad to an often perilous fate in China."

May 15th - In a continued push to stop China's proliferation of its 5G technology, the U.S. Commerce Department amends export rules which cut off Huawei from global chip manufacturers that use American technology.

June 30th – The United States revokes its special trade status with Hong Kong—a move which signals that Hong Kong is no longer viewed as autonomous from China. All U.S. trade with Hong Kong will effectively be treated as trade with China.

> July 10th – President Trump comments that he is not focused on a Phase Two Trade Deal, and that the U.S. relationship with China has been "severely damaged" by the outbreak of COVID-19. The President continues his comments that China is at fault for failing to prevent the global spread of the virus.

> > July 13th – The U.S. announces new interpretations of China's recent claims in the South China Sea. "We are making clear: Beijing's claims to offshore resources across most of the South China Sea are completely unlawful, as is its campaign of bullying to control them." —Secretary of State Mike Pompeo



Fixed income rates & credit



Interest rate environment

- The Federal Reserve continued to roll out the litany of support programs it announced in the first quarter. The Fed's balance sheet grew from \$5.3 trillion to \$7.1 trillion over the second quarter.
- It appears the Federal Reserve may implement a yield curve control policy as a component of its policy toolkit. At the June Fed meeting, officials acknowledged that while setting intermediate-term yield caps may help strengthen short-term rate guidance, they remained concerned about several potential implications of beginning down that path.
- The Fed also expanded the list of eligible securities for purchase through its Primary and Secondary Market Credit Facilities to include corporate debt, either directly through companies or through exchange-traded funds. The Fed indicated that it would primarily target investment grade debt securities, and that it would also purchase certain non-investment

- grade debt from "fallen angels" which held investment-grade debt ratings prior to the pandemic.
- The European Central Bank increased the size of its Pandemic Emergency Purchase Programme from the initial €750 billion to a total of €1.35 trillion. The ECB will now be able to deploy the funds in a "flexible manner over time, across asset classes and among jurisdictions" through June 2021, which may help reduce borrowing costs.
- Real yields continued to decline around the globe as nominal sovereign bond yields were largely unchanged and longer-term inflation expectations recovered.
- Emerging market debt yields fell considerably in the second quarter, likely supported by disinflationary effects of the sell-off in commodities which emboldened central bankers to adopt more accommodative policy.

Area	Short Term (3M)	10-Year
United States	0.13%	0.66%
Germany	(0.56%)	(0.46%)
France	(0.52%)	(0.11%)
Spain	(0.49%)	0.46%
Italy	(0.29%)	1.26%
Greece	0.32%	1.20%
U.K.	0.01%	0.17%
Japan	(0.17%)	0.02%
Australia	0.21%	0.87%
China	1.74%	2.84%
Brazil	2.04%	6.83%
Russia	4.57%	5.92%

Source: Bloomberg, as of 6/30/20

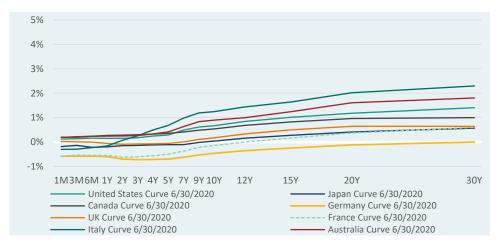


Yield environment

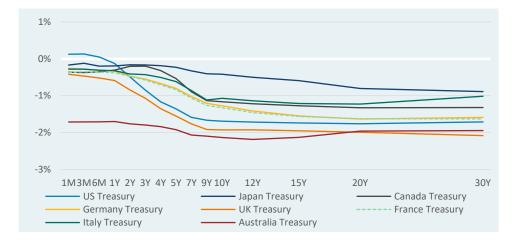
U.S. YIELD CURVE



GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 6/30/20



Credit environment

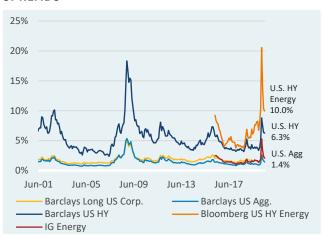
Despite historically weak economic data releases throughout Q2, a significant degree of confidence and liquidity was restored to credit markets due to continued support from the Federal Reserve, which ended the quarter with nearly \$10 billion in corporate debt on its balance sheet. Accordingly, credit markets displayed a dramatic recovery, with some of the worst performing sectors of Q1 leading the rebound. High yield and leveraged loans returned 10.2% and 9.7%, respectively, while the broad U.S. Credit Index returned 8.2%. Within U.S. credit, longer-duration and lower-quality issues tended to perform best.

Credit spreads tightened across the board in Q2, as U.S. corporate investment grade tightened to 150 bps from 272 bps at the end

of the first quarter, and high yield spreads moved from 880 bps to 626 bps.

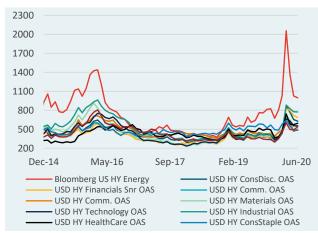
U.S. investment grade downgrades slowed dramatically in June, with only two issuers deteriorating to high yield status. This was down from three issuers in May, five issuers in April, and a peak of 10 issuers in March. So far in 2020, a majority of downgrades have come from the energy and automotive sectors, which have contributed 40% and 25% of total fallen angels, respectively.

SPREADS



Source: Barclays, Bloomberg, as of 6/30/20

HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 6/30/20

	Credit Spread (OAS)		
Market	6/30/20	6/30/19	
Long U.S. Corp	2.0%	1.6%	
U.S. Inv Grade Corp	1.5%	1.2%	
U.S. High Yield	6.3%	3.8%	
U.S. Bank Loans*	6.2%	4.4%	

Source: Barclays, Credit Suisse, Bloomberg, as of 6/30/20

*Discount margin (4-year life)



Default & issuance

The second quarter saw a broad upsurge in default activity with \$76.2 billion of defaults. This figure was only slightly below the \$76.6 billion worth of defaults seen in Q1 2009.

Through the first half of 2020, 60 companies defaulted which pushed the par-weighted U.S. high yield default rate to a 10-year high of 6.2%. The default rate of bank loans rose to 4.0% from 1.9% in Q1, remaining at a lower level than high yield largely due to less representation from the energy sector.

The energy sector continues to experience the greatest pain year-to-date, with 18 defaults/distressed transactions comprising 30% of the

\$106 billion total. The next hardest-hit sectors have been telecommunications (15.8%), cable & satellite (13.6%), and retail (10.4%).

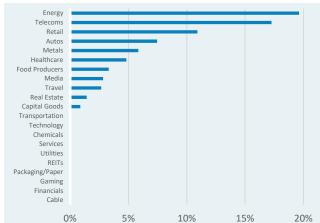
So far, 2020 has seen record issuance of investment grade and high yield bonds. Investment grade issuance peaked in April with \$284 billion of new issues, before falling back to a still elevated level of \$163 billion in June. Year-to-date net issuance of investment grade was \$781 billion, driven by a record \$1.2 trillion of new issuance. High yield has also seen aggressive new issuance, with \$218 billion over 330 new issues.

HY DEFAULT RATE (ROLLING 1-YEAR)



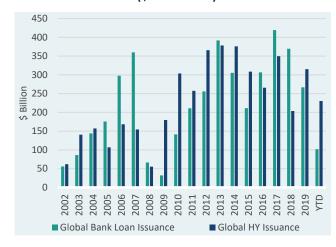
Source: BofA Merrill Lynch, as of 6/30/20

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



Source: BofA Merrill Lynch, as of 6/30/20 - par weighted

GLOBAL ISSUANCE (\$ BILLIONS)



Source: Bloomberg, BofA Merrill Lynch, as of 6/30/20



Equity



Equity environment

- U.S. equities delivered an incredible comeback, following the sudden sell-off in March. The S&P 500 rallied +20.5% in Q2, bringing year-to-date performance to -3.1%, and positive +7.5% over the past twelve months. International developed equities (MSCI EAFE +12.9% QTD, -5.1% YoY) and emerging market equities (MSCI EM +18.1% QTD, -3.4% YoY) lagged the domestic market.
- Most major equity benchmarks are within 15% of all-time highs, despite major damage that COVID-19 has inflicted on the global economy. Some of this damage has been mitigated by government support, but some damage is likely yet to be felt.
- According to FactSet, the estimated S&P 500 year-over-year decline in earnings for Q2 is -43.8%. This would mark the largest decline in earnings since Q4 2008 (-69.1%).

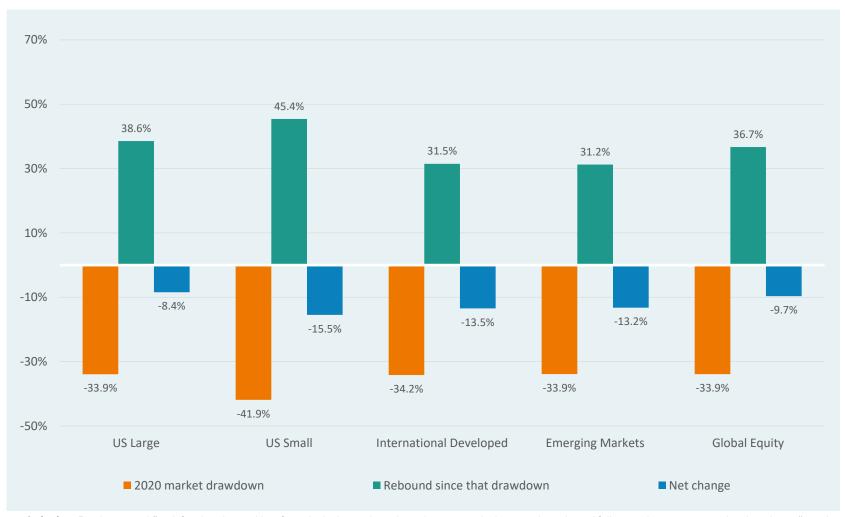
- Moves in the CBOE VIX Index moderated in June. The long-term average of the index is near 19. It has remained above that level since February, reaching a high point of 85.0 on March 18th, and closing June at 30.4.
- The U.S. dollar weakened in Q2, falling -2.3% according to the Bloomberg Dollar Spot Index. The market recovery (less demand for save-haven currencies) and materially lower U.S. interest rates (less attractive U.S. Dollar) have likely contributed to the move.
- Growth stocks beat value stocks for the ninth consecutive month. The Russell 1000 Growth Index (+27.8%) outperformed the Russell 1000 Value Index (+14.3%). Sector performance disparity continues to impact the behavior of value. While energy delivered outsized returns relative to the overall index, other value-tilted sectors such as utilities and financials delivered poor performance.

	QTD TOTAL RETURN		1 YEAR TOT	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (S&P 500)	20.	5%	7.5	5%
US Small Cap (Russell 2000)	25.	4%	(6.6	5%)
US Large Value (Russell 1000 Value)	14.	3%	3.8)	3%)
US Large Growth (Russell 1000 Growth)	27.8%		23.3%	
International Large (MSCI EAFE)	14.9%	12.9%	(5.1%)	(2.1%)
Eurozone (Euro Stoxx 50)	20.1%	17.8%	(6.4%)	(2.7%)
U.K. (FTSE 100)	9.0%	9.2%	(15.9%)	(12.2%)
Japan (NIKKEI 225)	17.9%	18.2%	6.6%	9.0%
Emerging Markets (MSCI Emerging Markets)	18.1%	16.6%	(3.4%)	1.7%

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 6/30/20



Equity market peak-to-trough



Equity markets around the world have recovered most of their losses

As of 6/30/20 - "Peak-to-trough" is defined as the total loss from the highest value achieved in 2020 to the lowest value achieved following the COVID-19 market drawdown. "Net change" is the difference between the market price on June 30th and the highest value achieved in 2020. Indexes include: S&P 500, Russell 2000, MSCI EAFE, MSCI Emerging Markets, MSCI ACWI.



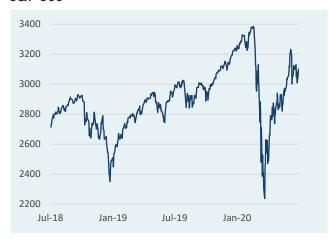
Domestic equity

U.S. equities delivered an incredible comeback, following the sudden and significant sell-off in March. The S&P 500 rallied +20.5% in the second quarter, bringing the year-to-date performance to -3.1%, and positive +7.5% over the past year.

While the Consumer Discretionary (+32.9%) and IT (+30.5%) sectors did post outsized performance, participation in the rebound was broad-based and not confined to mega-cap tech names such as Amazon. The S&P 500 Equal-Weighted Index outperformed the S&P 500 Index by 1.2%.

U.S. Treasury yields have moved closer to zero in 2020, which has reignited an ongoing discussion around the extent to which this dynamic will affect the equity market. We believe that the recent decline in interest rates should foundationally have a lifting effect on the value of equities, all else equal, since the value of a stock equals the present value of all future cash flows from that stock (lower interest rates result in higher present values). Generationally-low interest rates also create difficulties in holding higher quality fixed income due to inherent drag on portfolio performance. This potentially puts pressure on investors to make larger allocations to risky assets.

S&P 500

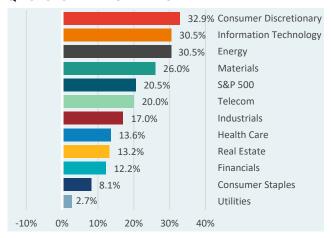


DIVIDEND YIELD VS BOND YIELD



Source: Standard & Poor's, as of 6/30/20

Q2 SECTOR PERFORMANCE



Source: Standard & Poor's, as of 6/30/20



Source: Standard & Poor's, as of 6/30/20

Domestic equity size & style

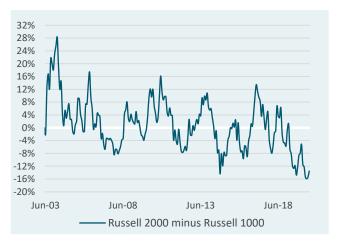
Growth stocks beat value stocks for the ninth consecutive month. The Russell 1000 Growth Index (+27.8%) outperformed the Russell 1000 Value Index (+14.3%). Small stocks beat large during the quarter (Russell 2000 +25.4%, Russell 1000 +21.8%), but continue to lag significantly over the longer-term.

Sector performance disparity continues to impact the behavior of value. While energy (+32.6%) delivered outsized returns over the quarter relative to the overall index (+21.8%), other value-tilted sectors such as financials (+16.3%), consumer staples (+9.0%), and utilities (+4.0%)

presented a drag on overall index performance.

We believe it is extremely difficult to successfully make short-term bets on style factors. Factor performance can be incredibly noisy and vulnerable to sector randomness. Value has become historically cheap, to arguably attractive levels, though a catalyst for a value turnaround is not yet evident. We are watching closely the developments in this space to identify potential opportunities. However, we continue to believe that consistent long-term exposure to the value factor is an ideal implementation approach for most investors, most of the time.

SMALL CAP VS LARGE CAP (YOY)



VALUE VS GROWTH (YOY)



Source: FTSE, as of 6/30/20

VALUE APPEARS HISTORICALLY CHEAP



Source: Russell, Bloomberg, as of 6/30/20



Source: FTSE, as of 6/30/20

Equity factor monitor

A significant rotation into higher beta, higher volatility, and/or lower quality (long/short, sector neutral, S&P 500 Index quintiles) stocks occurred during the second quarter. The change in investor preferences began in early April and was likely triggered by a combination of extraordinary central bank intervention, along with better than initially expected economic news and COVID-19 pandemic-related data. The rotation began moderating in mid-June as higher quality stocks bounced back.

From a longer-term perspective, the Q2 rotation did not come close to reversing the longer-term positive results accruing to the momentum and low volatility equity factors.

The value factor continued its long-term run of weak results during the quarter. Some have speculated that the value factor returns may benefit from a change in market regime from the current low growth and inflation backdrop to an environment of higher growth and inflation. The rise of factor-focused investing through dedicated smart beta ETFs could also be playing a role. Historical analysis suggests growth is the only factor showing relatively low sensitivity to both upturns and downturns. This analysis also indicates that low volatility, momentum, and quality factors were better protectors of capital during sell-offs.

FACTOR PERFORMANCE (INDEXED 1/2/2017=100)



Source: J.P. Morgan, as of 6/26/20

MEDIAN STYLE PERFORMANCE DURING MARKET SELL-OFF & RECOVERY



Source: J.P. Morgan, as of 6/26/20



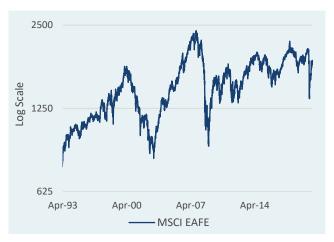
International developed equity

Equity markets around the world delivered a surprisingly strong recovery in the second quarter, rising between 12% to 20%. U.K. equities have lagged, only rising +7.8% over the quarter and remained down -23.3% over the year-to-date. Eurozone equities were among the top performers (MSCI Euro +19.6%). However, international equities lagged domestic markets (S&P 500 +20.5%).

On a one-year basis, the volatility of currency markets detracted from the performance of investors with unhedged currency exposure. Investors in international developed equities lost -3.0% due to currency movement (MSCI EAFE), and investors in emerging markets lost -5.1% (MSCI EM).

Earnings have fallen materially while equity prices recovered much of their losses. These two effects have led to a significant jump in equity valuations. This dynamic is not uncommon in environments where investors "look to the other side" of a crisis and generally expect tough conditions to be short-lived. With that said, if earnings do not recover to prior levels in a timely manner, investors may begin to question elevated multiples.

INTERNATIONAL DEVELOPED EQUITIES



EFFECT OF CURRENCY (1-YEAR ROLLING)



FORWARD P/E



Source: MSCI, as of 6/30/20

Source: MSCI, as of 6/30/20



Source: MSCI, as of 6/30/20

Emerging market equity

Emerging market equities (MSCI EM +18.1%) underperformed U.S. (S&P 500 +20.5%) while outperforming international developed equities (MSCI EAFE +14.9%) over the quarter. Within the emerging market complex, Latin American equities outperformed Asia over the quarter (MSCI EM Latin American +19.1% vs. MSCI EM Asia +17.8%) but underperformed year-to-date (-35.2% vs.-3.5%).

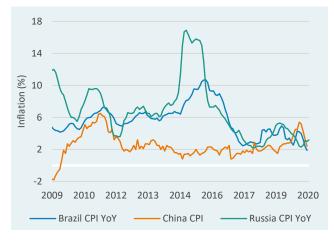
Low inflation in emerging economies may allow central banks more room to maneuver relative to developed economies with regard to the use of monetary policy in encouraging economic growth during the global slowdown.

Emerging currencies appreciated in Q2, which was additive to performance (MSCI EM Unhedged +18.1%, MSCI EM Hedged +16.6%). The significant depreciation of the Brazilian real and Turkish lira provided material headwinds for the performance of U.S. investors who have unhedged exposure to emerging markets. On the other hand, the Russian ruble saw large gains as the currency benefitted from rising oil prices.

EMERGING MARKET EQUITY

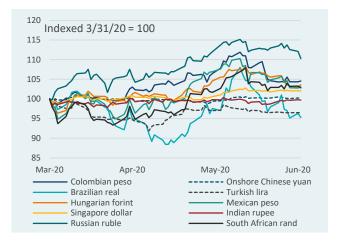


INFLATION (YOY)



Source: Bloomberg, as of 6/30/20

J.P. MORGAN EMCI CONSTITUENTS (VS. USD)



Source: Bloomberg, as of 6/30/20



Source: MSCI, as of 6/30/20

Equity valuations

Equity valuations fell in Q1 alongside the broad market selloff. In Q2, valuations reflated significantly as investors seemed to interpret the pandemic-induced earnings recession as more temporary in nature.

Equity prices are typically viewed as the present value of the sum of future cash flows. If the earnings drawdown is indeed temporary and "v-shaped" in nature, this implies mathematically a more modest loss of equity value. Furthermore, near zero interest rates in the developed world likely offset some of this impact (lower interest rates increase

the present value of equity). While we do not necessarily disagree with the argument that the equity rebound has been too much too soon, these two effects (potentially quick recovery but very low interest rates) may help us to better understand the recent rally.

Expected earnings over the next 12 months appear to have bottomed in the United States and look close to bottoming for the international developed and emerging markets. These expectations may provide some stability to equity valuations in the coming months.

FORWARD P/E RATIOS



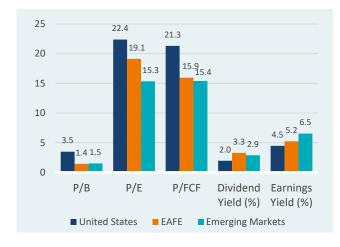
Source: MSCI, 12m forward P/E, as of 3/31/20

BLENDED FORWARD 12-MONTH EPS ESTIMATES



Source: MSCI, 12m forward EPS, as of 6/30/20

VALUATION METRICS (3-MONTH AVERAGE)



Source: Bloomberg, MSCI as of 6/30/20 - trailing P/E



Equity volatility

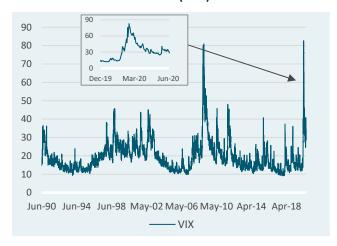
Moves in the CBOE VIX Index moderated in June. The long-term average of the index is near 19. It has remained above that level since February, reaching a high point of 85.0 on March 18th, and closing June at 30.4.

The VIX futures curve, which reflects expectations for future implied volatility of S&P 500 Index options, has taken on an inverted "v-shape" over the next six months, indicating market participants are pricing in higher S&P 500 volatility toward the end of the year around the U.S. election. After October, the market expectation is for volatility to subside

considerably. In normal circumstances, the VIX futures curve exhibits a moderate upward slope due to the skewed and mean-reverting nature of volatility generally (it is low most of the time, though there are occasional, large, short-lived spikes).

In the first quarter, the implied volatility on S&P 500 Index out-of-the-money put options spiked relative to similarly out-of-the-money call options, indicating investor preference for downside protection. That preference faded over the second quarter, but remained fairly strong relative to recent history.

U.S. IMPLIED VOLATILITY (VIX)

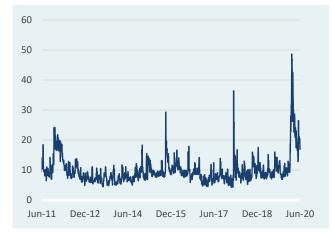


VIX FUTURES CURVE



Source: CBOE, Bloomberg, as of 6/30/20

30-DAY 10-DELTA SKEW (S&P 500 OPTIONS)

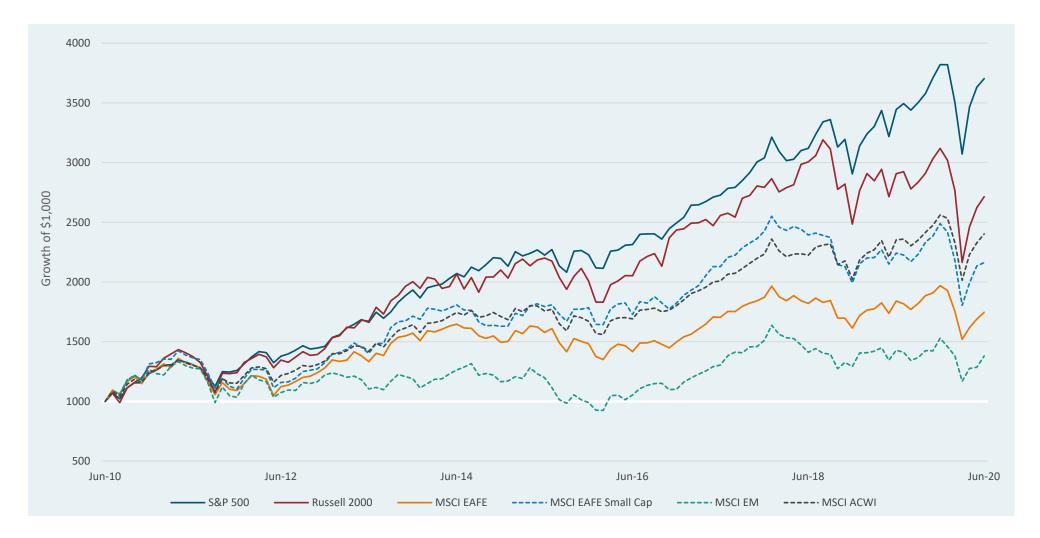


Source: CBOE, Bloomberg, as of 6/30/20



Source: CBOE, as of 6/30/20

Long-term equity performance







Other assets



Currency

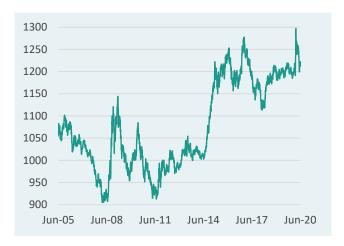
The U.S. dollar weakened in the second guarter, falling -2.3% according to the Bloomberg Dollar Spot Index. The dollar fell -2.4% against the Euro, appreciated +0.4% against the British pound, and fell -0.1% relative to the Japanese yen. The market recovery (less demand for save-haven currencies) and materially lower U.S. interest rates (less attractive U.S. dollar) have likely contributed to the move lower.

As the euro strengthened in Q2, some currency analysts have adopted a more optimistic view on the common currency. Improved macroeconomic conditions relative to the United

States, the potential implications of a strong cyclical rebound, as well as the ECB's apparent unwillingness to push rates much lower below 0%, may be leading to euro appreciation.

The MSCI Currency Factor Mix Index, constructed as a combination of individual currency factor indices (carry, value, momentum) declined 1.7% in Q2. The momentum factor (-7.8%) drove declines in the overall index as the U.S. dollar began to weaken relative to other major currency pairs following a period of strong appreciation.

BLOOMBERG DOLLAR SPOT INDEX



Source: Bloomberg, as of 6/30/20 Source: Federal Reserve, as of 6/30/20

USD CURRENCY LEVEL & SUBSEQUENT RETURN



EMBEDDED CURRENCY VS CURRENCY BETA



Source: MSCI, Bloomberg, as of 6/30/20



Commodities

The Bloomberg Commodity Index returned 5.1% in the second quarter, though the index remains depressed year-to-date (-19.4%). A global recession driven by COVID-19 has led to an unprecedented industrial slowdown, severely impacting the demand for energy. The energy (-46.3%) and petroleum (-49.8%) components of the index have dragged performance lower year-to-date.

Gold prices climbed higher during Q2 amidst a backdrop of heightened geopolitical and economic uncertainty, lower global real yields (which diminish the opportunity cost of holding gold), and a weakening U.S. dollar. Spot gold prices rose from \$1577/oz to \$1781/oz, their highest level since 2011, and have returned 17.1% so far this year. Industrial metals (+12.3%) were bid higher in the second quarter alongside oil, perhaps on enthusiasm around reopening plans and a possible economic rebound. Copper (+21.2%) experienced supply-side tailwinds as COVID-19 spread through Peru, raising production concerns.

Some of the poor recent performance of commodities has been caused by an upward sloping futures curve, which can generate losses due to negative "roll return". Unattractive futures curve shape continues to contribute to performance.

COMMODITY PERFORMANCE



Source: Bloomberg, as of 6/30/20

COMMODITIES ROLL RETURN



Source: Standard & Poor's, as of 6/30/20



Appendix



Periodic table of returns

		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	YTD	5-Year	10-Year
I	Large Cap Growth	38.7	66.4	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	9.8	15.9	17.2
	US Bonds	27.0	43.1	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	6.1	10.5	14.0
	Real Estate	20.3	33.2	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	0.7	7.0	12.9
	Cash	19.3	27.3	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	0.4	6.9	10.5
Не	edge Funds of Funds	16.2	26.5	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	-2.3	5.5	10.4
60	/40 Global Portfolio	8.7	21.3	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	-2.3	4.6	9.8
	Large Cap Equity	15.6	24.3	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	-2.8	4.3	7.8
	Small Cap Growth	4.9	20.9	-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	-3.1	4.3	6.8
Em	erging Markets Equity	1.2	13.2	-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	-9.8	2.9	5.7
Ir	nternational Equity	-2.5	11.4	-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	-11.3	2.1	3.8
	Small Cap Equity	-5.1	7.3	-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	-13.0	1.4	3.3
	Large Cap Value	-6.5	4.8	-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	-16.3	1.3	2.7
	Commodities	-25.3	-0.8	-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	-19.4	1.1	0.6
	Small Cap Value	-27.0	-1.5	-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	-23.5	-7.7	-5.8

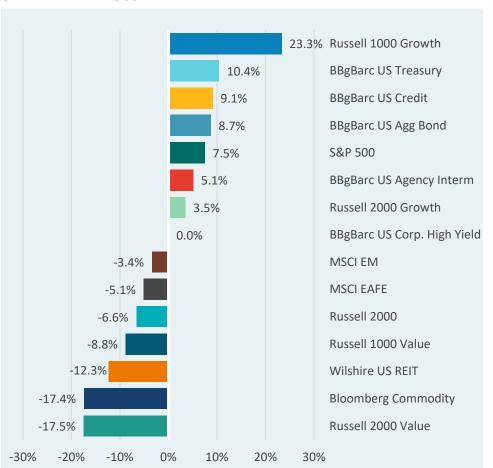


Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BBgBarc Global Bond. NCREIF Property Index performance data as of 3/31/20.

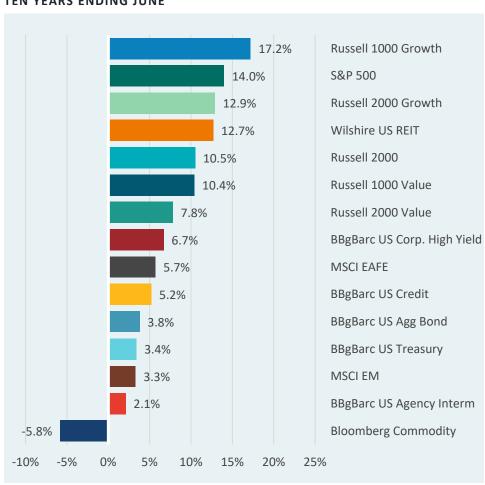


Major asset class returns

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.

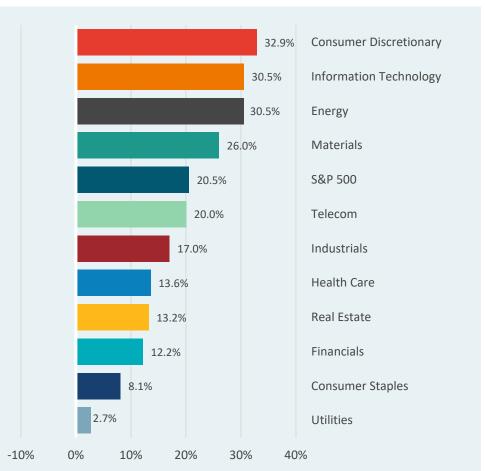
Source: Morningstar, as of 6/30/20

Source: Morningstar, as of 6/30/20

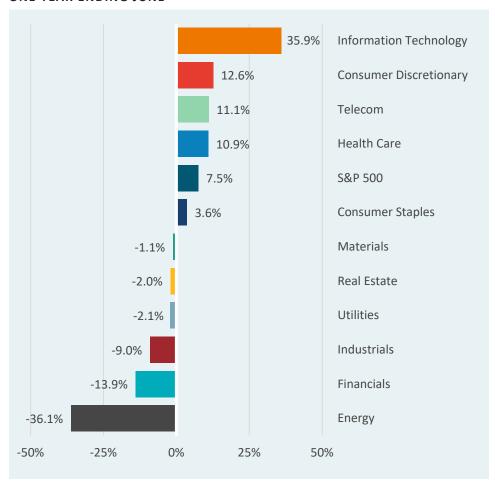


S&P 500 sector returns

QTD



ONE YEAR ENDING JUNE



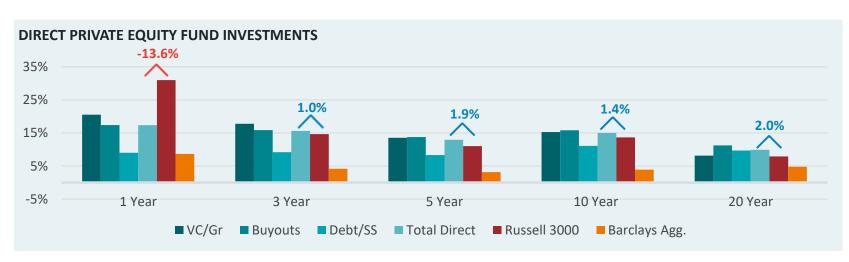
Source: Morningstar, as of 6/30/20

Source: Morningstar, as of 6/30/20

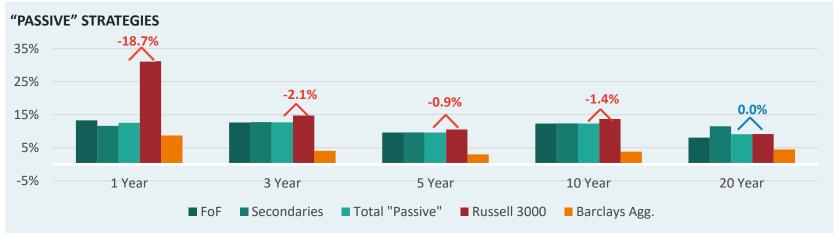


Private equity vs. public performance

As of 12/31/2019



Direct P.E Fund Investments outperformed comparable public equites across all time periods, except on a 1-year basis



"Passive" strategies underperformed comparable public equities across all time periods, except on a 20- year basis

Sources: Thomson Reuters Cambridge Universe's PME Module: U.S. Private Equity Funds sub asset classes as of December 31, 2019. 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 equity vs. liquid real assets performance

As of 12/31/2019



N.R. funds underperformed the MSCI World Natural Resources benchmark across all time periods, except on a 10 year basis



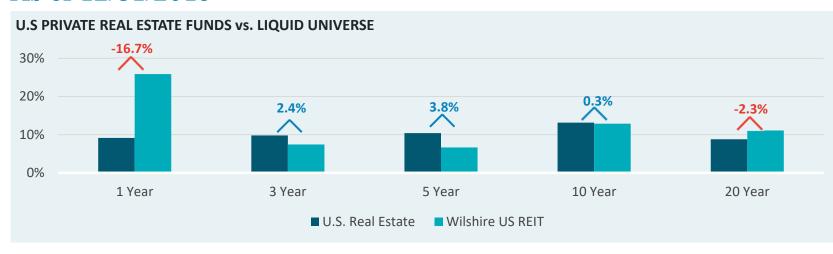
Infra. funds outperformed the S&P Infra. across all periods, except on a 1-year basis

Sources: Thomson Reuters C|A 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, 2019. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real assets universes.

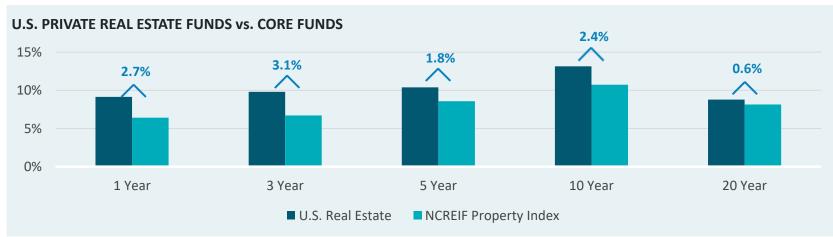


Private vs. liquid & core real estate performance

As of 12/31/2019



U.S. Private R.E. funds underperformed the Wilshire U.S. REIT Index on a 1- and 20-year basis, but not over 3-, 5, and 10-years basis.



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

Sources: Thomson Reuters C|A PME: U.S. Real Estate universes as of December 31, 2019. Public Market Equivalent returns resulted from identical cash flows invested into and distributed from respective liquid real estate universes.



Detailed index returns

DOMESTIC EQUITY								FIXED INCOME							
	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year		Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index								Broad Index							
S&P 500	2.0	20.5	(3.1)	7.5	10.7	10.7	14.0	BBgBarc US TIPS	1.1	4.2	6.0	8.3	5.0	3.7	3.5
S&P 500 Equal Weighted	1.6	21.7	(10.8)	(3.2)	5.4	7.1	12.6	BBgBarc US Treasury Bills	0.0	0.0	0.7	1.7	1.8	1.2	0.7
DJ Industrial Average	1.8	18.5	(8.4)	(0.5)	9.1	10.6	13.0	BBgBarc US Agg Bond	0.6	2.9	6.1	8.7	5.3	4.3	3.8
Russell Top 200	2.4	20.9	(0.5)	11.2	12.5	11.9	14.6	Duration							
Russell 1000	2.2	21.8	(2.8)	7.5	10.6	10.5	14.0	BBgBarc US Treasury 1-3 Yr	0.0	0.2	3.0	4.1	2.7	1.9	1.3
Russell 2000	3.5	25.4	(13.0)	(6.6)	2.0	4.3	10.5	BBgBarc US Treasury Long	0.1	0.2	21.2	25.4	12.0	9.3	7.7
Russell 3000	2.3	22.0	(3.5)	6.5	10.0	10.0	13.7	BBgBarc US Treasury	0.1	0.5	8.7	10.4	5.6	4.1	3.4
Russell Mid Cap	1.8	24.6	(9.1)	(2.2)	5.8	6.8	12.3	Issuer							
Style Index								BBgBarc US MBS	(0.1)	0.7	3.5	5.7	4.0	3.2	3.1
Russell 1000 Growth	4.4	27.8	9.8	23.3	19.0	15.9	17.2	BBgBarc US Corp. High Yield	1.0	10.2	(3.8)	0.0	3.3	4.8	6.7
Russell 1000 Value	(0.7)	14.3	(16.3)	(8.8)	1.8	4.6	10.4	BBgBarc US Agency Interm	0.1	0.8	3.7	5.1	3.3	2.5	2.1
Russell 2000 Growth	3.8	30.6	(3.1)	3.5	7.9	6.9	12.9	BBgBarc US Credit	1.8	8.2	4.8	9.1	6.1	5.5	5.2
Russell 2000 Value	2.9	18.9	(23.5)	(17.5)	(4.3)	1.3	7.8								
INTERNATIONAL EQUITY	•							OTHER							
Broad Index								Index							
MSCI ACWI	3.2	19.2	(6.3)	2.1	6.1	6.5	9.2	Bloomberg Commodity	2.3	5.1	(19.4)	(17.4)	(6.1)	(7.7)	(5.8)
MSCI ACWI ex US	4.5	16.1	(11.0)	(4.8)	1.1	2.3	5.0	Wilshire US REIT	2.3	10.6	(17.8)	(12.3)	0.2	5.7	12.7
MSCI EAFE	3.4	14.9	(11.3)	(5.1)	0.8	2.1	5.7	CS Leveraged Loans	1.3	9.7	(4.8)	(2.3)	2.1	4.6	5.0
MSCI EM	7.4	18.1	(9.8)	(3.4)	1.9	2.9	3.3	Alerian MLP	(8.2)	47.2	(38.3)	(44.1)	(18.3)	(13.6)	(1.4)
MSCI EAFE Small Cap	1.4	19.9	(13.1)	(3.5)	0.5	3.8	8.0	Regional Index							
Style Index								JPM EMBI Global Div	3.5	12.3	(2.8)	0.5	3.6	5.3	6.0
MSCI EAFE Growth	3.2	16.9	(3.5)	4.2	5.9	5.5	7.8	JPM GBI-EM Global Div	0.5	9.8	(6.9)	(2.8)	1.1	2.3	1.6
MSCI EAFE Value	3.6	12.4	(19.3)	(14.5)	(4.4)	(1.6)	3.5	Hedge Funds							
Regional Index								HFRI Composite	1.9	9.0	(3.5)	(0.6)	2.1	2.3	3.7
MSCI UK	1.4	7.8	(23.3)	(17.7)	(3.9)	(2.5)	3.9	HFRI FOF Composite	1.3	7.2	(2.3)	(0.2)	2.0	1.4	2.7
MSCI Japan	(0.0)	11.6	(7.1)	3.1	3.0	3.4	6.1	Currency (Spot)							
MSCI Euro	6.2	19.6	(12.7)	(7.7)	(0.9)	1.6	5.0	Euro	1.0	2.4	0.1	(1.4)	(0.5)	0.2	(0.9)
MSCI EM Asia	8.2	17.8	(3.5)	4.9	4.1	4.8	5.8	Pound	(0.1)	(0.4)	(6.7)	(2.9)	(1.7)	(4.7)	(1.9)
MSCI EM Latin American	5.3	19.1	(35.2)	(32.5)	(7.2)	(3.2)	(3.8)	Yen	(0.1)	0.1	0.7	(0.1)	1.4	2.6	(2.0)

Source: Morningstar, HFR, as of 6/30/20



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. (https://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

Past performance is no guarantee of future results. This report or presentation is provided for informational purposes only and is directed to institutional clients and eligible institutional counterparties only and should not be relied upon by retail investors. Nothing herein constitutes investment, legal, accounting or tax advice, or a recommendation to buy, sell or hold a security or pursue a particular investment vehicle or any trading strategy. The opinions and information expressed are current as of the date provided or cited only and are subject to change without notice. This information is obtained from sources deemed reliable, but there is no representation or warranty as to its accuracy, completeness or reliability. Verus Advisory Inc. expressly disclaim any and all implied warranties or originality, accuracy, completeness, non-infringement, merchantability and fitness for a particular purpose. This report or presentation cannot be used by the recipient for advertising or sales promotion purposes.

The material may include estimates, outlooks, projections and other "forward-looking statements." Such statements can be identified by the use of terminology such as "believes," "expects," "may," "will," "should," "anticipates," or the negative of any of the foregoing or comparable terminology, or by discussion of strategy, or assumptions such as economic conditions underlying other statements. No assurance can be given that future results described or implied by any forward looking information will be achieved. Actual events may differ significantly from those presented. Investing entails risks, including possible loss of principal. Risk controls and models do not promise any level of performance or guarantee against loss of principal.

"VERUS ADVISORY™ and any associated designs are the respective trademarks of Verus Advisory, Inc. Additional information is available upon request.





Imperial County Employees' Retirement System

Investment Performance Review Period Ending: June 30, 2020



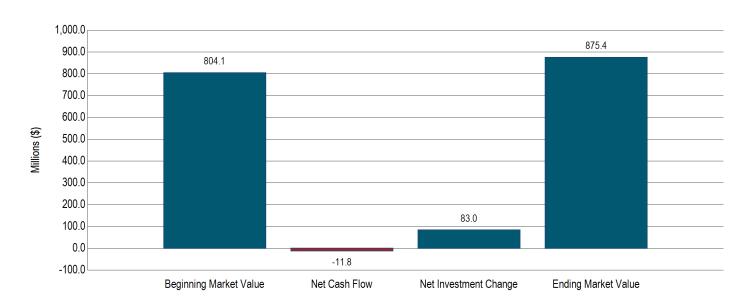
VERUSINVESTMENTS.COM

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

Portfolio Reconciliation

	Last Three Months	Fiscal Year-To-Date	One Year
Beginning Market Value	\$804,093,043	\$866,437,865	\$866,437,865
Net Cash Flow	-\$11,760,091	-\$15,617,150	-\$15,617,150
Net Investment Change	\$83,018,831	\$24,531,068	\$24,531,068
Ending Market Value	\$875,351,783	\$875,351,783	\$875,351,783

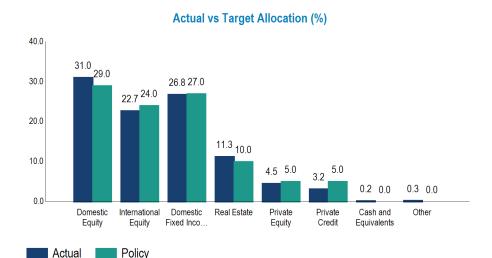
Change in Market Value Last Three Months



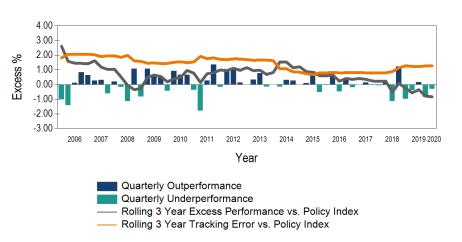
Contributions and withdrawals may include intra-account transfers between managers/funds. Fee transactions are excluded from Portfolio Reconciliation.



	QTD	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Total Fund	10.4	-2.8	3.1	3.1	5.8	6.1	8.3
Policy Index	10.7	-1.6	4.6	4.6	6.6	6.4	8.0
InvMetrics Public DB Gross Rank	77	48	48	48	45	43	42
Total Domestic Equity	22.1	-3.4	6.6	6.6	10.1	10.0	13.6
Russell 3000	22.0	-3.5	6.5	6.5	10.0	10.0	13.7
InvMetrics Public DB US Eq Gross Rank	39	12	8	8	11	13	22
Total International Equity	16.0	-12.9	-7.1	-7.1	0.2	2.3	4.9
MSCI ACWI ex USA Gross	16.3	-10.8	-4.4	-4.4	1.6	2.7	5.5
InvMetrics Public DB ex-US Eq Gross Rank	84	88	92	92	78	65	89
Total Fixed Income	5.0	5.9	8.9	8.9	5.6	4.8	4.9
BBgBarc US Aggregate TR	2.9	6.1	8.7	8.7	5.3	4.3	3.8
InvMetrics Public DB Total Fix Inc Gross Rank	45	23	11	11	7	19	31
Total Real Estate	-1.0	0.3	2.7	2.7	5.4	6.8	10.8
NCREIF-ODCE	-1.6	-0.6	2.2	2.2	5.7	7.3	10.8
Total Private Equity	-8.4	-5.5	1.6	1.6	12.2	13.1	
Private Equity Benchmark	-8.1	-5.1	2.1	2.1	12.3	12.7	
Total Private Credit	0.1	2.3	7.0	7.0			
Private Credit Benchmark	0.1	2.3	7.0	7.0			
Total Opportunistic	-4.4	-4.2	-3.2	-3.2	5.1	5.0	12.9
Assumption Rate + 1%	2.0	4.0	8.3	8.3	8.3	8.3	8.7



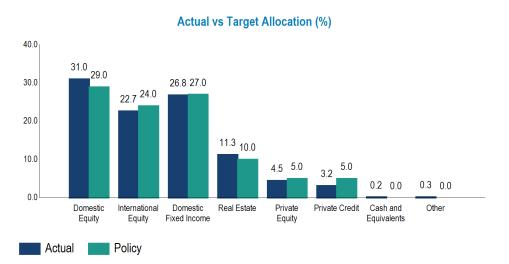
Rolling Annualized Excess Performance and Tracking Error Total Fund vs. Policy Index



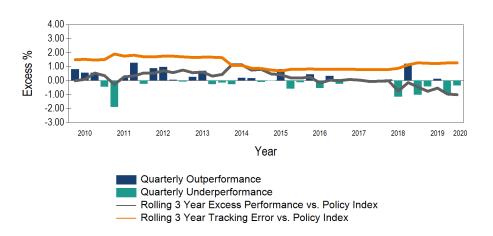
New Policy Index (as of 10/1/2018): 29% Russell 3000, 24% MSCI ACWI ex USA Gross, 27% BBgBarc US Aggregate, 10% NCREIF Property Index, 5% Russell 3000 +3% (Lagged), 5% BBgBarc High Yield +2% (Lagged). Prior Policy Index (10/1/2016 to 9/30/2018): 29% Russell 3000, 24% MSCI ACWI Ex USA Gross, 27% BBgBarc Aggregate, 5% NCREIF Property Index, 5% NCREIF Property Index +2%, 5% Russell 3000 +3% (Lagged), 5% BBgBarc High Yield +2% (Lagged). Prior quarter Private Equity returns and index data are used. All returns are (G) gross 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.



	QTD	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Total Fund	10.4	-2.9	2.9	2.9	5.6	5.8	7.9
Policy Index	10.7	-1.6	4.6	4.6	6.6	6.4	8.0
Total Domestic Equity	22.0	-3.4	6.6	6.6	10.1	9.9	13.4
Russell 3000	22.0	-3.5	6.5	6.5	10.0	10.0	13.7
Total International Equity	15.9	-13.0	-7.4	-7.4	-0.1	2.0	4.4
MSCI ACWI ex USA Gross	16.3	-10.8	-4.4	-4.4	1.6	2.7	5.5
Total Fixed Income	4.9	5.8	8.6	8.6	5.3	4.5	4.6
BBgBarc US Aggregate TR	2.9	6.1	8.7	8.7	5.3	4.3	3.8
Total Real Estate	-1.0	0.3	2.7	2.7	5.4	6.5	10.2
NCREIF-ODCE	-1.6	-0.6	2.2	2.2	5.7	7.3	10.8
Total Private Equity	-8.4	-5.5	1.6	1.6	12.2	12.6	1.4
Private Equity Benchmark	-8.1	-5.1	2.1	2.1	12.3	12.7	
Total Private Credit	0.1	2.3	7.0	7.0			
Private Credit Benchmark	0.1	2.3	7.0	7.0			
Total Opportunistic	-4.4	-4.2	-3.2	-3.2	5.1	4.4	11.8
Assumption Rate + 1%	2.0	4.0	8.3	8.3	8.3	8.3	8.7



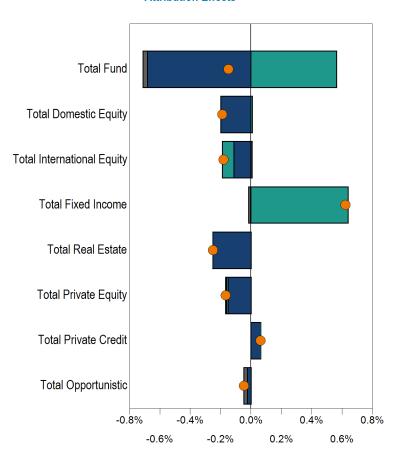
Rolling Annualized Excess Performance and Tracking Error Total Fund vs. Policy Index



New Policy Index (as of 10/1/2018): 29% Russell 3000, 24% MSCI ACWI ex USA Gross, 27% BBgBarc US Aggregate, 10% NCREIF Property Index, 5% Russell 3000 +3% (Lagged), 5% BBgBarc High Yield +2% (Lagged). Prior Policy Index (10/1/2016 to 9/30/2018): 29% Russell 3000, 24% MSCI ACWI Ex USA Gross, 27% BBgBarc Aggregate, 5% NCREIF Property Index, 5% NCREIF Property Index +2%, 5% Russell 3000 +3% (Lagged), 5% BBgBarc High Yield +2% (Lagged). Prior quarter Private Equity returns and index data are used. All returns are (G) gross 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.



Attribution Effects



Allocation EffectSelection EffectInteraction EffectsTotal Effect

Performance Attribution

	Quarter	YTD
Wtd. Actual Return	10.43%	-2.85%
Wtd. Index Return *	10.72%	-1.62%
Excess Return	-0.29%	-1.23%
Selection Effect	0.56%	-0.53%
Allocation Effect	-0.68%	-0.56%
Interaction Effect	-0.03%	-0.01%

^{*}Calculated from benchmark returns and weightings of each component.

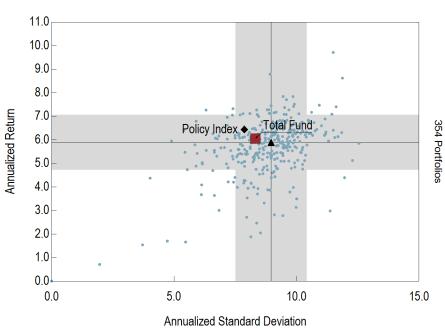
Attribution Summary Last Three Months

	Wtd. Actual	Wtd. Index	Excess	Selection	Allocation	Interaction	Total
	Return	Return	Return	Effect	Effect	Effects	Effects
Total Domestic Equity	22.1%	22.0%	0.0%	0.0%	-0.2%	0.0%	-0.2%
Total International Equity	16.0%	16.3%	-0.3%	-0.1%	-0.1%	0.0%	-0.2%
Total Fixed Income	5.0%	2.9%	2.1%	0.6%	0.0%	0.0%	0.6%
Total Real Estate	-1.0%	-1.0%	0.0%	0.0%	-0.3%	0.0%	-0.3%
Total Private Equity	-8.4%	-8.1%	-0.3%	0.0%	-0.2%	0.0%	-0.2%
Total Private Credit	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	0.1%
Total Opportunistic	-4.4%	2.0%	-6.4%	0.0%	0.0%	0.0%	0.0%
Total	10.4%	10.7%	-0.3%	0.6%	-0.7%	0.0%	-0.1%

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

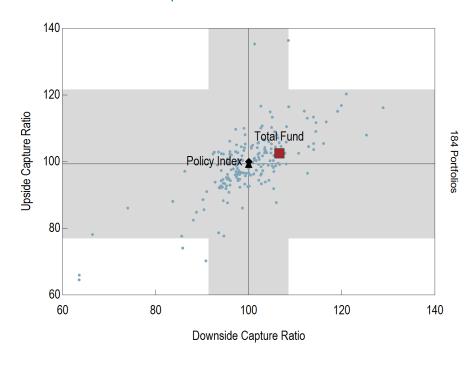
	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
Total Fund	6.06%	-0.38%	8.32%	-0.70%	1.05	1.01%	0.99	0.59	-0.37	102.49%	106.55%

Risk vs. Return



- Total Fund
- Policy Index
- Universe Median
- 68% Confidence Interval
- InvMetrics Public DB Gross

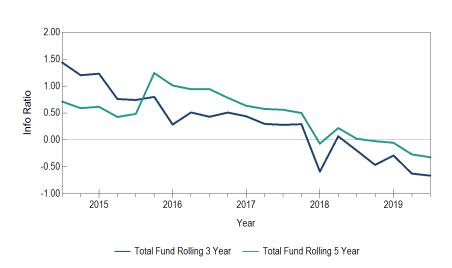
Up Markets vs. Down Markets



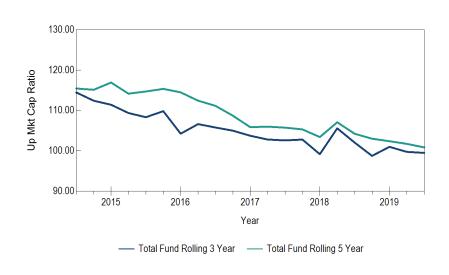
- Total Fund
- Policy Index
- ▲ Universe Median
- 68% Confidence Interval
- InvMetrics Public DB Gross



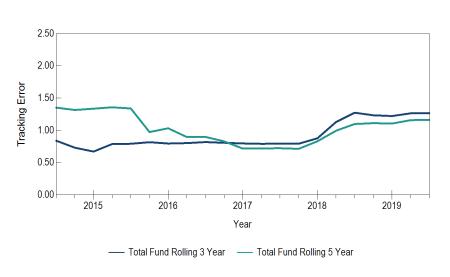
Rolling Information Ratio



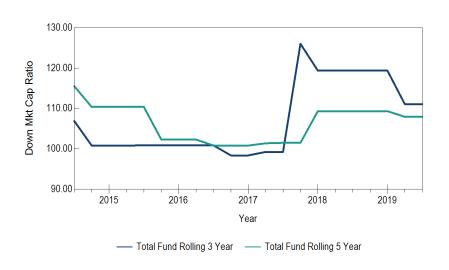
Rolling Up Market Capture Ratio (%)



Rolling Tracking Error



Rolling Down Market Capture Ratio (%)





	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception I	nception Date
Total Fund	875,351,783	100.0	10.4	-2.8	3.1	3.1	5.8	6.1	8.3	18.0	-4.0	16.2	7.8	0.0	9.0	Mar-89
Policy Index			10.7	-1.6	4.6	4.6	6.6	6.4	8.0	18.0	-2.8	15.9	8.3	-1.2		Mar-89
InvMetrics Public DB Gross Rank			77	48	48	48	45	43	42	58	50	30	49	53	6	Mar-89
Total Domestic Equity	271,729,161	31.0	22.1	-3.4	6.6	6.6	10.1	10.0	13.6	31.1	-5.2	21.2	12.9	0.3	-	
Russell 3000			22.0	-3.5	6.5	6.5	10.0	10.0	13.7	31.0	-5.2	21.1	12.7	0.5		
InvMetrics Public DB US Eq Gross Rank			39	12	8	8	11	13	22	17	35	35	51	44		
BlackRock Russell 3000	271,729,161	31.0	22.1	-3.4	6.6	6.6	10.1			31.1	-5.2	21.2	12.9		11.1	Dec-15
Russell 3000			22.0	-3.5	6.5	6.5	10.0			31.0	-5.2	21.1	12.7		10.8	Dec-15
eV US All Cap Core Equity Gross Rank	_		38	46	44	44	40			42	49	49	35		41	Dec-15
Total International Equity	198,707,912	22.7	16.0	-12.9	-7.1	-7.1	0.2	2.3	4.9	21.0	-14.0	28.3	4.7	-3.5	-	
MSCI ACWI ex USA Gross			16.3	-10.8	-4.4	-4.4	1.6	2.7	5.5	22.1	-13.8	27.8	5.0	-5.3		
InvMetrics Public DB ex-US Eq Gross Rank			84	88	92	92	78	65	89	78	35	59	40	57		
BlackRock International Equity	139,420,022	15.9	15.1	-11.1	-4.8	-4.8	1.2	2.4	6.1	22.5	-13.4	25.5	1.5	-0.5	6.5	Jul-03
MSCI EAFE Gross			15.1	-11.1	-4.7	-4.7	1.3	2.5	6.2	22.7	-13.4	25.6	1.5	-0.4	6.6	Jul-03
eV All EAFE Equity Gross Rank			71	50	56	56	52	57	74	56	35	65	47	67	71	Jul-03
DFA Emerging Markets Value	26,835,109	3.1	19.3	-18.6	-16.7	-16.7	-3.2	0.7	1.4	10.3	-11.4	34.5	20.5	-18.3	2.7	Jan-07
MSCI Emerging Markets Value GR			14.0	-17.9	-15.3	-15.3	-2.1	-0.3	1.1	12.5	-10.3	28.7	15.5	-18.2	2.6	Jan-07
eV Emg Mkts All Cap Value Equity Gross Rank			28	67	87	87	75	77	99	88	29	47	22	81	75	Jan-07
Harding Loevner Emerging Markets	32,452,781	3.7	17.3	-15.2	-8.1	-8.1	-0.7			25.4	-18.6	35.0			3.7	Jul-16
MSCI Emerging Markets Growth GR			22.1	-1.4	9.9	9.9	6.4		-	25.4	-18.0	47.1			10.0	Jul-16
eV Emg Mkts All Cap Growth Equity Gross Rank			98	98	98	98	98			54	71	91			95	Jul-16
Total Fixed Income	235,026,577	26.8	5.0	5.9	8.9	8.9	5.6	4.8	4.9	9.8	-0.5	4.6	5.1	-0.3	-	
BBgBarc US Aggregate TR			2.9	6.1	8.7	8.7	5.3	4.3	3.8	8.7	0.0	3.5	2.6	0.6		
InvMetrics Public DB Total Fix Inc Gross Rank			45	23	11	11	7	19	31	30	58	59	41	55		
Tortoise Capital	97,976,794	11.2	4.6	6.0	9.2	9.2	6.0	5.3	5.4	10.2	0.2	4.5	5.1	1.2	6.6	Dec-92
BBgBarc US Aggregate TR			2.9	6.1	8.7	8.7	5.3	4.3	3.8	8.7	0.0	3.5	2.6	0.6	5.6	Dec-92
eV US Core Plus Fixed Inc Gross Rank			78	29	25	25	21	21	26	46	24	70	45	15	29	Dec-92
MacKay Shields Core Plus Opportunities	95,183,998	10.9	5.7	5.7	8.9	8.9	5.5	4.6		10.1	-0.7	4.9	5.1		4.0	Mar-15
BBgBarc US Aggregate TR			2.9	6.1	8.7	8.7	5.3	4.3		8.7	0.0	3.5	2.6		3.8	Mar-15
eV US Core Plus Fixed Inc Gross Rank			53	39	32	32	54	72		53	69	54	46		78	Mar-15
BlackRock US TIPS	41,865,786	4.8	4.4	6.1	8.5	8.5	5.2	3.9	3.6	8.5	-1.1	3.2	4.8	-1.2	4.5	Apr-07
BBgBarc US TIPS TR			4.2	6.0	8.3	8.3	5.0	3.7	3.5	8.4	-1.3	3.0	4.7	-1.4	4.3	Apr-07
eV US TIPS / Inflation Fixed Inc Gross Rank			42	30	27	27	32	35	49	48	47	46	37	43	62	Apr-07

Since Inception ranking is from the beginning of the first complete month. Templeton Foreign Equity liquidated 10/27/2015. TimesSquare, BlackRock Russell 1000 and T. Rowe liquidated 12/10/2015. BlackRock Russell 3000 funded 12/10/2015. Harding Loevner funded 7/5/2016. Parametric liquidated 7/5/2016. Vontobel liquidated 7/13/2016. Gresham MTAP liquidated 8/22/2016. BlackRock Commodities liquidated 9/2/2016. ARA American Strategic Value Realty funded 1/4/2018.



Total Fund Performance Summary (Gross of Fees)

Period Ending: June 30, 2020

	Market Value	Portiono	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs		10 Yrs	2019	2018	2017	2016		Inception I	nception Date
Total Real Estate	98,591,336	11.3	-1.0	0.3	2.7	2.7	5.4	6.8	10.8	5.6	7.5	5.8	7.5	16.1		
NCREIF ODCE			-1.6	-0.6	2.2	2.2	5.1	6.6	9.6	5.3	7.1	7.0	8.0	13.3		
ASB Real Estate	28,984,198	3.3	-0.8	0.7	0.8	0.8	4.3	5.7		3.0	6.6	4.0	5.6	17.3	8.5	Dec-12
NCREIF-ODCE			-1.6	-0.6	2.2	2.2	5.7	7.3		5.3	8.3	7.6	8.8	15.0	9.4	Dec-12
NCREIF Property Index			-1.0	-0.3	2.7	2.7	5.4	6.8		6.4	6.7	7.0	8.0	13.3	8.5	Dec-12
Clarion Lion	29,918,343	3.4	-2.1	-1.0	2.2	2.2	5.8	7.5	11.6	6.3	8.6	7.9	9.1	15.7	5.1	Dec-06
NCREIF-ODCE			-1.6	-0.6	2.2	2.2	5.7	7.3	10.8	5.3	8.3	7.6	8.8	15.0	5.8	Dec-06
NCREIF Property Index			-1.0	-0.3	2.7	2.7	5.4	6.8	9.7	6.4	6.7	7.0	8.0	13.3	6.6	Dec-06
ARA American Strategic Value Realty	37,744,450	4.3	-0.3	1.0	4.8	4.8				7.8					6.9	Jan-18
NCREIF ODCE +2%			-1.1	0.4	4.3	4.3				7.4					6.6	Jan-18
1221 State St. Corp	1,944,344	0.2	0.0	0.0	7.9	7.9	2.6	4.9	1.8	7.9	0.0	0.0	17.5	0.0	1.7	Sep-08
Total Private Equity																
Harbourvest Buyout IX	6,894,784	0.8	-7.2	-3.4	5.2	5.2	15.0	16.5		17.6	23.6	23.2	15.8	21.1	-	Sep-11
Harbourvest Credit Ops IX	1,149,886	0.1	-14.3	-12.1	-8.2	-8.2	6.9	8.9		8.0	14.4	17.5	10.9	16.1		Sep-11
Harbourvest International PE VI	2,287,497	0.3	-7.6	-6.1	-11.0	-11.0	6.1	8.3	7.5	-2.9	14.8	19.4	13.6	9.8		Jun-10
Harbourvest Venture IX	4,386,581	0.5	-0.2	3.8	16.7	16.7	19.4	15.9		24.6	25.9	9.4	6.5	24.2	-	Sep-11
Harbourvest 2017 Global Fund	15,946,435	1.8	-11.2	-7.1	-0.3	-0.3			-	8.8	20.9				10.4	Sep-17
Harbourvest 2018 Global Fund	7,158,304	0.8	-5.7	-6.3	4.7	4.7				14.3					4.4	Dec-18
Harbourvest 2019 Global Fund	1,899,920	0.2	-20.0	-20.0											-20.0	Dec-19
Russell 3000 + 3%			22.9	-2.0											1.0	Dec-19
Total Private Credit																
Portfolio Advisors	27,669,999	3.2	0.1	2.3	7.0	7.0				9.4	6.7				6.8	Oct-17
BBgBarc High Yield +2% (Lagged)			-12.2	-9.5	-5.1	-5.1				8.5	5.1				1.6	Oct-17
Total Opportunistic																
KKR Mezzanine Partners	2,112,794	0.2	-2.0	-0.5	2.9	2.9	7.6	7.1		-4.2	25.3	8.7	5.6	5.9	10.6	Apr-11
PIMCO BRAVO	84,409	0.0	-42.7	-52.9	-62.8	-62.8	-25.9	-16.6		-49.1	77.8	-12.4	12.5	2.2	0.6	May-11
Total Cash																
Cash Account	1,706,188	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0		
91 Day T-Bills	. ,		0.0	0.4	1.3	1.3	1.7	1.1	0.6	2.1	1.9	0.9	0.3	0.0		

Since Inception ranking is from the beginning of the first complete month. Templeton Foreign Equity liquidated 10/27/2015. TimesSquare, BlackRock Russell 1000 and T. Rowe liquidated 12/10/2015. BlackRock Russell 3000 funded 12/10/2015. Harding Loevner funded 7/5/2016. Parametric liquidated 7/5/2016. Vontobel liquidated 7/13/2016. Gresham MTAP liquidated 8/22/2016. BlackRock Commodities liquidated 9/2/2016. ARA American Strategic Value Realty funded 1/4/2018. Harbourvest 2019 funded 12/6/2019.



	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015	Inception I	nception Date
Total Fund	875,351,783	100.0	10.4	-2.9	2.9	2.9	5.6	5.8	7.9	17.8	-4.1	16.0	7.4	-0.4	8.6	Mar-89
Policy Index			10.7	-1.6	4.6	4.6	6.6	6.4	8.0	18.0	-2.8	15.9	8.3	-1.2		Mar-89
Total Domestic Equity	271,729,161	31.0	22.0	-3.4	6.6	6.6	10.1	9.9	13.4	31.1	-5.2	21.2	12.8	0.1	-	
Russell 3000			22.0	-3.5	6.5	6.5	10.0	10.0	13.7	31.0	-5.2	21.1	12.7	0.5		
BlackRock Russell 3000	271,729,161	31.0	22.0	-3.4	6.6	6.6	10.1			31.1	-5.2	21.2	12.8		11.1	Dec-15
Russell 3000			22.0	-3.5	6.5	6.5	10.0			31.0	-5.2	21.1	12.7		10.8	Dec-15
Total International Equity	198,707,912	22.7	15.9	-13.0	-7.4	-7.4	-0.1	2.0	4.4	20.7	-14.3	27.9	4.4	-4.0		
MSCI ACWI ex USA Gross			16.3	-10.8	-4.4	-4.4	1.6	2.7	5.5	22.1	-13.8	27.8	5.0	-5.3		
BlackRock International Equity	139,420,022	15.9	15.0	-11.2	-4.9	-4.9	1.1	2.3	6.0	22.4	-13.5	25.4	1.3	-0.6	6.3	Jul-03
MSCI EAFE Gross			15.1	-11.1	-4.7	-4.7	1.3	2.5	6.2	22.7	-13.4	25.6	1.5	-0.4	6.6	Jul-03
DFA Emerging Markets Value	26,835,109	3.1	19.1	-18.9	-17.2	-17.2	-3.7	0.1	0.8	9.6	-11.9	33.8	19.8	-18.8	2.2	Jan-07
MSCI Emerging Markets Value GR			14.0	-17.9	-15.3	-15.3	-2.1	-0.3	1.1	12.5	-10.3	28.7	15.5	-18.2	2.6	Jan-07
Harding Loevner Emerging Markets	32,452,781	3.7	17.0	-15.7	-9.1	-9.1	-1.7			24.0	-19.5	33.6			2.6	Jul-16
MSCI Emerging Markets Growth GR			22.1	-1.4	9.9	9.9	6.4			25.4	-18.0	47.1			10.0	Jul-16
Total Fixed Income	235,026,577	26.8	4.9	5.8	8.6	8.6	5.3	4.5	4.6	9.5	-0.8	4.3	4.8	-0.6		
BBgBarc US Aggregate TR			2.9	6.1	8.7	8.7	5.3	4.3	3.8	8.7	0.0	3.5	2.6	0.6	-	
Tortoise Capital	97,976,794	11.2	4.6	5.8	8.8	8.8	5.7	5.0	5.1	9.9	-0.1	4.3	4.8	0.9	6.3	Dec-92
BBgBarc US Aggregate TR			2.9	6.1	8.7	8.7	5.3	4.3	3.8	8.7	0.0	3.5	2.6	0.6	5.6	Dec-92
MacKay Shields Core Plus Opportunities	95,183,998	10.9	5.6	5.5	8.5	8.5	5.2	4.3		9.7	-1.0	4.5	4.7		3.7	Mar-15
BBgBarc US Aggregate TR			2.9	6.1	8.7	8.7	5.3	4.3		8.7	0.0	3.5	2.6		3.8	Mar-15
BlackRock US TIPS	41,865,786	4.8	4.4	6.1	8.4	8.4	5.1	3.8	3.6	8.5	-1.2	3.2	4.8	-1.3	4.4	Apr-07
BBgBarc US TIPS TR			4.2	6.0	8.3	8.3	5.0	3.7	3.5	8.4	-1.3	3.0	4.7	-1.4	4.3	Apr-07



Total Fund Performance Summary (Net of Fees)

Period Ending: June 30, 2020

	Market Value	Portiolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016		Inception I	nception Date
Total Real Estate	98,591,336	11.3	-1.0	0.3	2.7	2.7	5.4	6.5	10.2	5.6	7.5	5.8	6.5	15.0		
NCREIF ODCE			-1.6	-0.6	2.2	2.2	5.1	6.6	9.6	5.3	7.1	7.0	8.0	13.3		
ASB Real Estate	28,984,198	3.3	-0.8	0.7	8.0	0.8	4.3	5.4		3.0	6.6	4.0	4.6	16.2	7.9	Dec-12
NCREIF-ODCE			-1.6	-0.6	2.2	2.2	5.7	7.3		5.3	8.3	7.6	8.8	15.0	9.4	Dec-12
NCREIF Property Index			-1.0	-0.3	2.7	2.7	5.4	6.8		6.4	6.7	7.0	8.0	13.3	8.5	Dec-12
Clarion Lion	29,918,343	3.4	-2.1	-1.0	2.2	2.2	5.8	7.2	11.0	6.3	8.6	7.9	8.0	14.6	4.4	Dec-06
NCREIF-ODCE			-1.6	-0.6	2.2	2.2	5.7	7.3	10.8	5.3	8.3	7.6	8.8	15.0	5.8	Dec-06
NCREIF Property Index			-1.0	-0.3	2.7	2.7	5.4	6.8	9.7	6.4	6.7	7.0	8.0	13.3	6.6	Dec-06
ARA American Strategic Value Realty	37,744,450	4.3	-0.3	1.0	4.8	4.8				7.8					6.9	Jan-18
NCREIF ODCE +2%			-1.1	0.4	4.3	4.3			-	7.4					6.6	Jan-18
1221 State St. Corp	1,944,344	0.2	0.0	0.0	7.9	7.9	2.6	4.9	1.8	7.9	0.0	0.0	17.5	0.0	1.7	Sep-08
Total Private Equity																
Harbourvest Buyout IX	6,894,784	0.8	-7.2	-3.4	5.2	5.2	15.0	15.8		17.6	23.6	23.2	13.7	18.0	-	Sep-11
Harbourvest Credit Ops IX	1,149,886	0.1	-14.3	-12.1	-8.2	-8.2	6.9	8.1		8.0	14.4	17.5	8.5	12.8		Sep-11
Harbourvest International PE VI	2,287,497	0.3	-7.6	-6.1	-11.0	-11.0	6.1	7.9	-0.1	-2.9	14.8	19.4	12.2	8.3		Jun-10
Harbourvest Venture IX	4,386,581	0.5	-0.2	3.8	16.7	16.7	19.4	15.5		24.6	25.9	9.4	5.3	22.4		Sep-11
Harbourvest 2017 Global Fund	15,946,435	1.8	-11.2	-7.1	-0.3	-0.3				8.8	20.9				10.4	Sep-17
Harbourvest 2018 Global Fund	7,158,304	0.8	-5.7	-6.3	4.7	4.7				14.3					4.4	Dec-18
Harbourvest 2019 Global Fund	1,899,920	0.2	-20.0	-20.0											-20.0	Dec-19
Russell 3000 + 3%			22.9	-2.0											1.0	Dec-19
Total Private Credit																
Portfolio Advisors	27,669,999	3.2	0.1	2.3	7.0	7.0				9.4	6.7				6.8	Oct-17
BBgBarc High Yield +2% (Lagged)			-12.2	-9.5	-5.1	-5.1				8.5	5.1				1.6	Oct-17
Total Opportunistic																
KKR Mezzanine Partners	2,112,794	0.2	-2.0	-0.5	2.9	2.9	7.6	6.6		-4.2	25.3	8.7	4.0	4.1	9.7	Apr-11
PIMCO BRAVO	84,409	0.0	-42.7	-52.9	-62.8	-62.8	-25.9	-16.8		-49.1	77.8	-12.4	11.2	1.0	-0.2	May-11
Total Cash																
Cash Account	1,706,188	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0		
91 Day T-Bills			0.0	0.4	1.3	1.3	1.7	1.1	0.6	2.1	1.9	0.9	0.3	0.0		



3 Years												
	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio	
BlackRock Russell 3000	10.08%	0.03%	17.69%	0.04%	1.00	0.03%	1.00	0.48	1.00	100.12%	99.97%	
BlackRock International Equity	1.10%	-0.20%	15.19%	-0.20%	1.00	0.18%	1.00	-0.04	-1.11	99.90%	100.66%	
DFA Emerging Markets Value	-3.72%	-1.57%	20.83%	-1.38%	1.09	3.80%	0.97	-0.26	-0.41	100.90%	104.26%	
Harding Loevner Emerging Markets	-1.74%	-8.18%	20.51%	-8.47%	1.04	5.12%	0.94	-0.17	-1.60	79.89%	111.18%	
Tortoise Capital	5.67%	0.35%	3.45%	0.51%	0.97	1.37%	0.84	1.14	0.26	105.67%	101.71%	
MacKay Shields Core Plus Opportunities	5.18%	-0.14%	4.00%	-0.46%	1.06	2.00%	0.75	0.88	-0.07	107.91%	129.50%	
BlackRock US TIPS	5.13%	0.09%	3.70%	0.03%	1.01	0.09%	1.00	0.92	0.95	101.45%	100.59%	
ASB Real Estate	4.25%	-1.41%	2.53%	0.29%	0.70	1.64%	0.71	1.00	-0.86	71.56%	49.74%	
Clarion Lion	5.82%	0.15%	3.28%	-0.23%	1.07	0.52%	0.98	1.25	0.29	105.96%	134.60%	

5 Years													
	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio		
BlackRock International Equity	2.35%	-0.20%	14.44%	-0.20%	1.00	0.14%	1.00	0.08	-1.41	99.63%	100.47%		
DFA Emerging Markets Value	0.10%	0.41%	19.89%	0.43%	1.06	3.41%	0.97	-0.05	0.12	109.80%	101.83%		
Tortoise Capital	4.98%	0.68%	3.21%	0.81%	0.97	1.20%	0.86	1.19	0.57	110.90%	96.92%		
MacKay Shields Core Plus Opportunities	4.26%	-0.04%	3.63%	-0.07%	1.01	1.90%	0.73	0.86	-0.02	108.16%	121.17%		
BlackRock US TIPS	3.84%	0.09%	3.53%	0.06%	1.01	0.10%	1.00	0.76	0.95	101.72%	100.34%		
ASB Real Estate	5.38%	-1.93%	3.42%	-0.58%	0.81	1.94%	0.72	1.23	-1.00	72.21%	49.74%		
Clarion Lion	7.18%	-0.13%	3.73%	-0.32%	1.03	0.78%	0.96	1.62	-0.17	103.30%	134.60%		



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
2011	HarbourVest IX-Buyout	\$6,894,784	\$10,000,000	\$8,525,000	85%	\$1,475,000	\$6,967,251	\$7,871,859	81.7%	162.6%	16.2%	3/31/20
2011	HarbourVest IX-Credit	\$1,149,886	\$2,000,000	\$1,600,000	80%	\$400,000	\$1,023,695	\$1,316,167	64.0%	135.8%	10.4%	3/31/20
2008	HarbourVest Int'l VI ⁵	\$2,287,497	\$3,712,930	\$2,630,078	71%	\$1,082,852	\$2,176,140	\$2,667,015	82.7%	169.7%	13.3%	3/31/20
2011	HarbourVest IX-Venture	\$4,386,581	\$4,000,000	\$3,800,000	95%	\$200,000	\$3,082,097	\$4,895,136	81.1%	196.5%	17.3%	3/31/20
2017	HarbourVest 2017 Global	\$15,946,435	\$30,000,000	\$16,050,000	54%	\$13,950,000	\$2,260,137	\$14,391,861	14.1%	113.4%	6.2%	3/31/20
2018	HarbourVest 2018 Global	\$7,158,304	\$20,000,000	\$6,300,000	32%	\$13,700,000	\$0	\$3,958,794	0.0%	113.6%	-1.6%	3/31/20
2019	HarbourVest 2019 Global	\$1,899,920	\$20,000,000	\$2,100,000	11%	\$17,900,000	\$0	N/A	N/A	N/A	N/A	N/A
	Total Illiquid Private Equity	\$39,723,407	\$89,712,930	\$41,005,078	46%	\$48,707,852	\$15,509,320	\$35,100,832	85.6%	123.4%		
	% of Portfolio (Market Value)	4.5%						Management	Admin	Interest	Other	Total
								Fee	Fee	Expense	Expense	Expense ⁶
						HarbourVest IX	X-Buyout	\$24,908	\$0	\$645	\$4,678	\$30,231
						HarbourVest IX	X-Credit	\$37,317	\$0	\$166	\$12,005	\$49,488
						HarbourVest Ir	nt'l VI	\$6,056	\$0	\$78	\$31	\$6,165
						HarbourVest IX	X-Venture	\$9,982	\$0	\$551	\$39	\$10,572
						HarbourVest 2	017 Global	\$66,000	\$0	\$22,431	\$55,809	\$144,240

HarbourVest 2018 Global

HarbourVest 2019 Global

\$32,707

\$176,970

\$0



\$0

\$0

\$0

\$19

\$0

\$23,890

\$28,266

\$0

\$100,828 **\$301,688**

\$60,992

\$0

¹(DPI) is equal to (capital returned / capital called)

²(TVPI) is equal to (market value + capital returned) / capital called

³Last known market value + capital calls - distributions (preliminary MV's as of 3/31/20)

⁴Net 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.

⁵HarbourVest International Private Equity Partners VI-Partnership Fund L.P. values are originally presented in euros and are calculated to dollars using XE™.

⁶All fees and expenses are for 1Q 2020

		Estimated 6/30	Total	Capital	%	Remaining	Capital	Market Value	Distrib./ Paid-In	Tot. Value/ Paid-In	Net IRR Since	IRR
Vintage	Manager & Fund Name	Market Value ³	Commitment	Called	Called	Commitment	Returned	for IRR	(DPI) ¹	(TVPI) ²	Inception ⁴	Date
2013	Portfolio Advisors Credit Strategies Fund	\$13,263,773	\$11,250,000	\$11,250,000	100%	\$0	\$0	\$12,436,215	0.0%	117.9%	8.7%	12/31/19
2017	Crescent Direct Lending Levered Fund II	\$5,806,003	\$7,000,000	\$5,707,507	82%	\$1,292,493	\$48,772	\$3,470,456	0.9%	102.6%	11.4%	9/30/19
2017	Audax Direct Lending Fund A	\$2,693,584	\$7,000,000	\$1,873,721	27%	\$5,126,279	\$106,960	NA	5.7%	149.5%	NM^6	NM^6
2018	Ares Capital Europe IV	\$5,752,834	\$8,000,000	\$4,146,161	52%	\$3,853,839	\$81,940	NA	2.0%	140.7%	NM^7	NM^7
2019	Lone Star Fund XI	\$153,804	\$5,750,000	\$263,253	5%	\$5,486,747	\$0	NA	0.0%	58.4%	20.4%	9/30/19
2019	Ascribe Opportunities IV	\$0	\$6,000,000	\$0	0%	\$6,000,000	\$0	NA	NA	NA	NA	NA
	Total Illiquid Private Credit	\$27,669,999	\$45,000,000	\$23,240,642	52%	\$21,759,358	\$237,672	\$15,906,671	68.4%	69.5%		
	% of Portfolio (Market Value)	3.2%					Management	Accrued	Admin	Interest	Other	Total
	,						Fee	Carried Interest	Fee	Expense	Expense	Expense ⁵
					Portfolio Ad	lvisors CSF	\$0	\$9,303	\$0	\$0	\$0	\$9,303
					Crescent D	irect Lending II	\$0	\$0	\$0	\$0	\$0	\$0
					Audax Dire	ct Lending A	\$19,648	\$0	\$0	\$0	\$60,425	\$80,073
					Ares Capita	al Europe IV	\$17,189	\$19,564	\$4,309	\$26,728	\$0	\$67,790
					Ascribe Op	portunities IV	\$0	\$0	\$0	\$0	\$0	\$0
					Lone Star F	und XI	\$0	\$0	\$0	\$0	\$0	\$0

\$36,837

\$28,867



\$4,309

\$26.728

\$60,425 **\$157,166**

¹(DPI) is equal to (capital returned / capital called)

²(TVPI) is equal to (market value + capital returned) / capital called

³Last known market value + capital calls - distributions (preliminary MV's as of 3/31/20)

⁴Net 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.

⁵All fees and expenses are for 1Q 2020

⁶The Fund issued its first capital call on October 26, 2018. As such it does not consider the IRR to be meaningful.

⁷Given 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.

Vintage	Manager & Fund Name	Estimated 6/30 Market Value ³	Total Commitment	Capital 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	\$2,112,794	\$10,000,000	\$10,000,000	100%	\$0	\$13,137,486	\$2,251,093	131.4%	152.5%	8.2%	9/30/19
2011	PIMCO BRAVO ⁴	\$84,409	\$10,000,000	\$10,000,000	100%	\$0	\$18,054,734	\$138,288	180.5%	181.4%	22.1%	9/30/19
	Total Illiquid Opportunistic % of Portfolio (Market Value)	\$2,197,203	\$20,000,000	\$20,000,000	100%	\$0	\$31,192,220 Management	\$2,389,381	11.9% Admin	167.9%	Other	Total
	% of Fortiono (warker value)	0.5 /6					Fee	Carried Interest	Fee	Expense	Expense	Expense ⁷
							1 00	Ourried interest	1 00	Expense	Ехрепзе	Expense
					KKR Mezza	anine	\$0	\$0	\$0	\$0	\$0	\$0
				_	PIMCO BRA	AVO	\$0	\$0	\$0	\$0	\$0	\$0
							\$0	\$0	\$0	\$0	soF	\$0



¹(DPI) is equal to (capital returned / capital called)

²(TVPI) is equal to (market value + capital returned) / capital called

³Last known market value + capital calls - distributions (preliminary MV's as of 6/30/2020)

⁴Investment period ended, no further capital to be called.

⁵Net 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.

⁶KKR: Total capital called is \$11,574,098, which includes recycled distributions. Unused capital commitment is \$839,888 after including distribution proceeds available for reinvestment

⁷All fees and expenses are for 1Q 2020

Vintage	Manager & Fund Name	Estimated 6/30 Market Value ³	Total Commitment	Capital 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	\$2,112,794	\$10,000,000	\$10,000,000	100%	\$0	\$13,137,486	\$2,251,093	131.4%	152.5%	8.2%	9/30/19
2011	PIMCO BRAVO ⁴	\$84,409	\$10,000,000	\$10,000,000	100%	\$0	\$18,054,734	\$138,288	180.5%	181.4%	22.1%	9/30/19
	Total Illiquid Opportunistic % of Portfolio (Market Value)	\$2,197,203	\$20,000,000	\$20,000,000	100%	\$0	\$31,192,220 Management	\$2,389,381	11.9% Admin	167.9%	Other	Total
	, a of the fine (market value)	0.070					Fee	Carried Interest	Fee	Expense	Expense	Expense ⁷
					KKR Mezza	anine	\$0	\$0	\$0	\$0	\$0	\$0
					PIMCO BRA	AVO	\$0	\$0	\$0	\$0	\$0	\$0
				_			\$0	\$0	\$0	\$0	soF	\$0



¹(DPI) is equal to (capital returned / capital called)

²(TVPI) is equal to (market value + capital returned) / capital called

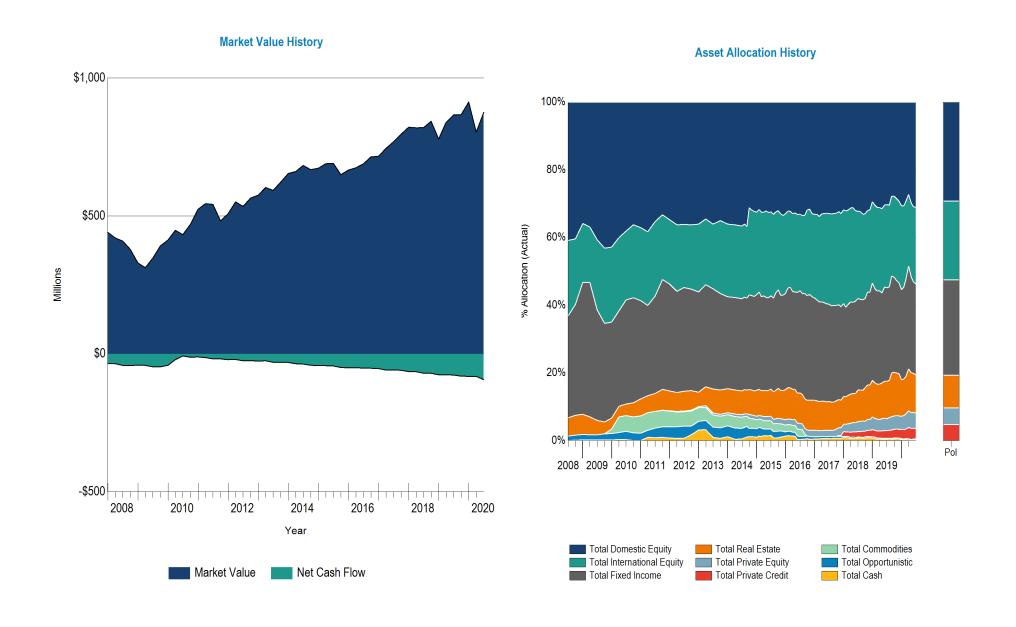
³Last known market value + capital calls - distributions (preliminary MV's as of 6/30/2020)

⁴Investment period ended, no further capital to be called.

⁵Net 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.

⁶KKR: Total capital called is \$11,574,098, which includes recycled distributions. Unused capital commitment is \$839,888 after including distribution proceeds available for reinvestment

⁷All fees and expenses are for 1Q 2020





Current	Pol	icy
31.0%	29.	0%
22.7%	24.	0%
26.8%	27.	0%
11.3%	10.	0%
4.5%	5.0)%
$\frac{3.2\%}{0.2\%}$	5.0 0.0	

	Current Balance	Current Allocation	Policy	Difference	Policy Range	Within IPS Range?
Domestic Equity	\$271,729,161	31.0%	29.0%	\$17,877,144	19.0% - 39.0%	Yes
International Equity	\$198,707,912	22.7%	24.0%	-\$11,376,515	14.0% - 34.0%	Yes
Domestic Fixed Income	\$235,026,577	26.8%	27.0%	-\$1,318,404	17.0% - 40.0%	Yes
Real Estate	\$98,591,336	11.3%	10.0%	\$11,056,158	5.0% - 15.0%	Yes
Private Equity	\$39,723,407	4.5%	5.0%	-\$4,044,182	0.0% - 10.0%	Yes
Private Credit	\$27,669,999	3.2%	5.0%	-\$16,097,591	0.0% - 10.0%	Yes
Cash and Equivalents	\$1,706,188	0.2%	0.0%	\$1,706,188	0.0% - 0.0%	No
Other	\$2,197,203	0.3%	0.0%	\$2,197,203	0.0% - 10.0%	Yes
Total	\$875,351,783	100.0%	100.0%			



Total Fund Investment Fee Analysis

Period Ending: June 30, 2020

Account	Fee Schedule	Market Value As of 6/30/2020	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
1221 State St. Corp	No Fee	\$1,944,344	0.2%		
ARA American Strategic Value Realty	1.25% of First 10.0 Mil, 1.20% of Next 15.0 Mil, 1.10% of Next 25.0 Mil, 1.00% Thereafter	\$37,744,450	4.4%	\$445,189	1.18%
ASB Real Estate	1.25% of First 5.0 Mil, 1.00% of Next 10.0 Mil, 0.75% Thereafter	\$28,984,198	3.4%	\$267,381	0.92%
BlackRock International Equity	0.15% of First 50.0 Mil, 0.10% of Next 50.0 Mil	\$139,420,022	16.2%	\$125,000	0.09%
BlackRock Russell 3000	0.03% of Assets	\$271,729,161	31.6%	\$81,519	0.03%
BlackRock US TIPS	0.07% of Assets	\$41,865,786	4.9%	\$29,306	0.07%
Cash Account	No Fee	\$1,706,188	0.2%		
Clarion Lion	No Fee	\$29,918,343	3.5%	-	-
DFA Emerging Markets Value	0.54% of Assets	\$26,835,109	3.1%	\$144,910	0.54%
Harbourvest 2017 Global Fund	262,500 Annually	\$15,946,435	1.9%	\$262,500	1.65%
Harbourvest 2018 Global Fund	138,000 Annually	\$7,158,304	0.8%	\$138,000	1.93%
Harbourvest 2019 Global Fund	0.45% of Assets	\$1,899,920	0.2%	\$8,550	0.45%
Harbourvest Buyout IX	100,000 Annually	\$6,894,784	0.8%	\$100,000	1.45%
Harbourvest Credit Ops IX	20,000 Annually	\$1,149,886	0.1%	\$20,000	1.74%
Harbourvest International PE VI	35,000 Annually	\$2,287,497	0.3%	\$35,000	1.53%
Harbourvest Venture IX	40,000 Annually	\$4,386,581	0.5%	\$40,000	0.91%
Harding Loevner Emerging Markets	1.05% of Assets	\$32,452,781	3.8%	\$340,754	1.05%
KKR Mezzanine Partners	150,000 Annually	\$2,112,794	0.2%	\$150,000	7.10%
MacKay Shields Core Plus Opportunities	0.35% of Assets	\$95,183,998	11.1%	\$333,144	0.35%
PIMCO BRAVO	1.90% of Assets	\$84,409	0.0%	\$1,604	1.90%
Portfolio Advisors Credit Strategies Fund	180,000 Annually	\$13,263,773	1.5%	\$180,000	1.36%
Tortoise Capital	0.29% of First 100.0 Mil, 0.25% of Next 100.0 Mil	\$97,976,794	11.4%	\$279,234	0.28%
Investment Management Fee		\$860,945,557	100.0%	\$2,982,090	0.35%

^{*}HarbourVest funds annual fee amounts calculated by applying the average annual fee charged to each fund over its expected lifecycle by its respective capital commitment.



^{*}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.

^{*}Total fund market value excludes other investments managed by Portfolio Advisors.

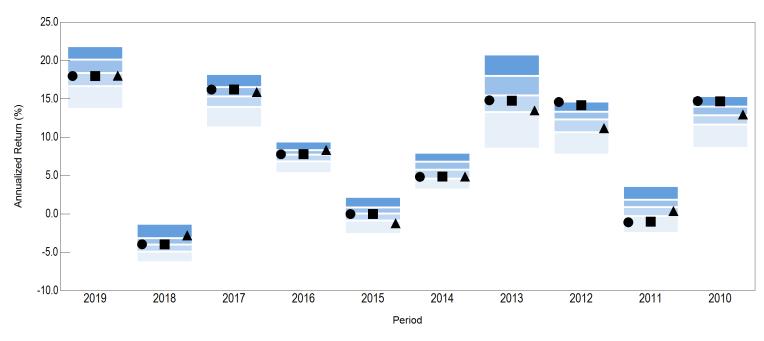
Total Fund Cumulative Performance vs. InvMetrics Public DB Gross



	Return (Ra	ınk)															
5th Percentile	16.2		0.2		6.4		6.4		7.4		7.2		8.3		9.5		_
25th Percentile	13.7		-1.6		4.3		4.3		6.5		6.4		7.5		8.7		
Median	12.3		-2.9		2.9		2.9		5.7		5.9		6.9		8.0		
75th Percentile	10.5		-4.1		1.5		1.5		4.9		5.3		6.2		7.3		
95th Percentile	6.1		-6.1		-0.9		-0.9		3.1		3.7		4.8		6.0		
# of Portfolios	383		380		378		378		363		354		333		301		
 Total Fund Total Fund ex Parametric Policy Index 	10.4 10.4 10.7	(77 [′])	-2.8 -2.8 -1.6	(48) (48) (25)	3.1 3.1 4.6	(48) (48) (20)	3.1 3.1 4.6	(48) (48) (20)	5.8 5.8 6.6	(45) (45) (22)	6.1 6.1 6.4	(43) (43) (22)	6.9 6.9 7.0	(47) (46) (44)	8.3 8.2 8.0	(42) (44) (51)	



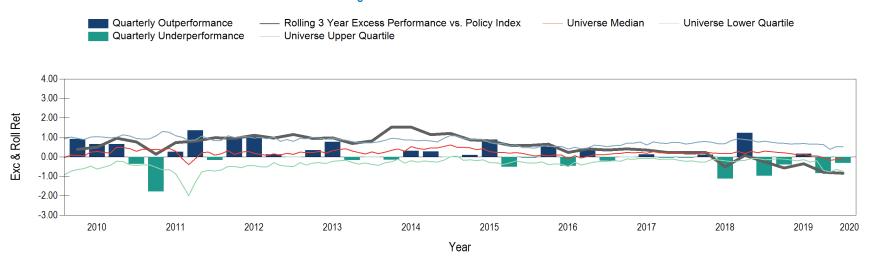
Total Fund Consecutive Periods vs. InvMetrics Public DB Gross



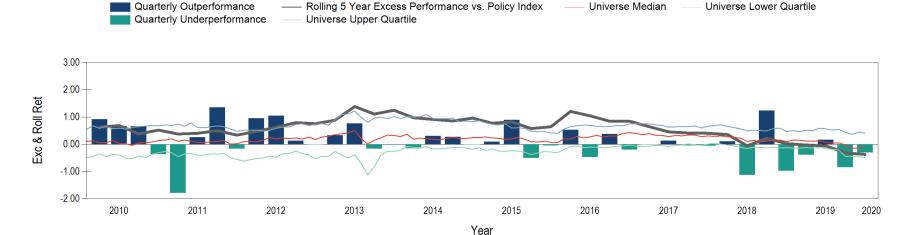
	Return (Rank)									
5th Percentile	21.9	-1.3	18.2	9.4	2.2	8.0	20.8	14.6	3.6	15.4
25th Percentile	20.1	-3.1	16.5	8.4	0.9	6.8	18.0	13.4	1.9	14.0
Median	18.4	-4.0	15.3	7.7	0.1	5.8	15.5	12.4	0.9	12.9
75th Percentile	16.7	-4.9	14.0	6.9	-0.9	4.6	13.3	10.7	-0.3	11.7
95th Percentile	13.7	-6.3	11.3	5.3	-2.6	3.2	8.5	7.8	-2.5	8.6
# of Portfolios	330	319	304	305	316	248	231	236	206	188
Total Fund	18.0 (58)	-4.0 (50)	16.2 (30)	7.8 (49)	0.0 (53)	4.8 (74)	14.8 (59)	14.6 (6)	-1.1 (89)	14.7 (13)
Total Fund ex Parametric	18.0 (58)	-4.0 (50)	16.2 (30)	7.8 (49)	0.0 (53)	4.9 (72)	14.7 (59)	14.2 (11)	-1.0 (88)	14.7 (15)
▲ Policy Index	18.0 (57)	-2.8 (18)	15.9 (40)	8.3 (26)	-1.2 (81)	4.9 (72)	13.5 (74)	11.2 (72)	0.4 (63)	13.0 (49)



Rolling 3 Year Annualized Excess Performance



Rolling 5 Year Annualized Excess Performance



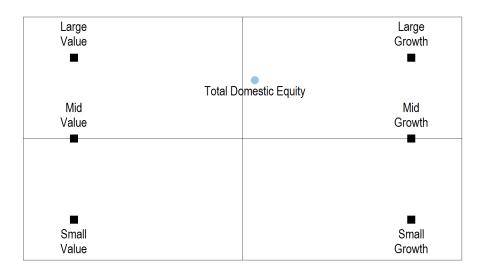


	Market Value	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Total Domestic Equity	271,729,161	22.1	-3.4	6.6	6.6	10.1	10.0	13.6	31.1	-5.2	21.2	12.9	0.3
Russell 3000		22.0	-3.5	6.5	6.5	10.0	10.0	13.7	31.0	-5.2	21.1	12.7	0.5
InvMetrics Public DB US Eq Gross Rank		39	12	8	8	11	13	22	17	35	35	51	44
BlackRock Russell 3000	271,729,161	22.1	-3.4	6.6	6.6	10.1			31.1	-5.2	21.2	12.9	
Russell 3000		22.0	-3.5	6.5	6.5	10.0			31.0	-5.2	21.1	12.7	
eV US All Cap Core Equity Gross Rank		38	46	44	44	40			42	49	49	35	

U.S. Effective Style Map 3 Years Ending June 30, 2020



U.S. Effective Style Map 5 Years Ending June 30, 2020





	Market Value	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Total Domestic Equity	271,729,161	22.0	-3.4	6.6	6.6	10.1	9.9	13.4	31.1	-5.2	21.2	12.8	0.1
Russell 3000		22.0	-3.5	6.5	6.5	10.0	10.0	13.7	31.0	-5.2	21.1	12.7	0.5
BlackRock Russell 3000	271,729,161	22.0	-3.4	6.6	6.6	10.1			31.1	-5.2	21.2	12.8	
Russell 3000		22.0	-3.5	6.5	6.5	10.0			31.0	-5.2	21.1	12.7	

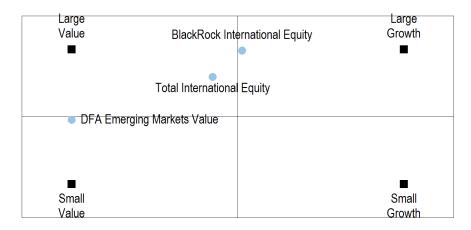


	Market Value	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Total International Equity	198,707,912	16.0	-12.9	-7.1	-7.1	0.2	2.3	4.9	21.0	-14.0	28.3	4.7	-3.5
MSCI ACWI ex USA Gross		16.3	-10.8	-4.4	-4.4	1.6	2.7	5.5	22.1	-13.8	27.8	5.0	-5.3
InvMetrics Public DB ex-US Eq Gross Rank		84	88	92	92	78	65	89	78	35	59	40	57
BlackRock International Equity	139,420,022	15.1	-11.1	-4.8	-4.8	1.2	2.4	6.1	22.5	-13.4	25.5	1.5	-0.5
MSCI EAFE Gross		15.1	-11.1	-4.7	-4.7	1.3	2.5	6.2	22.7	-13.4	25.6	1.5	-0.4
eV All EAFE Equity Gross Rank		71	50	56	56	52	57	74	56	35	65	47	67
DFA Emerging Markets Value	26,835,109	19.3	-18.6	-16.7	-16.7	-3.2	0.7	1.4	10.3	-11.4	34.5	20.5	-18.3
MSCI Emerging Markets Value GR		14.0	-17.9	-15.3	-15.3	-2.1	-0.3	1.1	12.5	-10.3	28.7	15.5	-18.2
eV Emg Mkts All Cap Value Equity Gross Rank		28	67	87	87	75	77	99	88	29	47	22	81
Harding Loevner Emerging Markets	32,452,781	17.3	-15.2	-8.1	-8.1	-0.7			25.4	-18.6	35.0		
MSCI Emerging Markets Growth GR		22.1	-1.4	9.9	9.9	6.4			25.4	-18.0	47.1		
eV Emg Mkts All Cap Growth Equity Gross Rank		98	98	98	98	98			54	71	91		

EAFE Effective Style Map 3 Years Ending Jun 30, 2020



EAFE Effective Style Map 5 Years Ending Jun 30, 2020





	Market Value	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Total International Equity	198,707,912	15.9	-13.0	-7.4	-7.4	-0.1	2.0	4.4	20.7	-14.3	27.9	4.4	-4.0
MSCI ACWI ex USA Gross		16.3	-10.8	-4.4	-4.4	1.6	2.7	5.5	22.1	-13.8	27.8	5.0	-5.3
BlackRock International Equity	139,420,022	15.0	-11.2	-4.9	-4.9	1.1	2.3	6.0	22.4	-13.5	25.4	1.3	-0.6
MSCI EAFE Gross		15.1	-11.1	-4.7	-4.7	1.3	2.5	6.2	22.7	-13.4	25.6	1.5	-0.4
DFA Emerging Markets Value	26,835,109	19.1	-18.9	-17.2	-17.2	-3.7	0.1	0.8	9.6	-11.9	33.8	19.8	-18.8
MSCI Emerging Markets Value GR		14.0	-17.9	-15.3	-15.3	-2.1	-0.3	1.1	12.5	-10.3	28.7	15.5	-18.2
Harding Loevner Emerging Markets	32,452,781	17.0	-15.7	-9.1	-9.1	-1.7			24.0	-19.5	33.6		
MSCI Emerging Markets Growth GR		22.1	-1.4	9.9	9.9	6.4			25.4	-18.0	47.1		-

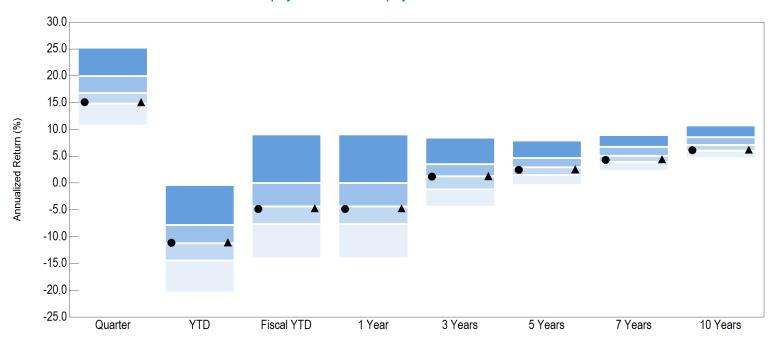
EM Effective Style Map 3 Years 6 Months Ending Jun 30, 2020



EM Effective Style Map 5 Years 6 Months Ending Jun 30, 2020



BlackRock International Equity vs. eV All EAFE Equity Gross Universe



	Return (R	ank)														
5th Percentile	25.2		-0.4		9.0		9.0		8.5		7.9		8.9		10.7	
25th Percentile	20.0		-7.8		0.0		0.0		3.5		4.7		6.7		8.5	
Median	16.8		-11.2		-4.3		-4.3		1.3		3.0		5.1		7.1	
75th Percentile	14.8		-14.4		-7.6		-7.6		-1.2		1.5		4.0		6.1	
95th Percentile	10.8		-20.4		-14.0		-14.0		-4.4		-0.4		2.2		4.7	
# of Portfolios	404		404		403		403		383		346		302		261	
BlackRock International EquityMSCI EAFE Gross	15.1 15.1	(-)	-11.1 -11.1	(50) (49)	-4.8 -4.7	(56) (54)	-4.8 -4.7	(56) (54)	1.2 1.3	(52) (49)	2.4 2.5	(57) (55)	4.3 4.4	(67) (63)	6.1 6.2	(74) (71)



BlackRock International Equity vs. eV All EAFE Equity Gross Universe



5th Percentile
25th Percentile
Median
75th Percentile
95th Percentile
of Portfolios

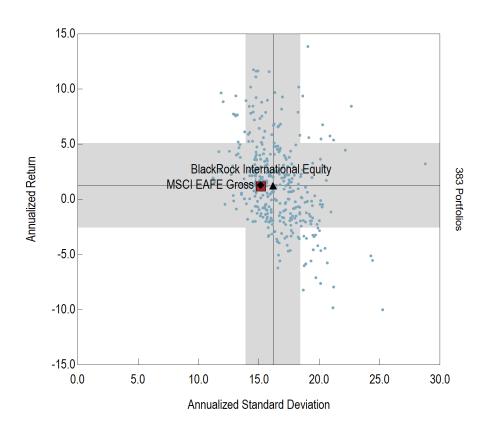
BlackRock International Equity

MSCI EAFE Gross

Return	(Rank)																	
32.9	,	-8.0		39.0		8.1		12.6		3.0		36.3		31.7		-5.1		25.7	
26.1		-12.6		31.6		3.4		5.2		-1.9		28.1		23.1		-9.7		16.1	
23.2		-15.1		27.0		1.3		1.4		-3.7		24.6		20.4		-12.0		11.7	
20.3		-17.8		24.3		-0.6		-0.9		-5.4		20.5		17.5		-14.5		8.7	
16.4		-22.2		19.7		-4.9		-5.4		-8.6		8.6		13.3		-18.2		4.6	
397		391		370		350		325		314		284		263		278		352	
22.5 22.7	(56) (54)	-13.4 -13.4	(35) (35)	25.5 25.6	(65) (63)	1.5 1.5	(47) (47)	-0.5 -0.4	(67) (66)	-4.7 -4.5	(64) (60)	23.2 23.3	(61) (60)	17.8 17.9	(74) (72)	-11.8 -11.7	(48) (47)	8.1 8.2	(79) (78)

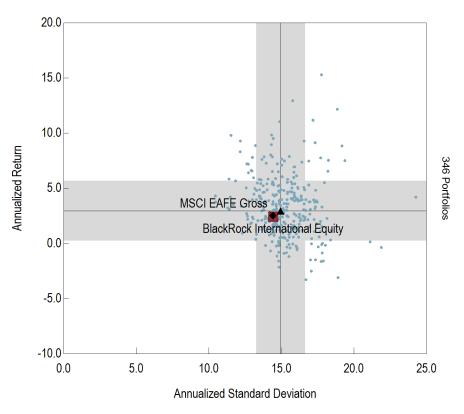


Annualized Return vs. Annualized Standard Deviation 3 Years Ending June 30, 2020



- BlackRock International Equity
- MSCI EAFE Gross
- Universe Median
- 68% Confidence Interval
- eV All EAFE Equity Gross

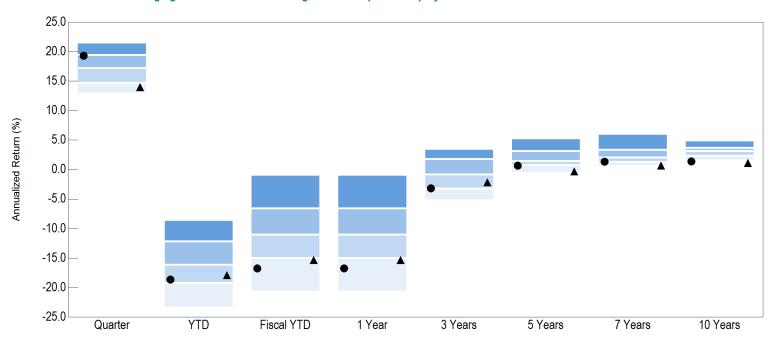
Annualized Return vs. Annualized Standard Deviation 5 Years Ending June 30, 2020



- BlackRock International Equity
- MSCI EAFE Gross
- ▲ Universe Median
- 68% Confidence Interval
- eV All EAFE Equity Gross



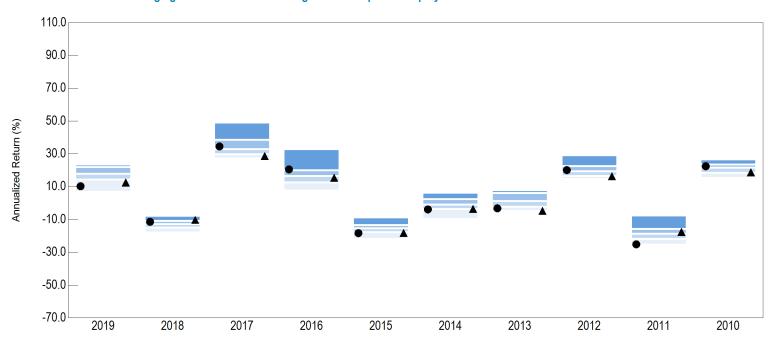
DFA Emerging Markets Value vs. eV Emg Mkts All Cap Value Equity Gross Universe



	Return (R	ank)														
5th Percentile	21.5		-8.6		-0.9		-0.9		3.5		5.3		6.0		4.9	
25th Percentile	19.5		-12.1		-6.6		-6.6		1.8		3.2		3.4		3.7	
Median	17.2		-16.1		-11.0		-11.0		-0.8		1.5		2.1		3.2	
75th Percentile	14.7		-19.2		-15.0		-15.0		-3.2		8.0		1.3		2.3	
95th Percentile	12.9		-23.4		-20.7		-20.7		-5.2		-0.5		0.6		1.6	
# of Portfolios	38		38		38		38		34		30		27		14	
 DFA Emerging Markets Value MSCI Emerging Markets Value GR 	19.3 14.0	(28) (85)	-18.6 -17.9	(67) (61)	-16.7 -15.3	(87) (80)	-16.7 -15.3	(87) (80)	-3.2 -2.1	(75) (67)	0.7 -0.3	(77) (95)	1.3 0.7	(75) (92)	1.4 1.1	(99) (99)



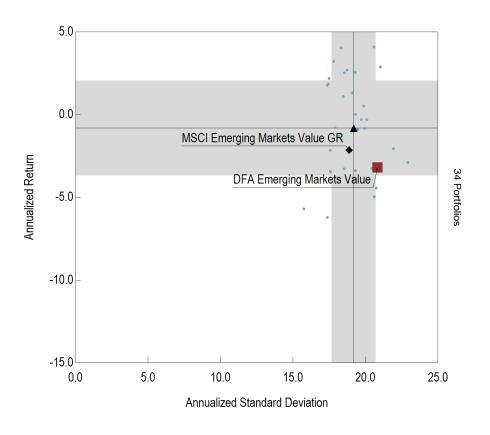
DFA Emerging Markets Value vs. eV Emg Mkts All Cap Value Equity Gross Universe



	Return (Rar	ık)								
5th Percentile	23.5	-7.9	49.0	32.8	-8.8	6.2	7.8	29.1	-7.6	26.6
25th Percentile	22.1	-10.8	38.6	20.1	-13.4	2.5	6.3	22.7	-15.7	23.6
Median	18.0	-12.7	33.0	16.6	-15.3	-0.8	1.3	19.4	-18.5	21.7
75th Percentile	14.4	-14.9	29.8	12.6	-17.6	-3.5	-2.2	16.6	-21.8	18.5
95th Percentile	7.0	-17.8	27.4	7.8	-21.7	-9.6	-4.7	14.8	-25.2	15.4
# of Portfolios	33	36	37	38	35	34	29	22	22	17
 DFA Emerging Markets Value MSCI Emerging Markets Value GR 	10.3 (88 12.5 (86	, ,	34.5 (47) 28.7 (87)	20.5 (22) 15.5 (58)	, ,	-3.9 (76) -3.6 (76)	-3.2 (87) -4.7 (95)	20.1 (39) 16.4 (81)	-25.2 (95) -17.6 (41)	22.4 (47) 18.8 (73)
MOCI Linerging Markets value OK	12.5 (00) -10.5 (25)	20.1 (01)	13.5 (30)) -10.2 (13)	-3.0 (70)	-4 .1 (33)	10.4 (01)	-17.0 (41)	10.0 (13)

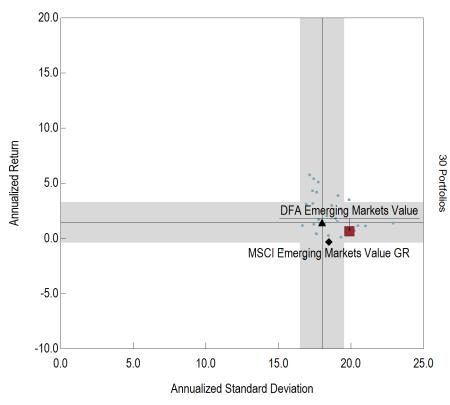


Annualized Return vs. Annualized Standard Deviation 3 Years Ending June 30, 2020



- DFA Emerging Markets Value
- MSCI Emerging Markets Value GR
- Universe Median
- 68% Confidence Interval
- eV Emg Mkts All Cap Value Equity Gross

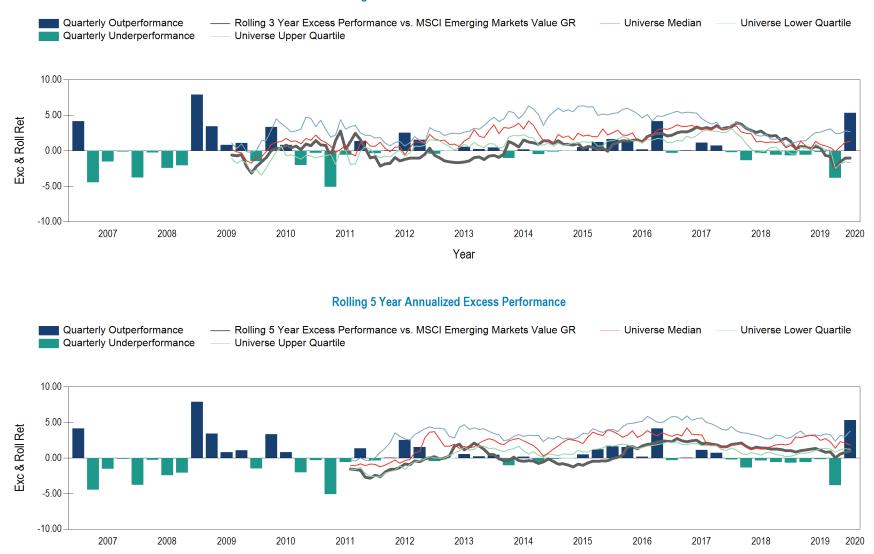
Annualized Return vs. Annualized Standard Deviation 5 Years Ending June 30, 2020



- DFA Emerging Markets Value
- MSCI Emerging Markets Value GR
- Universe Median
- 68% Confidence Interval
- eV Emg Mkts All Cap Value Equity Gross



Rolling 3 Year Annualized Excess Performance

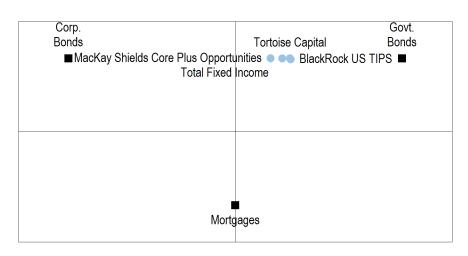


Year

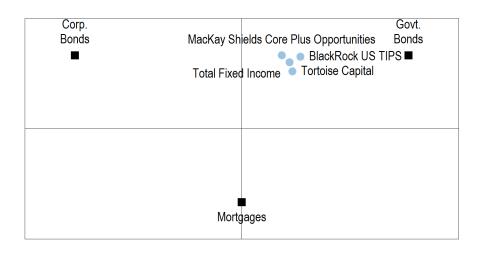


	Market Value	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Total Fixed Income	235,026,577	5.0	5.9	8.9	8.9	5.6	4.8	4.9	9.8	-0.5	4.6	5.1	-0.3
BBgBarc US Aggregate TR		2.9	6.1	8.7	8.7	5.3	4.3	3.8	8.7	0.0	3.5	2.6	0.6
InvMetrics Public DB Total Fix Inc Gross Rank		45	23	11	11	7	19	31	30	58	59	41	55
Tortoise Capital	97,976,794	4.6	6.0	9.2	9.2	6.0	5.3	5.4	10.2	0.2	4.5	5.1	1.2
BBgBarc US Aggregate TR		2.9	6.1	8.7	8.7	5.3	4.3	3.8	8.7	0.0	3.5	2.6	0.6
eV US Core Plus Fixed Inc Gross Rank		78	29	25	25	21	21	26	46	24	70	45	15
MacKay Shields Core Plus Opportunities	95,183,998	5.7	5.7	8.9	8.9	5.5	4.6		10.1	-0.7	4.9	5.1	
BBgBarc US Aggregate TR		2.9	6.1	8.7	8.7	5.3	4.3		8.7	0.0	3.5	2.6	
eV US Core Plus Fixed Inc Gross Rank		53	39	32	32	54	72		53	69	54	46	
BlackRock US TIPS	41,865,786	4.4	6.1	8.5	8.5	5.2	3.9	3.6	8.5	-1.1	3.2	4.8	-1.2
BBgBarc US TIPS TR		4.2	6.0	8.3	8.3	5.0	3.7	3.5	8.4	-1.3	3.0	4.7	-1.4
eV US TIPS / Inflation Fixed Inc Gross Rank		42	30	27	27	32	35	49	48	47	46	37	43

Fixed Income Style Map 3 Years Ending June 30, 2020



Fixed Income Style Map 5 Years Ending June 30, 2020



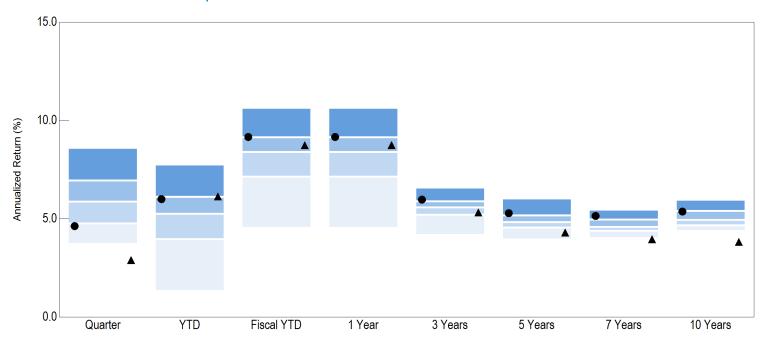
	Market Value	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Total Fixed Income	235,026,577	4.9	5.8	8.6	8.6	5.3	4.5	4.6	9.5	-0.8	4.3	4.8	-0.6
BBgBarc US Aggregate TR		2.9	6.1	8.7	8.7	5.3	4.3	3.8	8.7	0.0	3.5	2.6	0.6
Tortoise Capital	97,976,794	4.6	5.8	8.8	8.8	5.7	5.0	5.1	9.9	-0.1	4.3	4.8	0.9
BBgBarc US Aggregate TR		2.9	6.1	8.7	8.7	5.3	4.3	3.8	8.7	0.0	3.5	2.6	0.6
MacKay Shields Core Plus Opportunities	95,183,998	5.6	5.5	8.5	8.5	5.2	4.3		9.7	-1.0	4.5	4.7	
BBgBarc US Aggregate TR		2.9	6.1	8.7	8.7	5.3	4.3		8.7	0.0	3.5	2.6	
BlackRock US TIPS	41,865,786	4.4	6.1	8.4	8.4	5.1	3.8	3.6	8.5	-1.2	3.2	4.8	-1.3
BBgBarc US TIPS TR		4.2	6.0	8.3	8.3	5.0	3.7	3.5	8.4	-1.3	3.0	4.7	-1.4

Correlation Matrix Last 5 Years

	Total Fixed Income	Tortoise Capital	MacKay Shields Core Plus Opportunities	BlackRock US TIPS	BBgBarc US Aggregate TR	
Total Fixed Income	1.00					
Tortoise Capital	0.99	1.00				
MacKay Shields Core Plus Opportunities	0.99	0.96	1.00			
BlackRock US TIPS	0.90	0.86	0.86	1.00		
BBgBarc US Aggregate TR	0.86	0.91	0.79	0.78	1.00	



Tortoise Capital vs. eV US Core Plus Fixed Inc Gross Universe



	Return (Rar	ık)													
5th Percentile	8.6	7.8		10.6		10.6		6.6		6.0		5.4		6.0	
25th Percentile	7.0	6.1		9.2		9.2		5.9		5.2		5.0		5.4	
Median	5.9	5.3		8.4		8.4		5.6		4.8		4.6		5.0	
75th Percentile	4.8	4.0		7.1		7.1		5.2		4.6		4.4		4.7	
95th Percentile	3.7	1.3		4.6		4.6		4.2		4.0		4.0		4.4	
# of Portfolios	120	120		120		120		115		111		106		102	
Tortoise CapitalBBgBarc US Aggregate TR		(78) 6.0 (99) 6.1	(29) (25)	9.2 8.7	(25) (39)	9.2 8.7	(25) (39)	6.0 5.3	(21) (68)	5.3 4.3	(21) (87)	5.1 4.0	(13) (97)	5.4 3.8	(26) (99)



Tortoise Capital vs. eV US Core Plus Fixed Inc Gross Universe



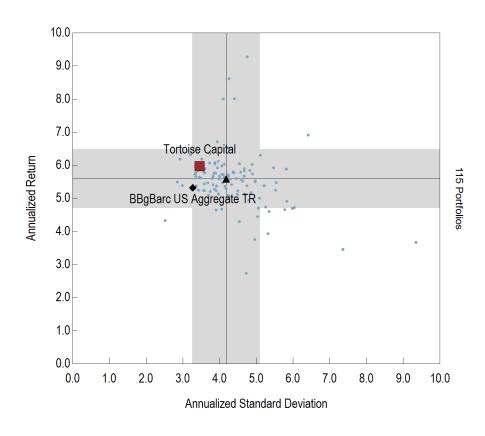
5th Percentile	
25th Percentile	
Median	
75th Percentile	
95th Percentile	
# of Portfolios	
Tortoise Capital	

Tortoise CapitalBBgBarc US Aggregate TR

Return	(Rank)																		
12.4		1.5		7.0		10.1		1.9		7.7		4.6		14.4		8.8		13.6	
10.9		0.1		5.5		6.1		0.9		6.7		1.0		10.2		8.1		10.8	
10.1		-0.3		5.0		4.9		0.3		5.9		-0.4		8.3		7.4		9.1	
9.4		-0.8		4.5		3.9		-0.2		5.2		-1.0		6.7		6.3		8.0	
8.0		-1.6		3.8		2.9		-2.4		3.6		-2.0		5.1		4.4		7.0	
118		120		122		134		115		118		116		124		118		123	
10.2	(46)	0.2	(24)	4.5	(70)	5.1	(45)	1.2	(15)	7.0	(16)	-0.4	(52)	8.8	(45)	7.4	(51)	9.6	(40)
8.7	(91)	0.0	(31)	3.5	(99)	2.6	(97)	0.6	(42)	6.0	(50)	-2.0	(96)	4.2	(97)	7.8	(37)	6.5	(97)

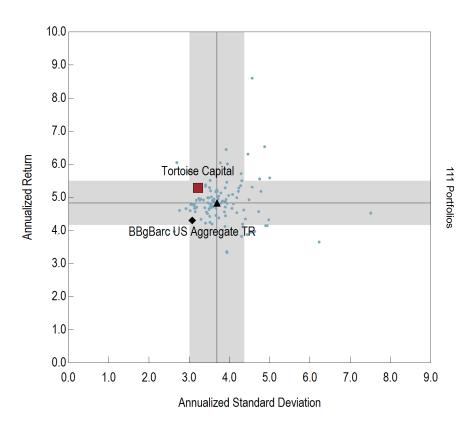


Annualized Return vs. Annualized Standard Deviation 3 Years Ending June 30, 2020



- Tortoise Capital
- BBgBarc US Aggregate TR
- ▲ Universe Median
- 68% Confidence Interval
- eV US Core Plus Fixed Inc Gross

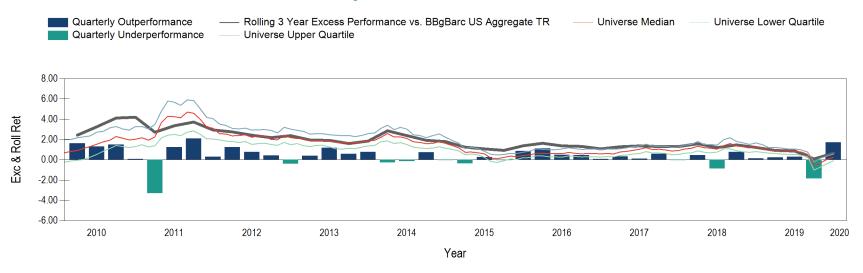
Annualized Return vs. Annualized Standard Deviation 5 Years Ending June 30, 2020



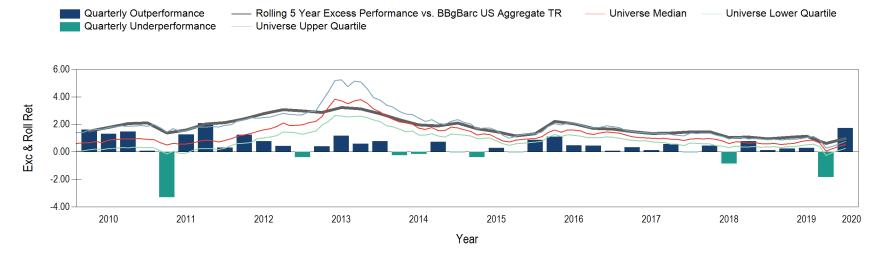
- Tortoise Capital
- BBgBarc US Aggregate TR
- ▲ Universe Median
- 68% Confidence Interval
- eV US Core Plus Fixed Inc Gross



Rolling 3 Year Annualized Excess Performance

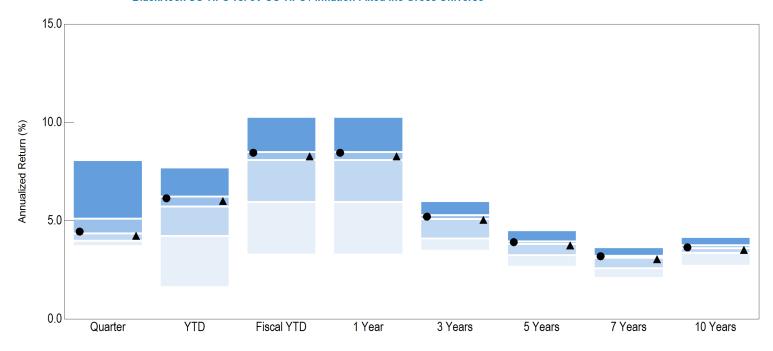


Rolling 5 Year Annualized Excess Performance





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



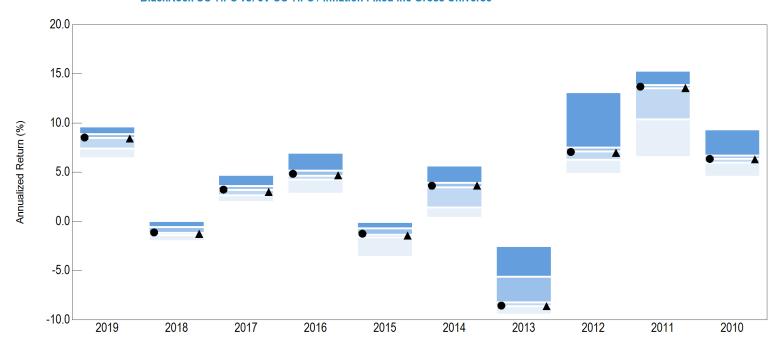
25 M	h Percentile ith Percentile edian
	oth Percentile oth Percentile
_ "	of Portfolios
	BlackRock US T

BlackRock US TIPSBBgBarc US TIPS TR

Return (Ra	ank)														
8.1	-	7.7		10.3		10.3		6.0		4.5		3.7		4.2	
5.1		6.2		8.5		8.5		5.3		4.0		3.2		3.8	
4.4		5.7		8.1		8.1		5.1		3.8		3.1		3.6	
4.0		4.2		6.0		6.0		4.1		3.3		2.6		3.4	
3.7		1.6		3.3		3.3		3.5		2.7		2.1		2.7	
35		35		35		35		35		33		33		30	
4.4 4.2	(42) (69)	6.1 6.0	(30) (40)	8.5 8.3	(27) (43)	8.5 8.3	(27) (43)	5.2 5.0	(32) (56)	3.9 3.7	(35) (58)	3.2 3.0	(38) (58)	3.6 3.5	(49) (70)



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

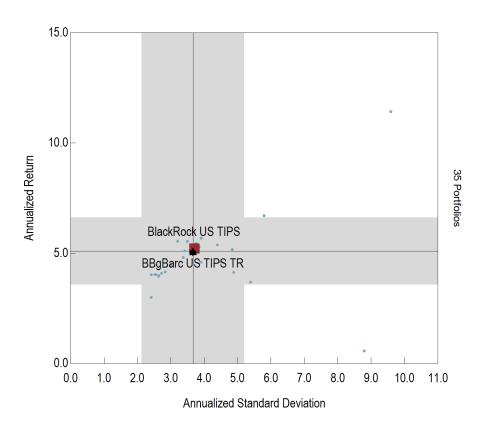


5th Percentile
25th Percentile
Median
75th Percentile
95th Percentile
of Portfolios

	D ()D 1									
	Return (Rank	()								
th Percentile	9.6	0.0	4.7	7.0	-0.1	5.7	-2.5	13.1	15.3	9.4
5th Percentile	8.9	-0.6	3.6	5.2	-0.7	4.0	-5.6	7.5	13.9	6.7
edian	8.5	-1.1	3.2	4.7	-1.3	3.5	-8.2	7.1	13.5	6.4
5th Percentile	7.4	-1.4	2.7	4.3	-1.6	1.4	-8.6	6.3	10.4	6.0
5th Percentile	6.4	-2.0	2.0	2.8	-3.6	0.4	-9.4	4.9	6.6	4.6
of Portfolios	37	41	38	42	44	50	43	43	47	39
BlackRock US TIPS BBgBarc US TIPS TR	8.5 (48) 8.4 (60)	-1.1 (47) -1.3 (65)	3.2 (46) 3.0 (71)	4.8 (37) 4.7 (47)	-1.2 (43) -1.4 (59)	3.6 (45) 3.6 (44)	-8.5 (62) -8.6 (76)	7.1 (59) 7.0 (66)	13.7 (37) 13.6 (49)	6.4 (52) 6.3 (57)

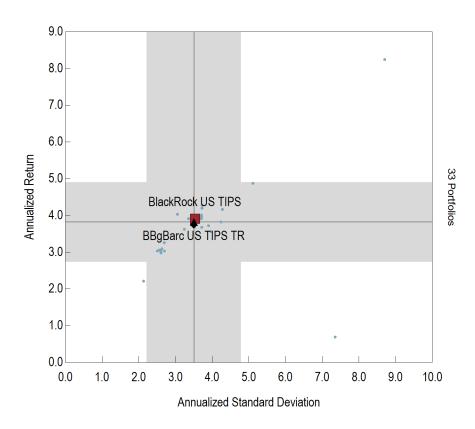


Annualized Return vs. Annualized Standard Deviation 3 Years Ending June 30, 2020



- BlackRock US TIPS
- BBgBarc US TIPS TR
- ▲ Universe Median
- 68% Confidence Interval
- eV US TIPS / Inflation Fixed Inc Gross

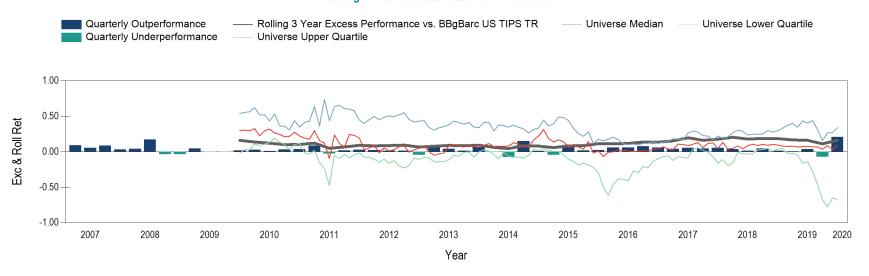
Annualized Return vs. Annualized Standard Deviation 5 Years Ending June 30, 2020



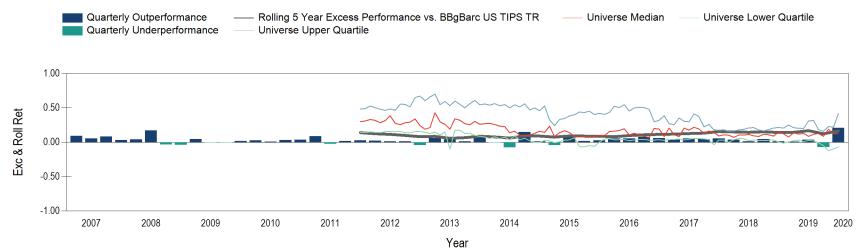
- BlackRock US TIPS
- BBgBarc US TIPS TR
- ▲ Universe Median
- 68% Confidence Interval
- eV US TIPS / Inflation Fixed Inc Gross



Rolling 3 Year Annualized Excess Performance



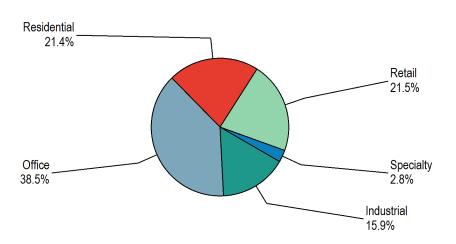
Rolling 5 Year Annualized Excess Performance



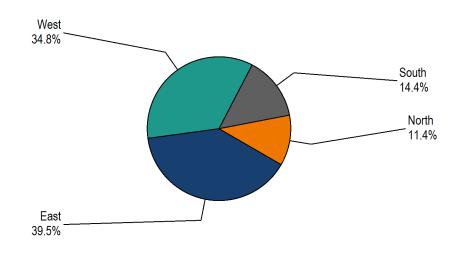


	Market Value	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Total Real Estate	98,591,336	-1.0	0.3	2.7	2.7	5.4	6.8	10.8	5.6	7.5	5.8	7.5	16.1
NCREIF ODCE		-1.6	-0.6	2.2	2.2	5.1	6.6	9.6	5.3	7.1	7.0	8.0	13.3
ASB Real Estate	28,984,198	-0.8	0.7	0.8	0.8	4.3	5.7		3.0	6.6	4.0	5.6	17.3
NCREIF-ODCE		-1.6	-0.6	2.2	2.2	5.7	7.3		5.3	8.3	7.6	8.8	15.0
NCREIF Property Index		-1.0	-0.3	2.7	2.7	5.4	6.8		6.4	6.7	7.0	8.0	13.3
Clarion Lion	29,918,343	-2.1	-1.0	2.2	2.2	5.8	7.5	11.6	6.3	8.6	7.9	9.1	15.7
NCREIF-ODCE		-1.6	-0.6	2.2	2.2	5.7	7.3	10.8	5.3	8.3	7.6	8.8	15.0
NCREIF Property Index		-1.0	-0.3	2.7	2.7	5.4	6.8	9.7	6.4	6.7	7.0	8.0	13.3
ARA American Strategic Value Realty	37,744,450	-0.3	1.0	4.8	4.8				7.8				
NCREIF ODCE +2%		-1.1	0.4	4.3	4.3				7.4				
1221 State St. Corp	1,944,344	0.0	0.0	7.9	7.9	2.6	4.9	1.8	7.9	0.0	0.0	17.5	0.0

Property Type Allocation Allocation as of June 30, 2020



Geographic Diversification
Allocation as of June 30, 2020

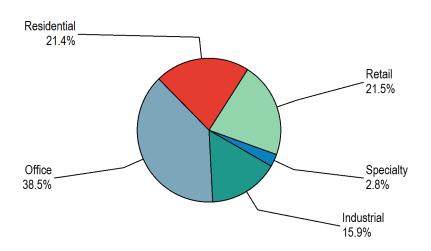


ARA American Strategic Value Realty funded 1/4/2018.

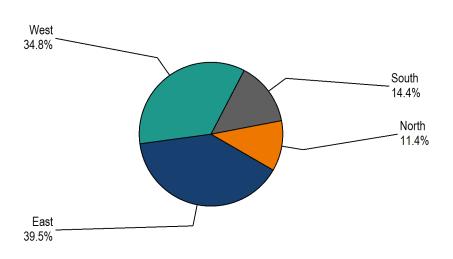


	Market Value	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2019	2018	2017	2016	2015
Total Real Estate	98,591,336	-1.0	0.3	2.7	2.7	5.4	6.5	10.2	5.6	7.5	5.8	6.5	15.0
NCREIF ODCE		-1.6	-0.6	2.2	2.2	5.1	6.6	9.6	5.3	7.1	7.0	8.0	13.3
ASB Real Estate	28,984,198	-0.8	0.7	0.8	8.0	4.3	5.4		3.0	6.6	4.0	4.6	16.2
NCREIF-ODCE		-1.6	-0.6	2.2	2.2	5.7	7.3		5.3	8.3	7.6	8.8	15.0
NCREIF Property Index		-1.0	-0.3	2.7	2.7	5.4	6.8		6.4	6.7	7.0	8.0	13.3
Clarion Lion	29,918,343	-2.1	-1.0	2.2	2.2	5.8	7.2	11.0	6.3	8.6	7.9	8.0	14.6
NCREIF-ODCE		-1.6	-0.6	2.2	2.2	5.7	7.3	10.8	5.3	8.3	7.6	8.8	15.0
NCREIF Property Index		-1.0	-0.3	2.7	2.7	5.4	6.8	9.7	6.4	6.7	7.0	8.0	13.3
ARA American Strategic Value Realty	37,744,450	-0.3	1.0	4.8	4.8				7.8				
NCREIF ODCE +2%		-1.1	0.4	4.3	4.3				7.4				
1221 State St. Corp	1,944,344	0.0	0.0	7.9	7.9	2.6	4.9	1.8	7.9	0.0	0.0	17.5	0.0

Property Type Allocation Allocation as of June 30, 2020



Geographic Diversification Allocation as of June 30, 2020



ARA American Strategic Value Realty funded 1/4/2018.



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
			PIMCO BRAVO	2011 ¹	PIMCO
			ARA American Strategic Value Realty	43104	ARA

¹Represents fund vintage year.

Policy	& Custon	n Index C	Composition

Policy Index (12/31/2019-Current)

29% Russell 3000, 24% MSCI ACWI ex USA Gross, 27% BBgBarc Aggregate, 10% NCREIF Property, 1% Russell 3000, 2%BBgBarc 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% BBgBarc Aggregate, 10% NCREIF Property, 5% Russell 3000 +3% (Lagged), 5% BBgBarc High Yield +2% (Lagged).

Policy Index (10/1/2016-9/30/2018)

29% Russell 3000, 24% MSCI ACWI ex USA Gross, 27% BBgBarc Aggregate, 5% NCREIF Property, 5% NCREIF Property +2%, 5% Russell 3000 +3% (Lagged), 5% BBgBarc 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).

Private Equity Benchmark and Private Credit Benchamrks are equal to the actual private equity and private credit returns, respectively.



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)].

Beachmark R-squared: Measures how well the Benchmark return series fits the manager's return series. The higher the Benchmark R-squared, the more appropriate the benchmark is for the manager. **Beta:** A measure of systematic, or market risk; the part of risk in a portfolio or security that is attributable to general market movements. Beta is calculated by dividing the covariance of a security by the variance of the market.

Book-to-Market: The ratio of book value per share to market price per share. Growth managers typically have low book-to-market ratios while value managers typically have high book-to-market ratios. Capture Ratio: A statistical measure of an investment manager's overall performance in up or down markets. The capture ratio is used to evaluate how well an investment manager performed relative to an index during periods when that index has risen (up market) or fallen (down market). The capture ratio is calculated by dividing the manager's returns by the returns of the index during the up/down market, and multiplying that factor by 100.

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

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

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

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

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

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

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

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

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

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

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

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

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

Disclaimer

This report contains confidential and proprietary information and is subject to the terms and conditions of the Consulting Agreement. It is being provided for use solely by the customer. The report may not be sold or otherwise provided, in whole or in part, to any other person or entity without written permission from Verus Advisory, Inc., (hereinafter Verus) or as required by law or any regulatory authority. The information presented does not constitute a recommendation by Verus and cannot be used for advertising or sales promotion purposes. This does not constitute an offer or a solicitation of an offer to buy or sell securities, commodities or any other financial instruments or products.

The information presented has been prepared using data from third party sources that Verus believes to be reliable. While Verus exercised reasonable professional care in preparing the report, it cannot guarantee the accuracy of the information provided by third party sources. Therefore, Verus makes no representations or warranties as to the accuracy of the information presented. Verus takes no responsibility or liability (including damages) for any error, omission, or inaccuracy in the data supplied by any third party. Nothing contained herein is, or should be relied on as a promise, representation, or guarantee as to future performance or a particular outcome. Even with portfolio diversification, asset allocation, and a long-term approach, investing involves risk of loss that the investor should be prepared to bear.

The information presented may be deemed to contain forward-looking information. Examples of forward looking information include, but are not limited to, (a) projections of or statements regarding return on investment, future earnings, interest income, other income, growth prospects, capital structure and other financial terms, (b) statements of plans or objectives of management, (c) statements of future economic performance, and (d) statements of assumptions, such as economic conditions underlying other statements. Such forward-looking information can be identified by the use of forward looking terminology such as believes, expects, may, will, should, anticipates, or the negative of any of the foregoing or other variations thereon comparable terminology, or by discussion of strategy. No assurance can be given that the future results described by the forward-looking information will be achieved. Such statements are subject to risks, uncertainties, and other factors which could cause the actual results to differ materially from future results expressed or implied by such forward looking information. The findings, rankings, and opinions expressed herein are the intellectual property of Verus and are subject to change without notice. The information presented does not claim to be all-inclusive, nor does it contain all information that clients may desire for their purposes. The information presented should be read in conjunction with any other material provided by Verus, investment managers, and custodians.

Verus will make every reasonable effort to obtain and include accurate market values. However, if managers or custodians are unable to provide the reporting period's market values prior to the report issuance, Verus may use the last reported market value or make estimates based on the manager's stated or estimated returns and other information available at the time. These estimates may differ materially from the actual value. Hedge fund market values presented in this report are provided by the fund manager or custodian. Market values presented for private equity investments reflect the last reported NAV by the custodian or manager net of capital calls and distributions as of the end of the reporting period. These values are estimates and may differ materially from the investments actual value. Private equity managers report performance using an internal rate of return (IRR), which differs from the time-weighted rate of return (TWRR) calculation done by Verus. It is inappropriate to compare IRR and TWRR to each other. IRR figures reported in the illiquid alternative pages are provided by the respective managers, and Verus has not made any attempts to verify these returns. Until a partnership is liquidated (typically over 10-12 years), the IRR is only an interim estimated return. The actual IRR performance of any LP is not known until the final liquidation.

Verus receives universe data from InvMetrics, eVestment Alliance, and Morningstar. We believe this data to be robust and appropriate for peer comparison. Nevertheless, these universes may not be comprehensive of all peer investors/managers but rather of the investors/managers that comprise that database. The resulting universe composition is not static and will change over time. Returns are annualized when they cover more than one year. Investment managers may revise their data after report distribution. Verus will make the appropriate correction to the client account but may or may not disclose the change to the client based on the materiality of the change.