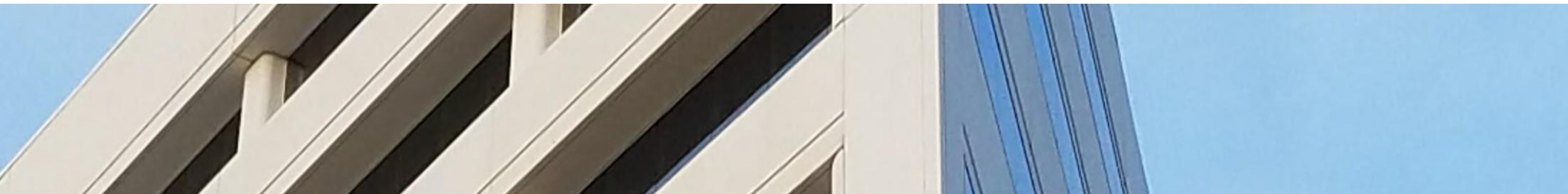




WILSHIRE ASSOCIATES

Wilshire Consulting



Third Quarter 2020 Quarterly Performance Report

As of September 30, 2020

IMRF Performance Highlights

As of September 30, 2020

- The Illinois Municipal Retirement Fund (“IMRF”) ended September 2020 with a market value of \$45.2 billion, up for the quarter by approximately \$2.1 billion. Year-to-date, total fund assets are up \$0.5 billion, net of benefit payments.
- For the quarter, IMRF outperformed its benchmark +5.62% versus +4.91%. The Fund’s 3rd Quarter return ranks at the 26th percentile relative to peers. Year-to-date, IMRF modestly trails its benchmark +2.98% versus 3.92%; however, the Fund ranks near the top quartile relative to peers (26th percentile).
 - Longer term, IMRF’s peer rankings are at or above the top quintile relative to peers. The Fund’s 10-year return of +8.49% ranks at the 17th percentile.
- The Domestic Equity composite (+8.86%) underperformed the Russell 3000 benchmark (+9.21%) for the quarter; however, continued to rank highly in a peer universe comparison (25th percentile). Year-to-date, the Domestic Equity composite has trailed the benchmark +4.17% versus +5.41%, due largely to the portfolio’s tilt to Small Cap Value. Investors have faced a significant headwind given the market’s reliance on Large Cap Growth, specifically, the Technology sector which has returned over +29% in 2020.
 - Year-to-date, Domestic Equity composite ranked in the top one-third of peers (31st percentile).
- The International Equity composite (+7.54%) outperformed the MSCI ACWI ex-US benchmark (+6.25%) for the quarter. Investment manager outperformance and the portfolio’s allocation to small cap added relative value during the quarter. The International Equity composite has also outperformed the benchmark year-to-date, returning -4.32% versus -5.44%.
 - Relative to peers, the International Equity composite ranked around median for the quarter and year-to-date - 56th percentile and 59th percentile, respectively.
- The Fixed Income composite (+1.45) benefited from a strong credit environment during the quarter and outperformed the Bloomberg Barclays U.S. Aggregate Index (+0.62%). Year-to-date, the Fixed Income composite remains behind the benchmark +5.97% versus +6.79%, despite posting strong results in the past two quarters.
 - Fixed Income composite ranked below median relative to peers for the quarter and year-to-date, ranking at the 67th percentile for the quarter, and at the 72nd percentile year-to-date.
- As of September quarter end, Domestic Equity was 4.8% over its target. The current Statement of Investment Policy states that when actual allocations of the asset classes differ by more than four percentage points from their policy target, a recommendation for rebalancing will be made to the Board of Trustees. The Chief Investment Officer and Consultant do not recommend any rebalancing at this time.

ASSET CLASS PERFORMANCE

ASSET CLASS RETURNS - BEST TO WORST					
2015	2016	2017	2018	2019	2020 YTD
REITs 4.2%	MLPs 18.3%	Emrg Mrkts 37.7%	T-Bills 1.9%	U.S. Equity 31.0%	U.S. TIPS 9.2%
U.S. Equity 0.7%	High Yield 17.1%	Developed 25.6%	Core Bond 0.0%	REITs 25.8%	Core Bond 6.8%
Core Bond 0.6%	U.S. Equity 13.4%	U.S. Equity 21.0%	U.S. TIPS -1.3%	Developed 22.7%	U.S. Equity 5.5%
T-Bills 0.1%	Commodities 11.8%	High Yield 7.5%	High Yield -2.1%	Emrg Mrkts 18.9%	T-Bills 0.7%
Developed -0.4%	Emrg Mrkts 11.6%	REITs 4.2%	REITs -4.8%	High Yield 14.3%	High Yield 0.6%
U.S. TIPS -1.4%	REITs 7.2%	Core Bond 3.6%	U.S. Equity -5.3%	Core Bond 8.7%	Emrg Mrkts -0.9%
High Yield -4.5%	U.S. TIPS 4.7%	U.S. TIPS 3.0%	Commodities -11.2%	U.S. TIPS 8.4%	Developed -6.7%
Emrg Mrkts -14.6%	Core Bond 2.6%	Commodities 1.7%	MLPs -12.4%	Commodities 7.7%	Commodities -12.1%
Commodities -24.7%	Developed 1.5%	T-Bills 0.8%	Developed -13.4%	MLPs 6.6%	REITs -16.7%
MLPs -32.6%	T-Bills 0.3%	MLPs -6.5%	Emrg Mrkts -14.2%	T-Bills 2.3%	Midstream -36.2%

ANNUALIZED 5-YEAR AS OF 9/20
U.S. Equity 13.8%
Emrg Mrkts 9.4%
High Yield 6.8%
Developed 5.8%
U.S. TIPS 4.6%
Core Bond 4.2%
REITs 3.7%
T-Bills 1.2%
Commodities -3.1%
Midstream -4.5%

Data sources: Bloomberg

Note: Developed asset class is developed equity markets ex-U.S., ex-Canada

MARKET COMMENTARY

U.S. Equity

The U.S. stock market was up 9.1% for the third quarter of 2020. Economic news from the quarter was mixed, with a focus on employment conditions remaining a key element of the recovery. Temporary job losses continue to fall while permanent losses rise. Both initial jobless claims and continuing claims are falling from reported highs during the second quarter.

Non-U.S. Equity

The U.K. suffered a contraction of nearly -20% during the second quarter. The government's furlough program, where they support a majority of employees' wages, has kept the unemployment rate to just 4%. Euro zone manufacturing activity is on the rise, led by particular strength in Germany. The Chinese economy actually grew during the second quarter after more than half of the country was shut down in February.

Fixed Income

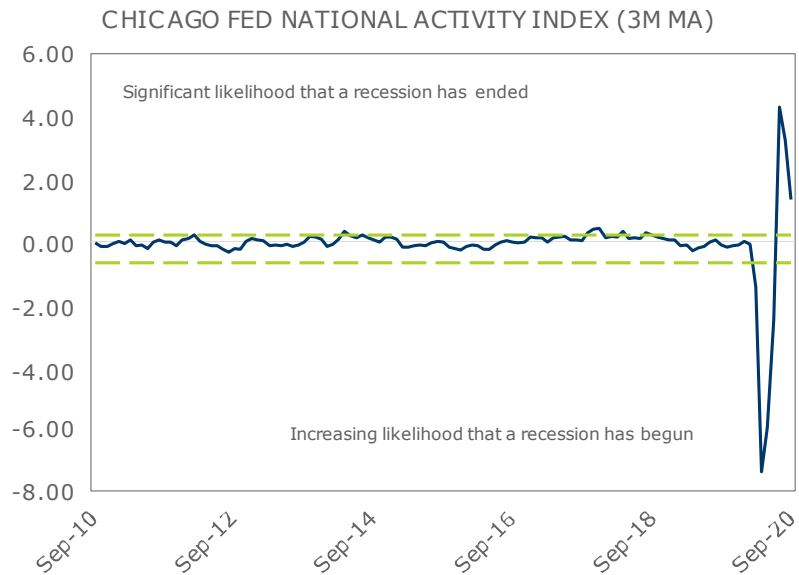
The 10-year Treasury yield ended the quarter at 0.69%, up just 3 basis points from June. The FOMC met three times during the quarter, as scheduled, with no change to their overnight rate. In a meaningful step, the Committee addressed a revised policy that allows inflation to move above the 2% target before increasing interest rates, adopting specific language to emphasize this goal.

Although the U.S. has experienced an overnight rate near zero before, this year is the first time that the bellwether 10-year Treasury has been below 1%. Interest rates have a natural floor, and as rates approach a bottom, yield (and price) changes can become asymmetrical. Rates either go up (and prices go down) or stay relatively steady. One consequence of this pattern is that fixed income returns tend to become less volatile. The history of Japan during the past 20 years serves as an example.

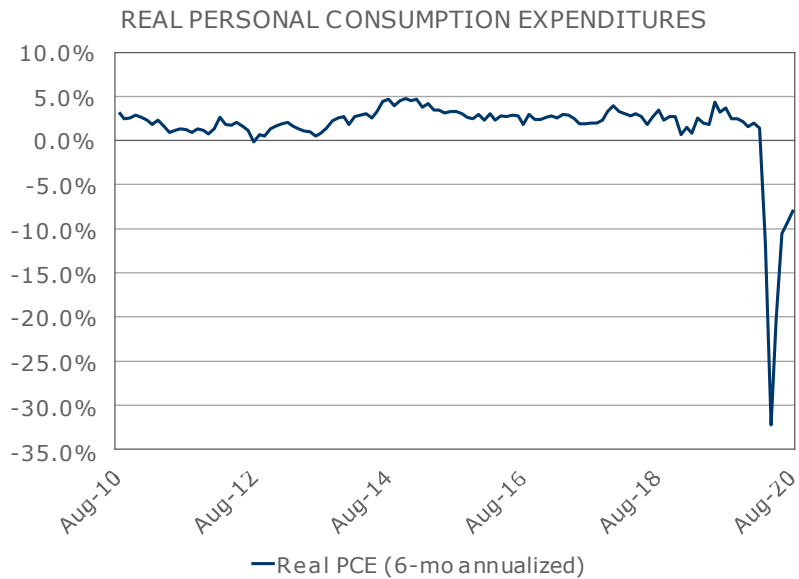
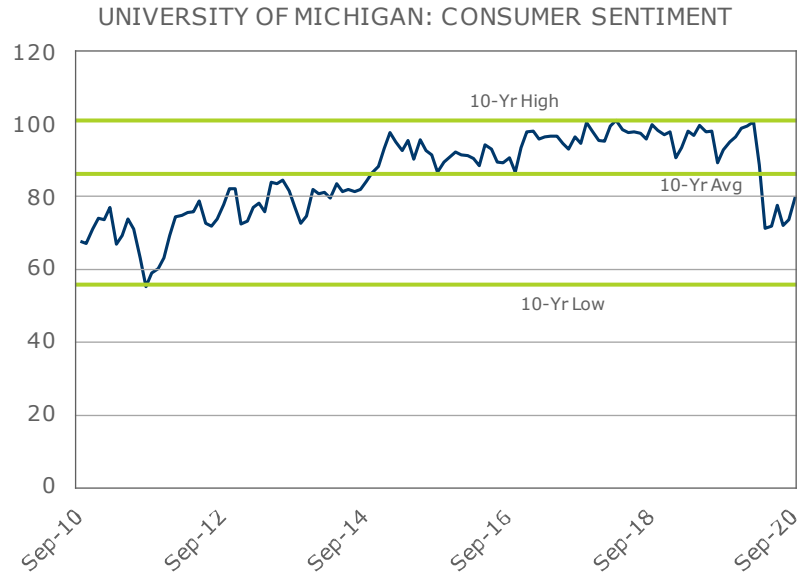
SEPTEMBER 2020 ASSET CLASS ASSUMPTIONS

	EQUITY						FIXED INCOME						REAL ASSETS					
	US Stock	Dev ex-US Stock	Emg Stock	Global ex-US Stock	Global Stock	Private Equity	Cash	Core Bond	LT Core Bond	TIPS	High Yield	Dev ex-US Bond (Hdg)	Real Estate			Comdty	Real Assets	US CPI
													US RES	Global RES	Private RE			
COMPOUND RETURN (%)	5.50	6.00	6.00	6.25	5.95	7.45	0.55	1.05	1.75	0.40	3.45	0.25	5.20	5.40	6.65	2.35	5.35	1.80
ARITHMETIC RETURN (%)	6.85	7.50	9.00	7.90	7.30	10.85	0.55	1.15	2.15	0.60	3.95	0.35	6.55	6.55	7.55	3.40	5.70	1.80
EXPECTED RISK (%)	17.00	18.00	26.00	18.95	17.10	28.00	0.75	4.25	8.90	6.00	10.00	4.25	17.00	15.80	14.00	15.00	8.75	1.75
CASH YIELD (%)	1.75	2.50	2.25	2.45	2.05	0.00	0.55	1.85	2.70	1.15	6.80	1.10	3.85	3.85	2.50	0.55	2.05	0.00
GROWTH EXPOSURE	8.00	8.00	8.00	8.00	8.00	13.50	0.00	-0.90	-2.30	-3.00	4.00	-1.00	6.00	6.00	3.50	0.00	1.60	0.00
INFLATION EXPOSURE	-3.00	0.00	5.00	1.35	-1.10	-3.80	0.00	-2.50	-6.70	2.50	-1.00	-3.00	1.00	2.00	1.00	12.00	4.40	1.00
CORRELATIONS																		
US Stock	1.00																	
Dev ex-US Stock (USD)	0.81	1.00																
Emerging Mkt Stock	0.74	0.74	1.00															
Global ex-US Stock	0.83	0.96	0.87	1.00														
Global Stock	0.95	0.92	0.83	0.94	1.00													
Private Equity	0.74	0.64	0.62	0.67	0.74	1.00												
Cash Equivalents	-0.05	-0.09	-0.05	-0.08	-0.07	0.00	1.00											
Core Bond	0.28	0.13	0.00	0.09	0.20	0.31	0.19	1.00										
LT Core Bond	0.31	0.16	0.01	0.12	0.23	0.32	0.11	0.93	1.00									
TIPS	-0.05	0.00	0.15	0.05	0.00	-0.03	0.20	0.60	0.47	1.00								
High Yield Bond	0.54	0.39	0.49	0.45	0.51	0.34	-0.10	0.25	0.32	0.05	1.00							
Dev ex-US Bond (Hdg)	0.16	0.25	-0.01	0.18	0.18	0.26	0.10	0.67	0.66	0.39	0.26	1.00						
US RE Securities	0.59	0.47	0.44	0.49	0.56	0.50	-0.05	0.17	0.23	0.10	0.56	0.05	1.00					
Global RE Securities	0.65	0.59	0.56	0.62	0.66	0.58	-0.05	0.17	0.22	0.11	0.62	0.03	0.94	1.00				
Private Real Estate	0.54	0.44	0.44	0.47	0.52	0.51	-0.05	0.19	0.25	0.09	0.57	0.05	0.78	0.76	1.00			
Commodities	0.25	0.34	0.39	0.38	0.32	0.27	0.00	-0.02	-0.02	0.25	0.29	-0.10	0.25	0.28	0.25	1.00		
Real Assets	0.42	0.43	0.50	0.48	0.47	0.43	0.01	0.24	0.25	0.41	0.53	0.06	0.65	0.69	0.69	0.59	1.00	
Inflation (CPI)	-0.10	-0.15	-0.13	-0.15	-0.13	-0.10	0.10	-0.12	-0.12	0.15	-0.08	-0.08	0.05	0.03	0.05	0.44	0.26	1.00

ECONOMIC GROWTH

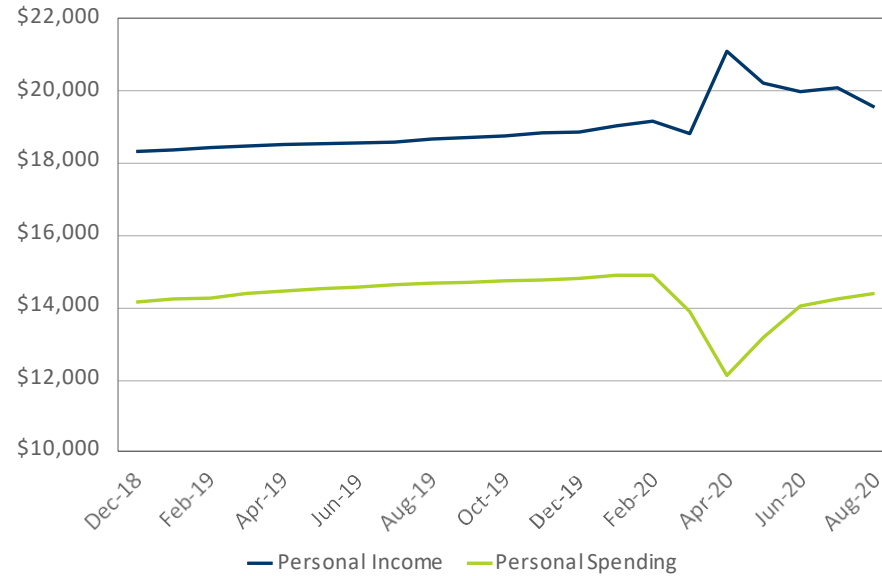


CONSUMER ACTIVITY

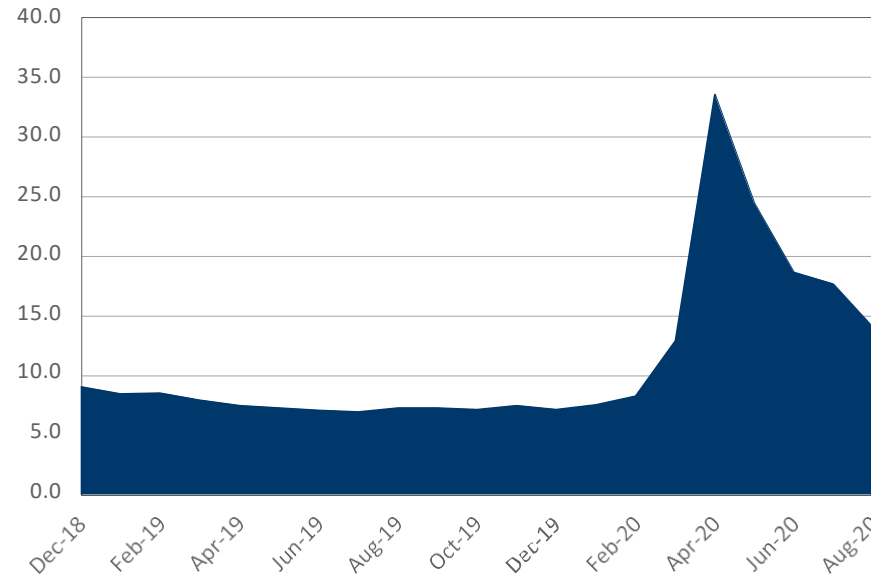


IMPACT OF FISCAL STIMULUS

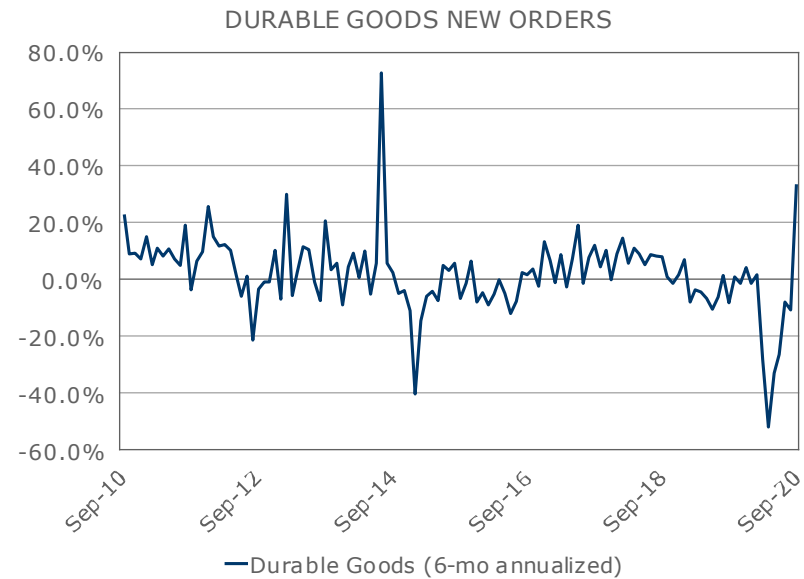
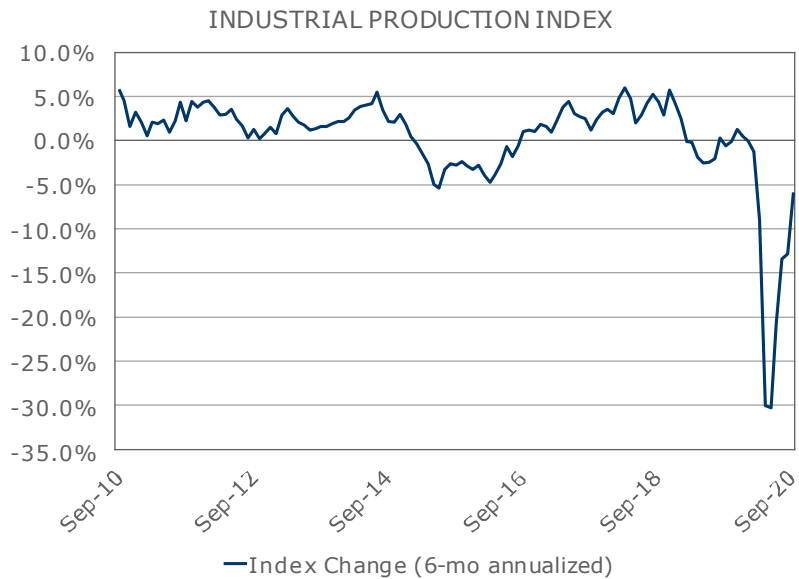
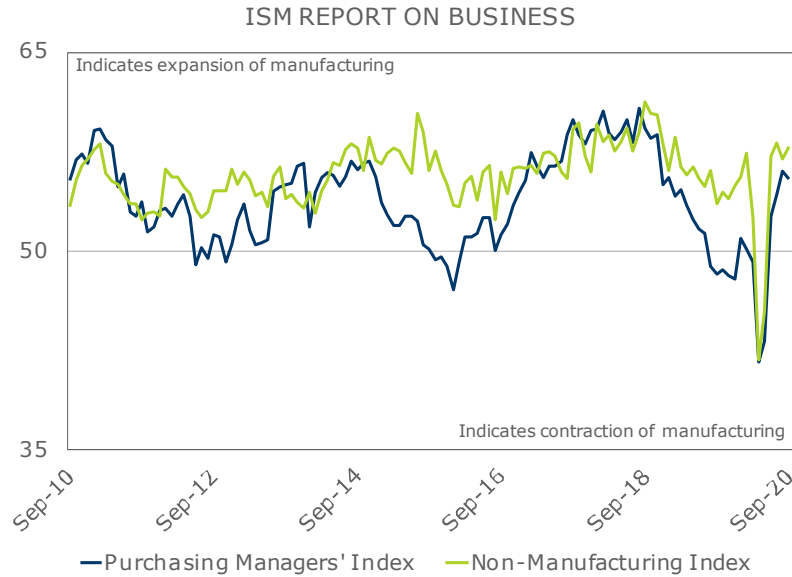
INCOME VS. SPENDING (\$BIL)



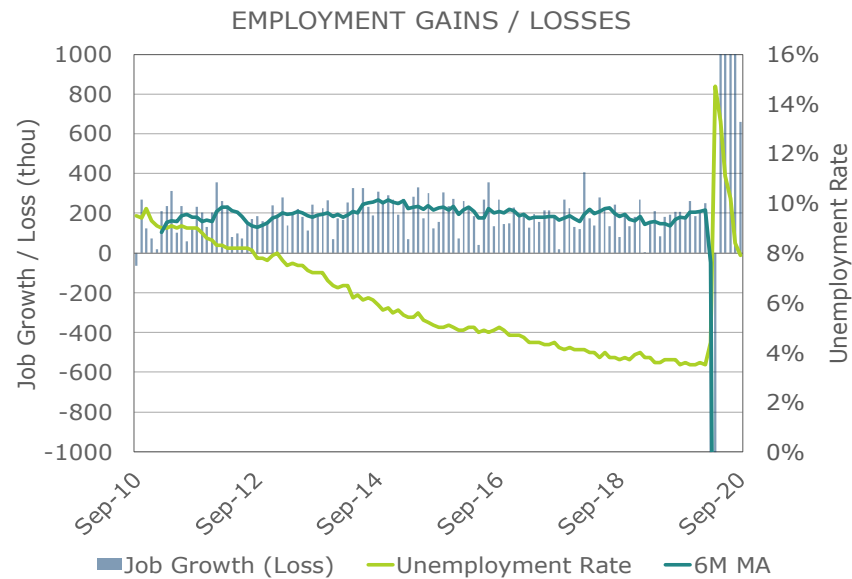
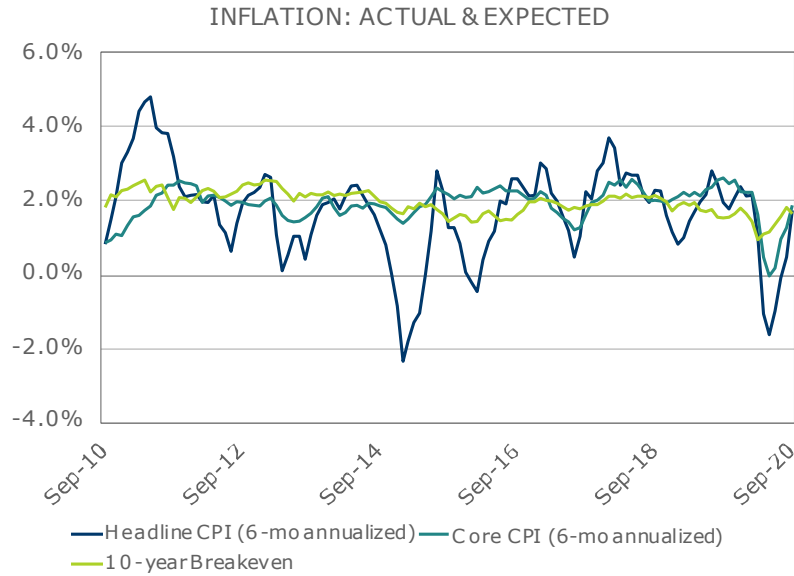
PERSONAL SAVINGS RATE (%)



BUSINESS ACTIVITY



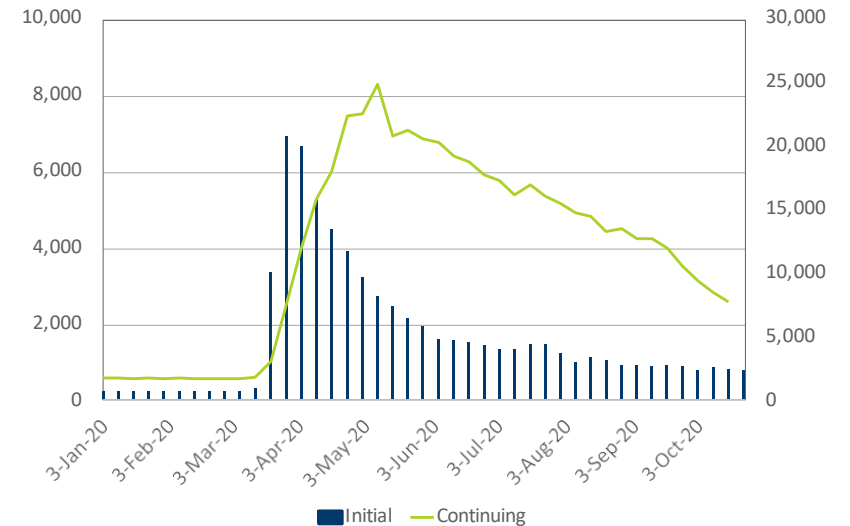
INFLATION AND EMPLOYMENT



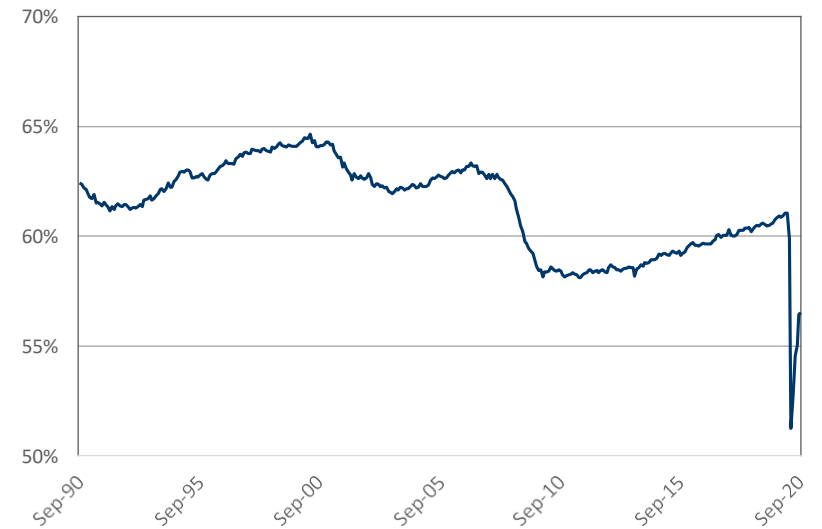
U.S. EMPLOYMENT

- Employment conditions have been volatile this year with massive gains and losses, as seen on the previous page
- Unemployment claims have been declining with continued claims currently at 8 million
- Employment as a percent of the civilian, non-institutional population dropped to nearly 50%
- The ratio has never been that low in the post-WWII history

UNEMPLOYMENT CLAIMS (000)



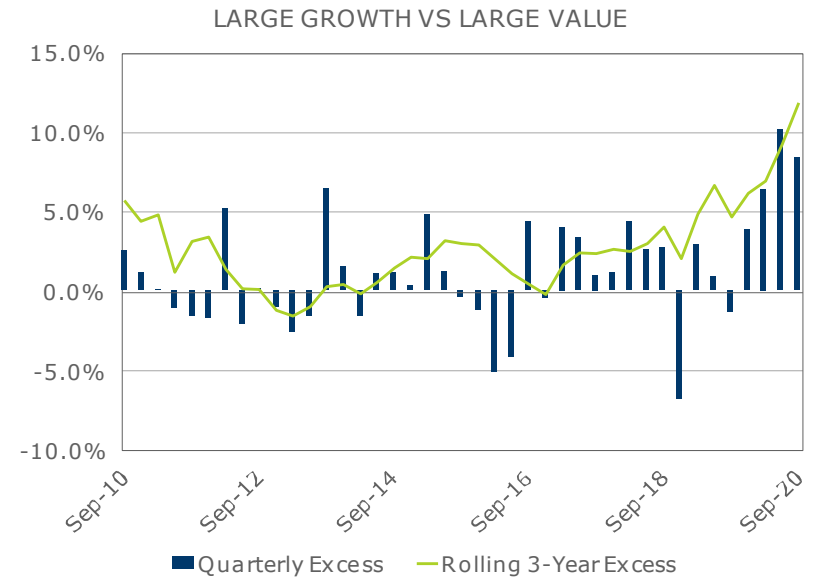
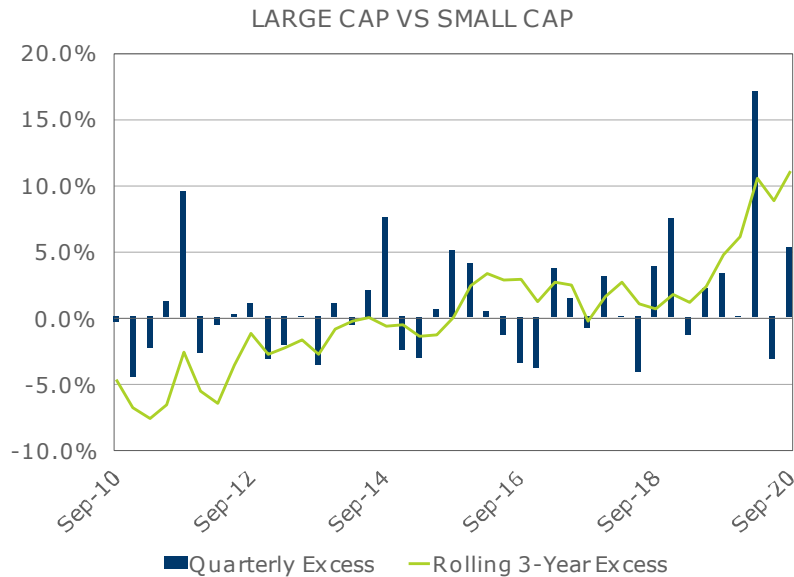
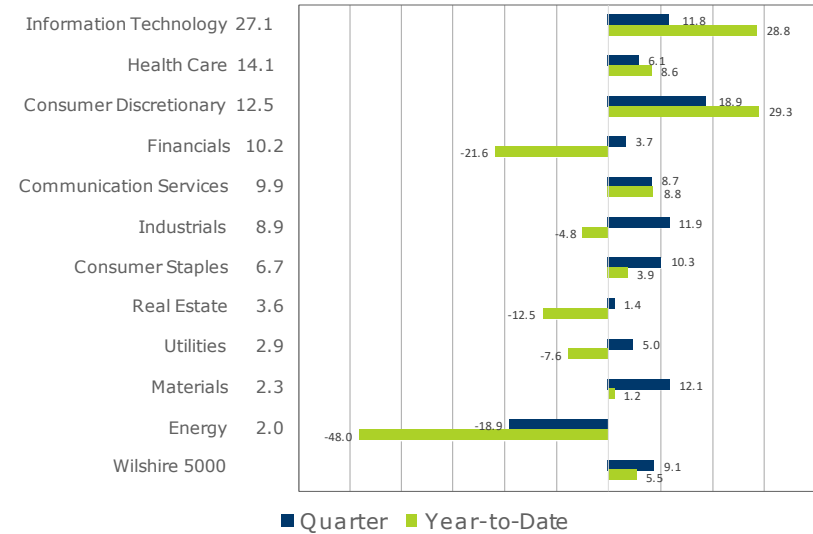
EMPLOYED PERSONS / CIVILIAN POPULATION



U.S. EQUITY MARKET

AS OF 9/30/20	QTD	YTD	1 YR	3 YR	5 YR	10 YR
RUSSELL 3000 INDEX	9.2	5.4	15.0	11.6	13.7	13.5
STANDARD & POOR'S 500 INDEX	8.9	5.6	15.2	12.3	14.1	13.7
RUSSELL 1000 INDEX	9.5	6.4	16.0	12.4	14.1	13.7
RUSSELL 2000 INDEX	4.9	-8.7	0.4	1.8	8.0	9.8
RUSSELL MICRO CAP INDEX	3.7	-7.9	4.4	-0.1	6.7	9.5
RUSSELL 1000 GROWTH INDEX	13.2	24.3	37.5	21.7	20.1	17.2
RUSSELL 1000 VALUE INDEX	5.6	-11.6	-5.0	2.6	7.7	9.9
RUSSELL 2000 GROWTH INDEX	7.2	3.9	15.7	8.2	11.4	12.3
RUSSELL 2000 VALUE INDEX	2.6	-21.5	-14.9	-5.1	4.1	7.1

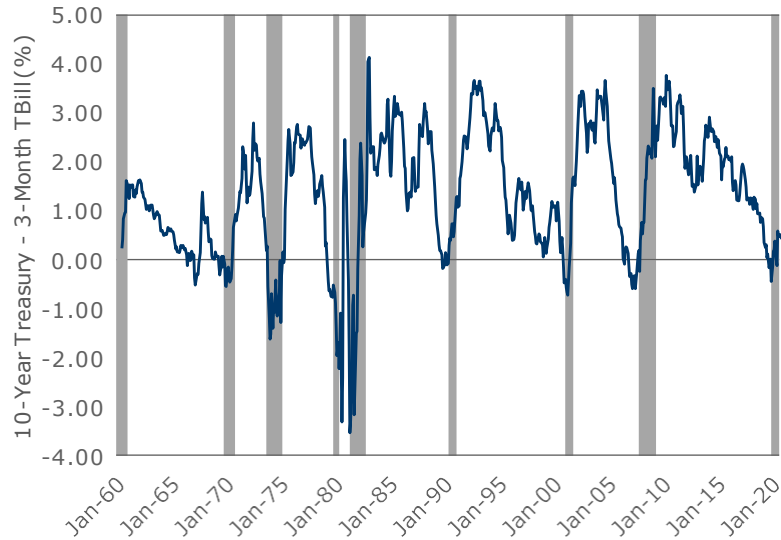
U.S. SECTOR WEIGHT AND RETURN (%)



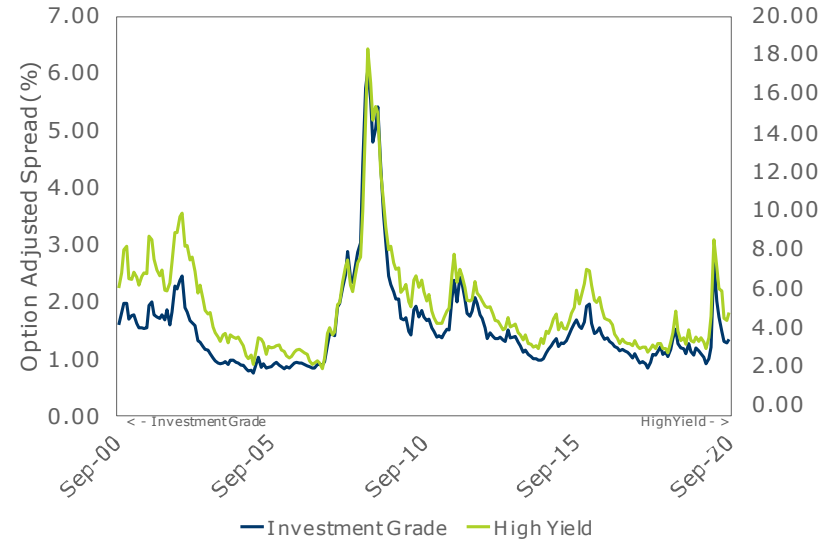
Data sources: Bloomberg, Wilshire Atlas

RISK MONITOR

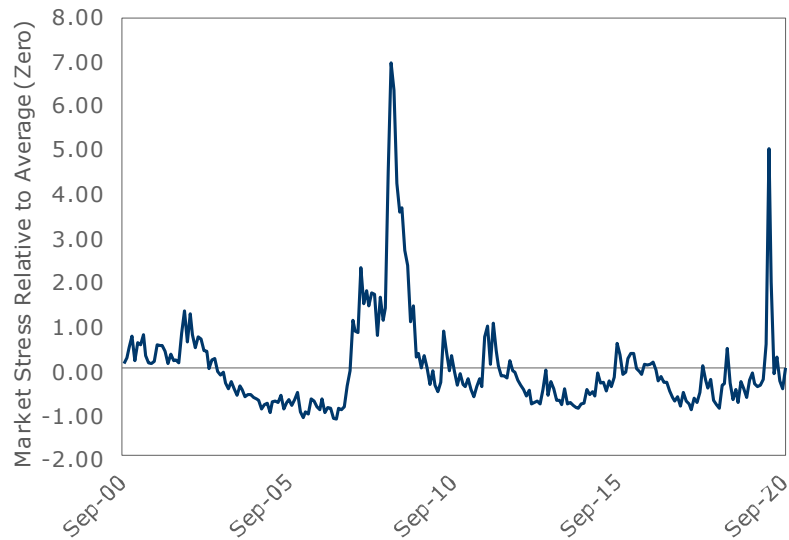
YIELD CURVE SLOPE VS RECESSIONS (IN GRAY)



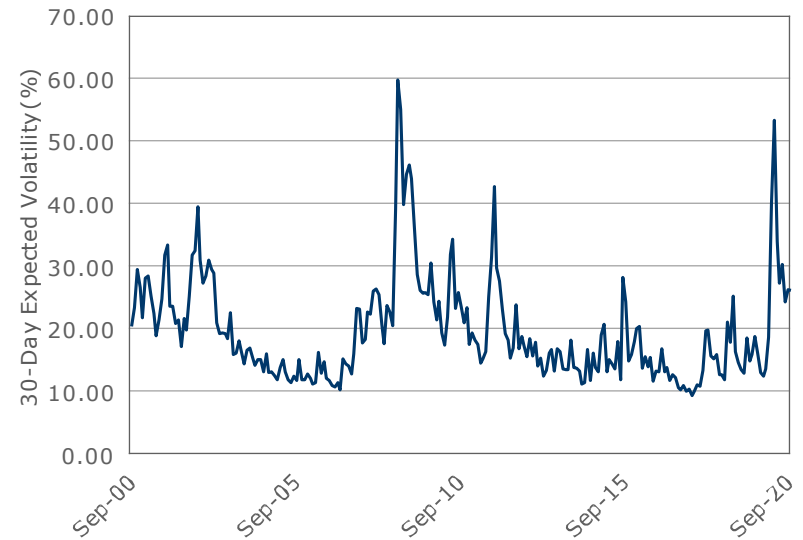
BLOOMBERG BARCLAYS CREDIT INDEXES



ST. LOUIS FED FINANCIAL STRESS INDEX



CBOE VOLATILITY INDEX

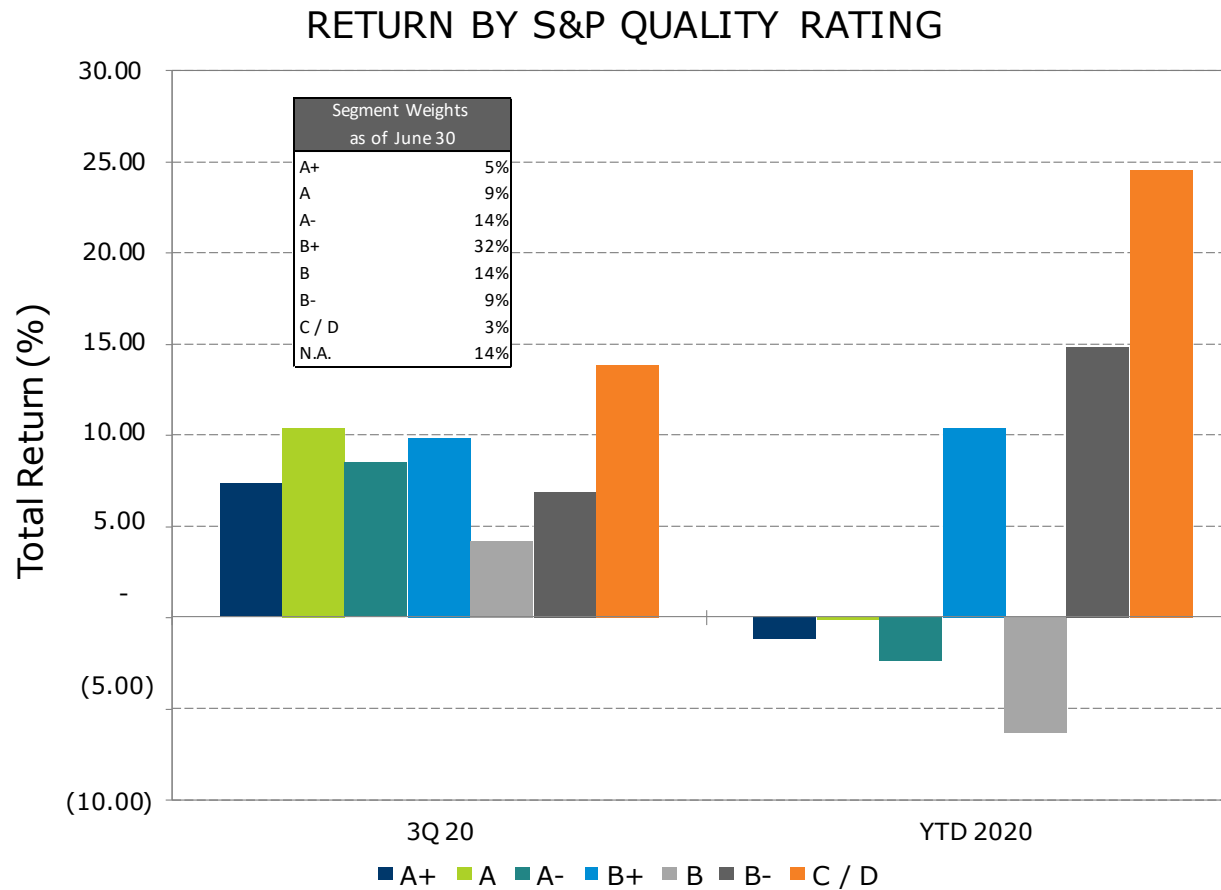


Data sources: Bloomberg

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RETURNS BY QUALITY SEGMENT

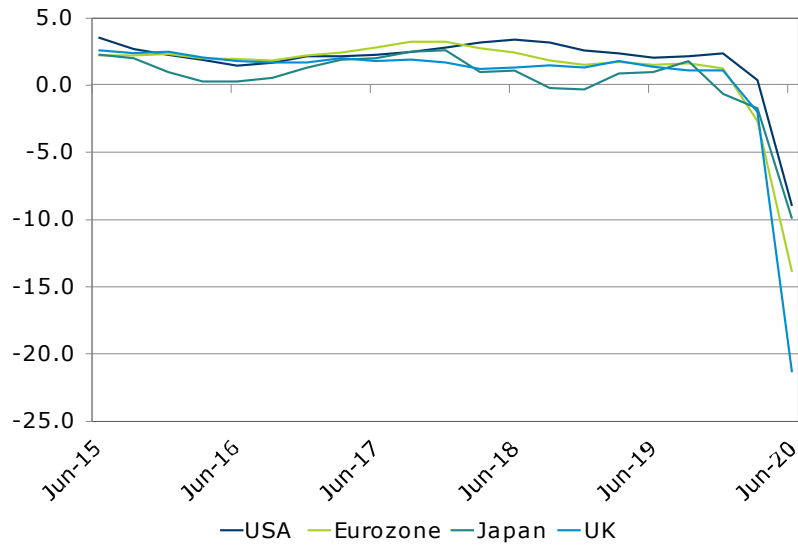
Although gains were broad based for the quarter, lower quality names lead for the year



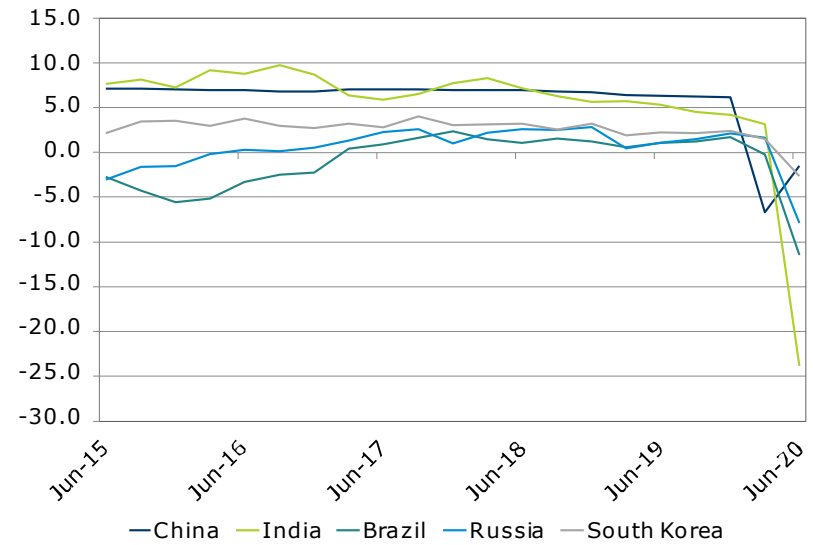
Data sources: Wilshire Atlas

NON-U.S. GROWTH AND INFLATION

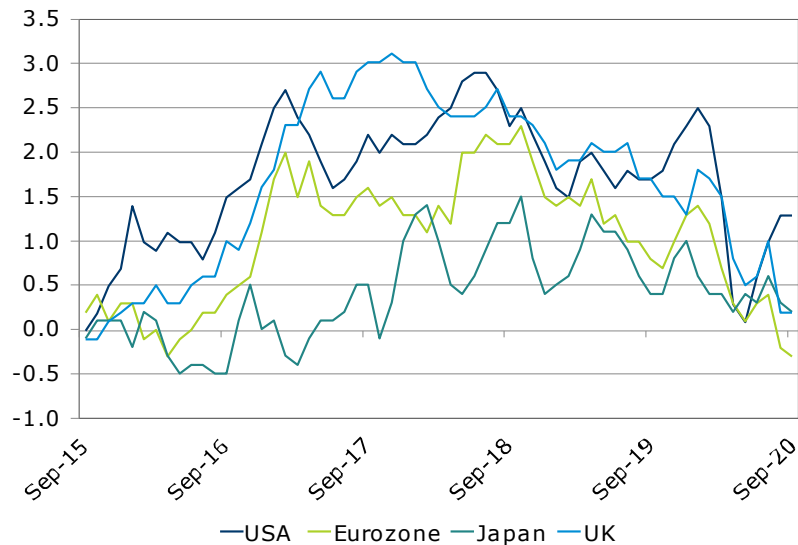
DEVELOPED MARKETS REAL GDP GROWTH YoY (%)



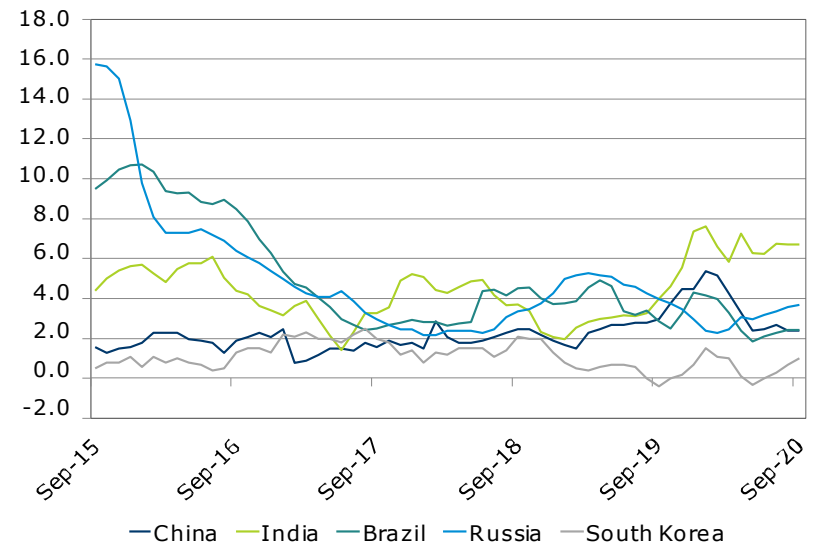
EMERGING MARKETS REAL GDP GROWTH YoY (%)



DEVELOPED MARKETS CPI GROWTH YoY (%)



EMERGING MARKETS CPI GROWTH YoY (%)

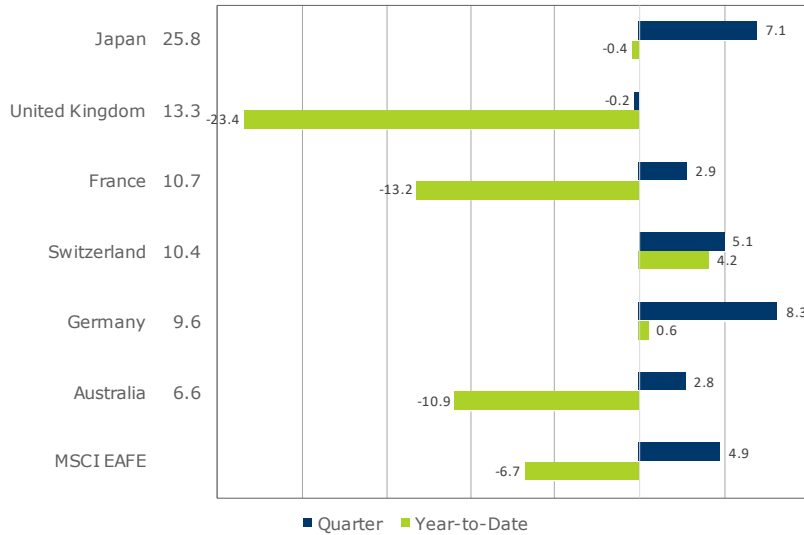


Data sources: Bloomberg

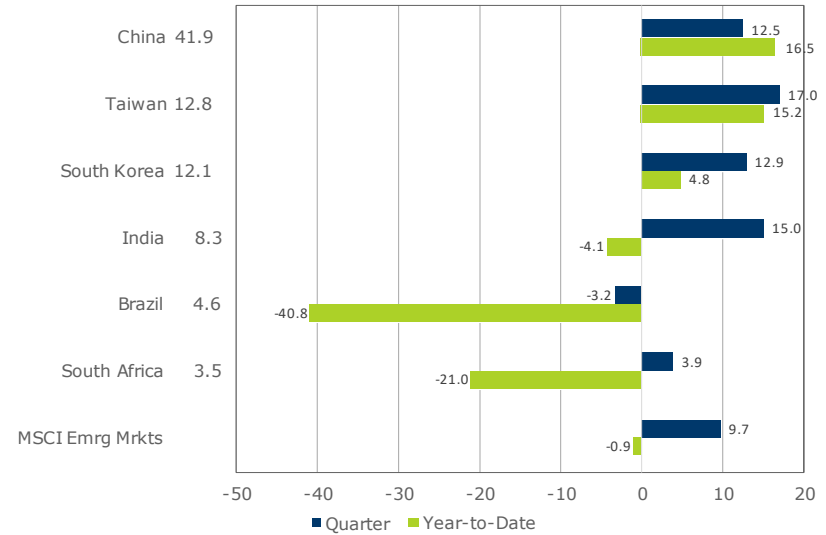
NON-U.S. EQUITY MARKET

AS OF 9/30/2020	QTR	YTD	1 YR	3 YR	5 YR	10 YR
MSCI ACWI EX-US (\$G)	6.4	-5.1	3.4	1.6	6.7	4.5
MSCI EAFE (\$G)	4.9	-6.7	0.9	1.1	5.8	5.1
MSCI EMERGING MARKETS (\$G)	9.7	-0.9	10.9	2.8	9.4	2.9
MSCI FRONTIER MARKETS (\$G)	4.4	-16.9	-11.2	-5.1	1.2	0.7
MSCI ACWI EX-US GROWTH (\$G)	10.2	7.5	17.9	7.7	10.6	6.8
MSCI ACWI EX-US VALUE (\$G)	3.1	-16.7	-9.5	-4.3	3.0	2.4
MSCI ACWI EX-US SMALL (\$G)	10.6	-3.3	7.4	1.3	7.2	5.7
MSCI ACWI MINIMUM VOLATILITY	4.9	-3.0	0.0	7.1	9.6	9.7
MSCI EAFE MINIMUM VOLATILITY	3.5	-6.9	-2.7	2.4	5.8	6.7
FTSE RAFI DEVELOPED EX-US	3.1	-15.0	-8.1	-3.7	3.3	2.9
MSCI EAFE LC (G)	1.3	-9.1	-4.3	1.0	5.3	6.8
MSCI EMERGING MARKETS LC (G)	8.8	2.9	12.8	5.2	10.0	6.0

DEVELOPED MARKETS WEIGHT AND RETURN (%)



EMERGING MARKETS WEIGHT AND RETURN (%)

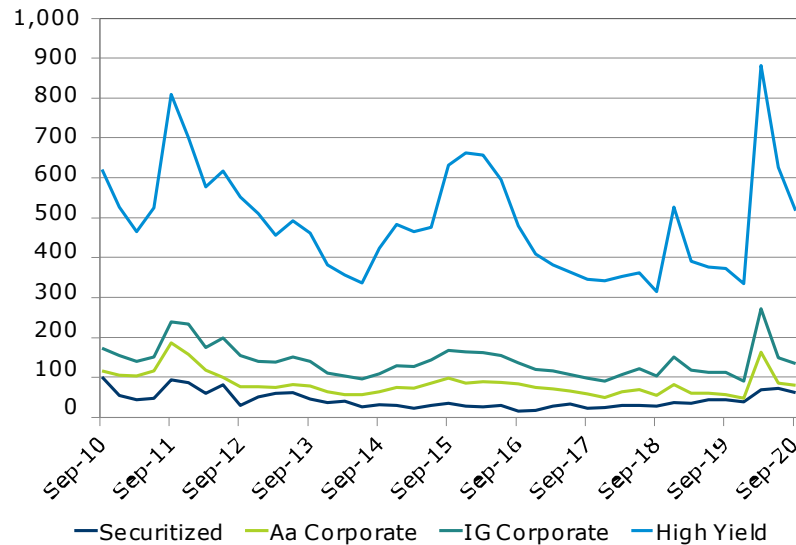


U.S. FIXED INCOME

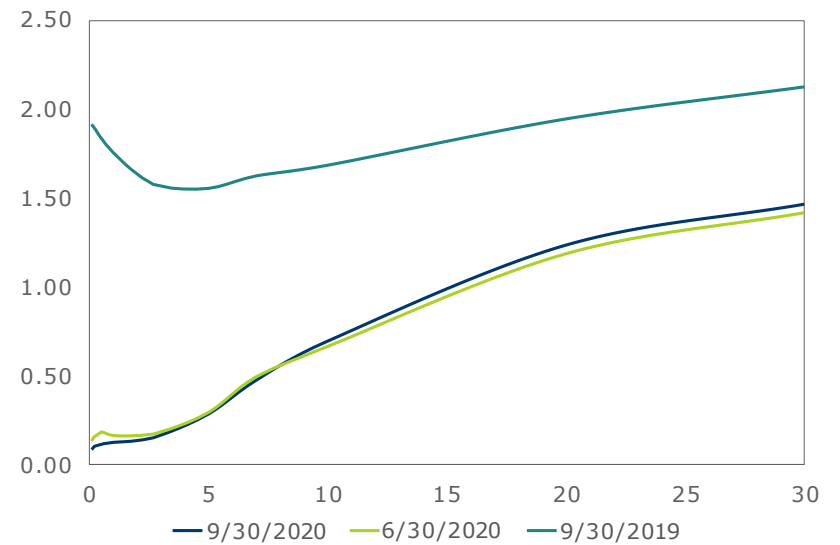
AS OF 9/30/2020	YTW	DUR.	QTR	YTD	1 YR	3 YR	5 YR	10 YR
BLOOMBERG BARCLAYS AGGREGATE	1.2	6.1	0.6	6.8	7.0	5.2	4.2	3.6
BLOOMBERG BARCLAYS TREASURY	0.5	7.2	0.2	8.9	8.0	5.5	3.7	3.1
BLOOMBERG BARCLAYS GOVT-REL.	1.1	6.0	1.1	5.0	5.2	4.8	4.1	3.3
BLOOMBERG BARCLAYS SECURITIZED	1.3	2.4	0.2	3.9	4.5	3.8	3.1	3.1
BLOOMBERG BARCLAYS CORPORATE	2.0	8.7	1.5	6.6	7.9	6.4	6.0	5.1
BLOOMBERG BARCLAYS LTG/C	2.3	16.8	1.2	14.2	12.9	10.2	8.8	7.4
BLOOMBERG BARCLAYS LT TREASURY	1.3	19.4	0.1	21.3	16.3	11.9	8.2	7.2
BLOOMBERG BARCLAYS LT GOV't-REL.	2.8	13.6	2.3	6.7	6.6	7.8	7.8	6.7
BLOOMBERG BARCLAYS LTCORP.	3.1	15.3	1.9	8.4	9.8	8.8	8.9	7.4
BLOOMBERG BARCLAYS U.S. TIPS *	0.6	7.9	3.0	9.2	10.1	5.8	4.6	3.6
BLOOMBERG BARCLAYS HIGH YIELD	5.8	3.7	4.6	0.6	3.3	4.2	6.8	6.5
TREASURY BILLS	0.1	0.3	0.0	0.7	1.2	1.7	1.2	0.7

* Yield and Duration statistics are for a proxy index based on similar maturity, the Bloomberg Barclays U.S. Treasury 7-10 Year Index

FIXED INCOME OPTION ADJUSTED SPREAD (BPS)



TREASURY YIELD CURVE (%)

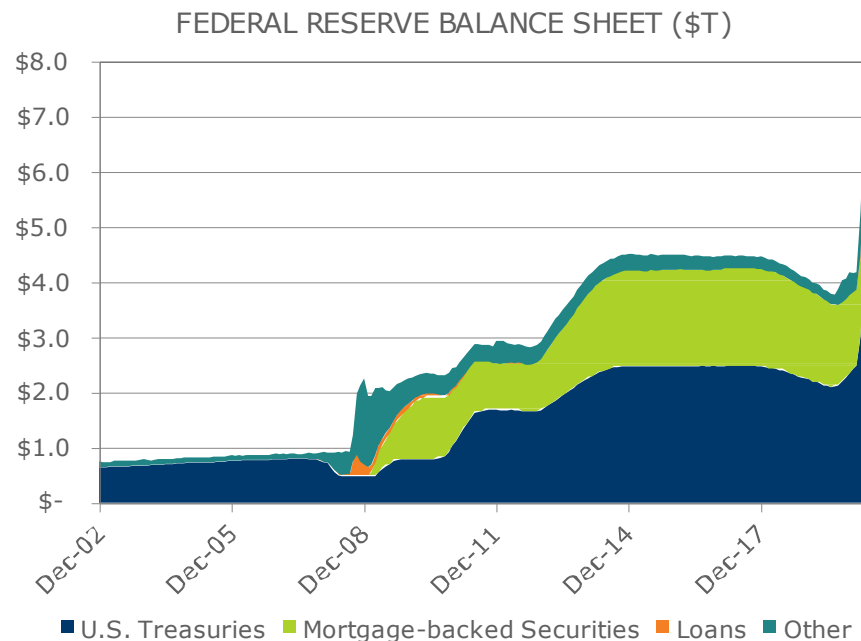
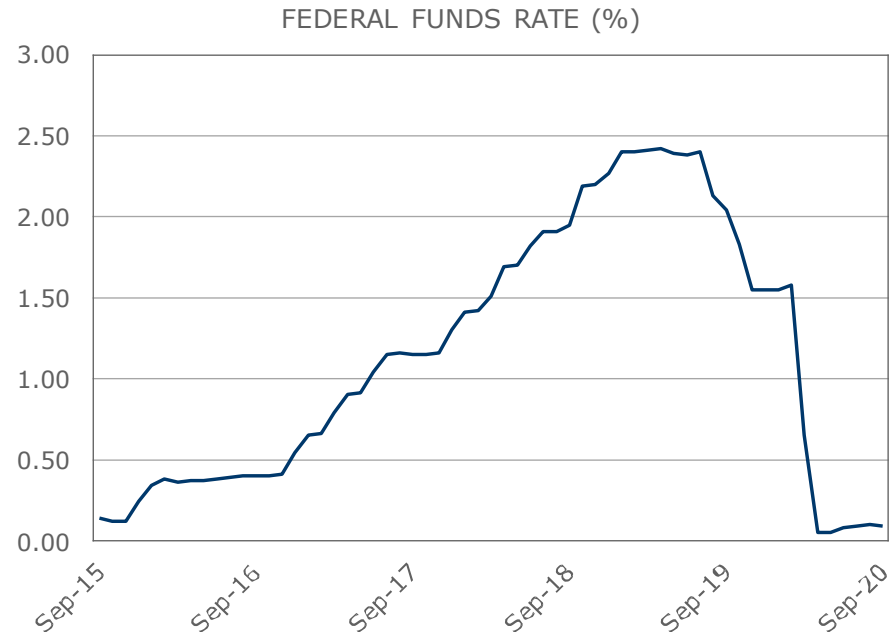


Data sources: Bloomberg

FEDERAL RESERVE

- Current expectation for the Fed-funds rate is to remain near zero through 2022
- Federal Reserve has added nearly \$3 trillion in assets to their balance sheet just this year
- Unlike after the GFC, the Fed is also buying corporate and municipal bonds in addition to Treasuries and MBS

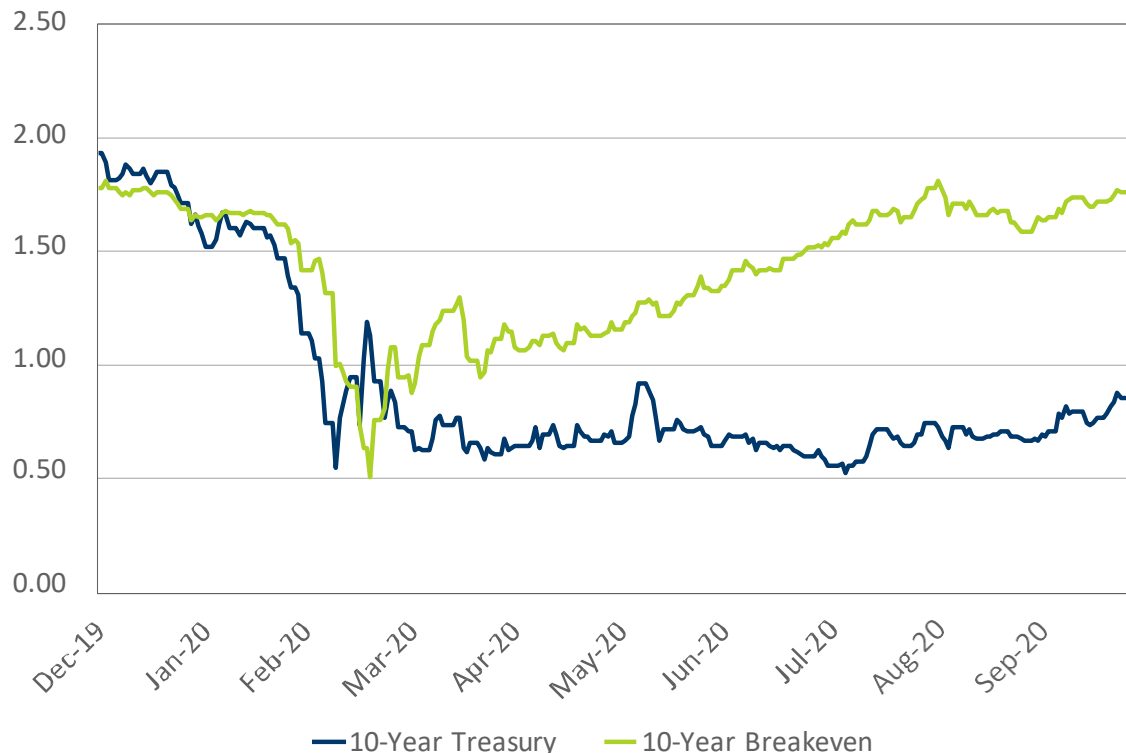
	Announced	Closed	Amount (bil)
QE1	11/25/2008	3/31/2010	\$1,403
QE2	11/3/2010	6/29/2012	\$568
QE3	9/13/2012	10/29/2014	\$1,674
QE4	3/23/2020		\$2,935



TREASURIES AT LOW LEVELS

- Treasury yields and breakeven inflation both dropped as the U.S. entered coronavirus-related lockdowns; breakeven inflation has since increased
- Nearly 100 basis point spread between the two implies that investing in a 10-year Treasury is currently expected to cost an investor, in real terms

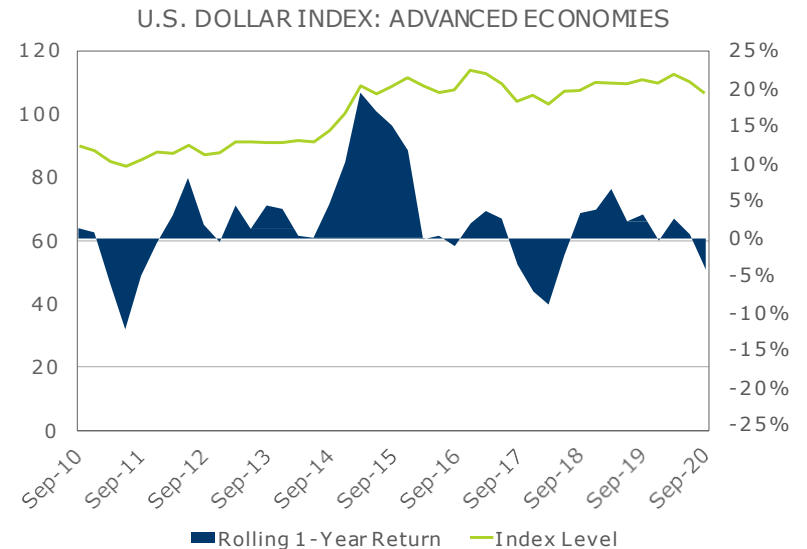
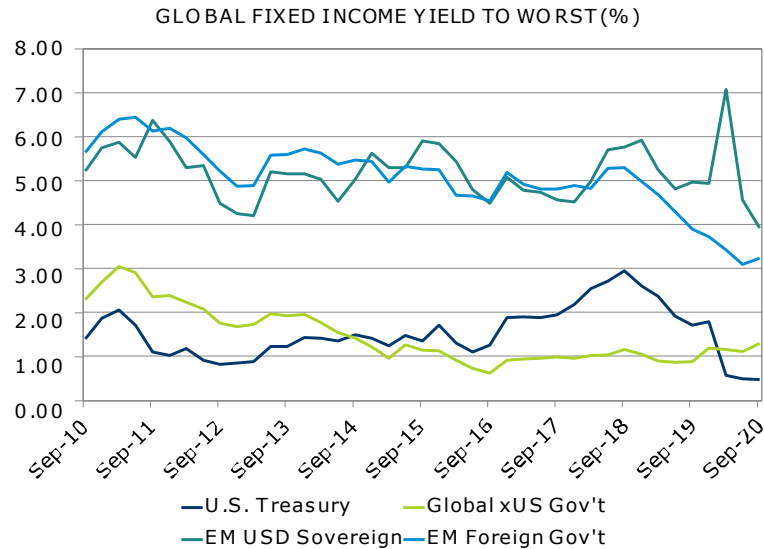
YIELDS & BREAKEVEN (%)



NON-U.S. FIXED INCOME

AS OF 9/30/2020	QTR	YTD	1 YR	3 YR	5 YR	10 YR
DEVELOPED MARKETS						
BLMBRG BRCLYS GLBL AGGREGATE xUS	4.1	4.8	5.5	3.1	3.6	1.3
BLMBRG BRCLYS GLBL AGGREGATE xUS *	0.7	3.0	1.8	4.9	4.3	4.1
BLMBRG BRCLYS GLOBAL INF LNKD xUS	3.9	6.0	5.4	3.8	3.8	3.5
BLMBRG BRCLYS GLOBAL INF LNKD xUS *	-0.3	6.4	0.9	6.4	6.3	5.9
EMERGING MARKETS (HARD CURRENCY)						
BLMBRG BRCLYS EM USD AGGREGATE	2.4	1.9	4.1	4.2	6.2	5.4
EMERGING MARKETS (FOREIGN CURRENCY)						
BLMBRG BRCLYS EM LOCAL CURR. GOV'T	1.8	-1.6	2.3	2.1	4.9	2.0
BLMBRG BRCLYS EM LOCAL CURR. GOV'T *	-0.6	2.3	2.8	4.5	4.1	3.3
EURO vs. DOLLAR	4.3	4.5	7.5	-0.3	1.0	-1.5
YEN vs. DOLLAR	2.3	3.0	2.5	2.2	2.6	-2.3
POUND vs. DOLLAR	4.2	-2.5	5.1	-1.2	-3.1	-1.9

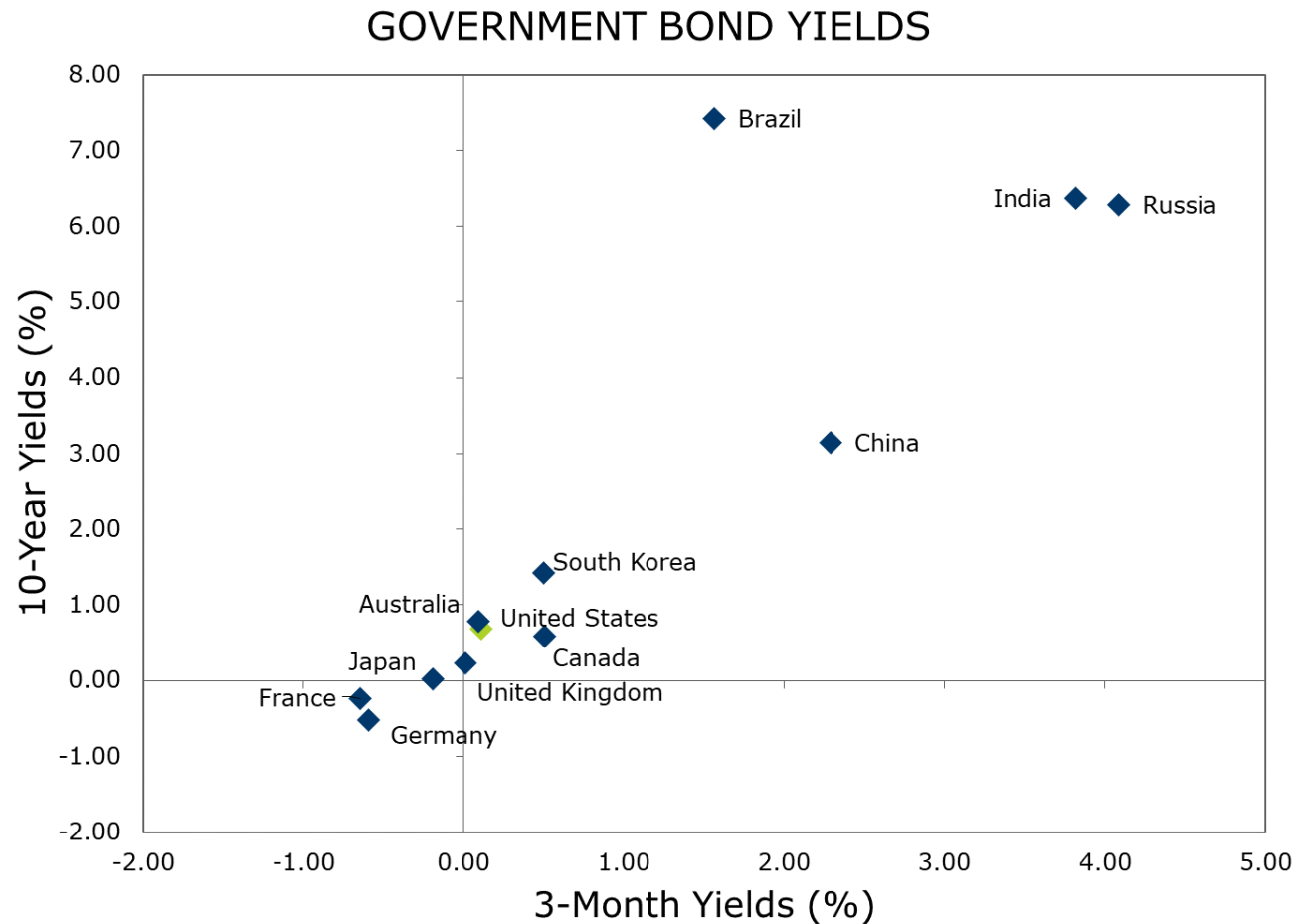
* Returns are reported in terms of local market investors, which removes currency effects.



Data sources: Bloomberg

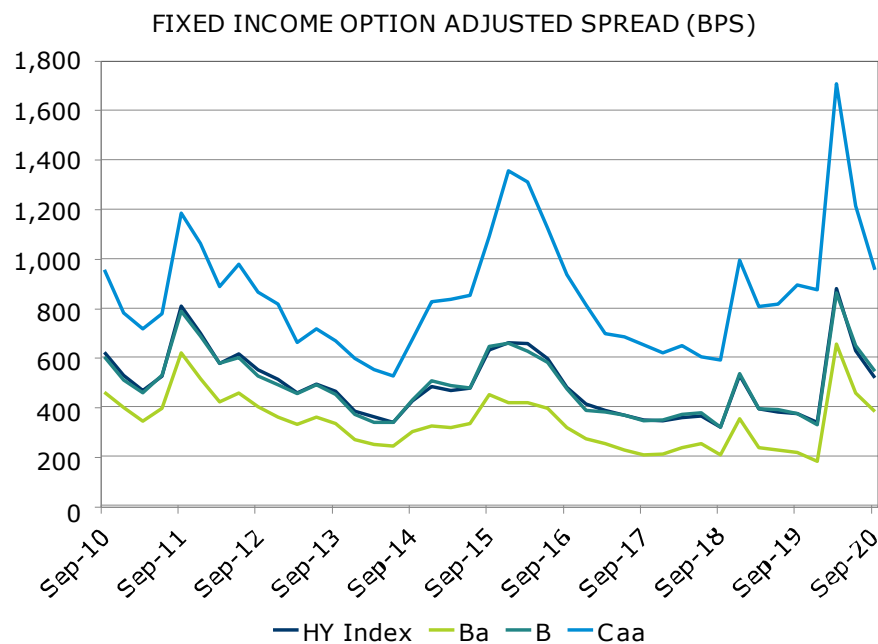
GLOBAL INTEREST RATES

Negative rates found in Germany and France; low but positive rates, and at similar levels, in the U.S. and Australia while the U.K. approaches zero in both the short and long-term



HIGH YIELD BOND MARKET

AS OF 9/30/2020		YTW	QTR	YTD	1 YR	3 YR	5 YR	10 YR
BLOOMBERG BARCLAYS HIGH YIELD		5.8	4.6	0.6	3.3	4.2	6.8	6.5
S&P LSTA LEVERAGE LOAN INDEX		4.9	3.5	-0.5	1.7	3.4	4.1	4.1
HIGH YIELD QUALITY DISTRIBUTION	WEIGHT							
Ba U.S. HIGH YIELD	54.6%	4.4	4.0	4.2	6.8	5.7	7.3	6.9
B U.S. HIGH YIELD	32.7%	6.0	4.5	-1.2	1.4	4.0	6.2	6.1
Caa U.S. HIGH YIELD	11.9%	10.1	7.3	-7.0	-3.5	-0.3	5.6	6.0
Ca to D U.S. HIGH YIELD	0.8%	23.9	6.7	-23.5	-29.1	-8.8	4.1	-5.8
Non-Rated U.S. HIGH YIELD	0.0%	0.0	0.0	-6.5	-4.7	-0.5	0.6	3.7



Data sources: Bloomberg

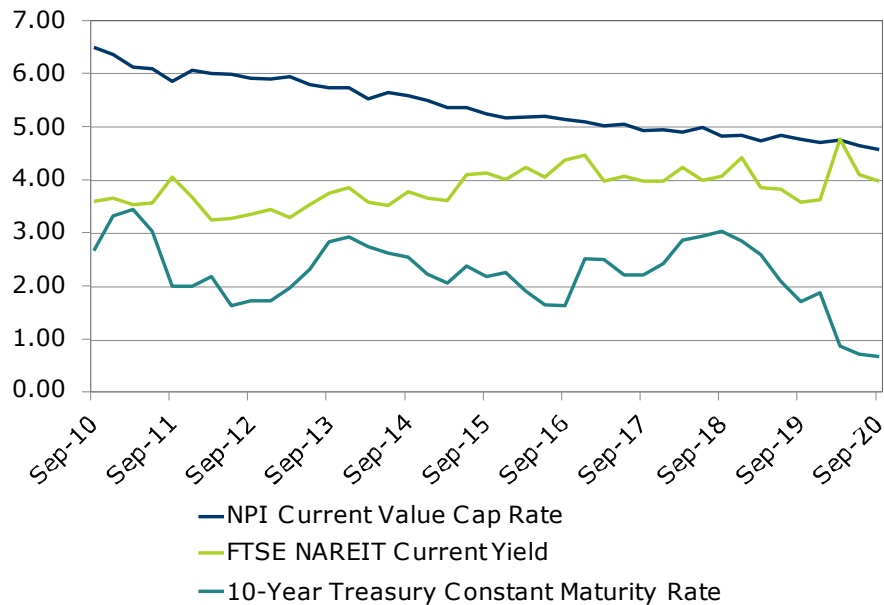
Wilshire Consulting

REAL ASSETS

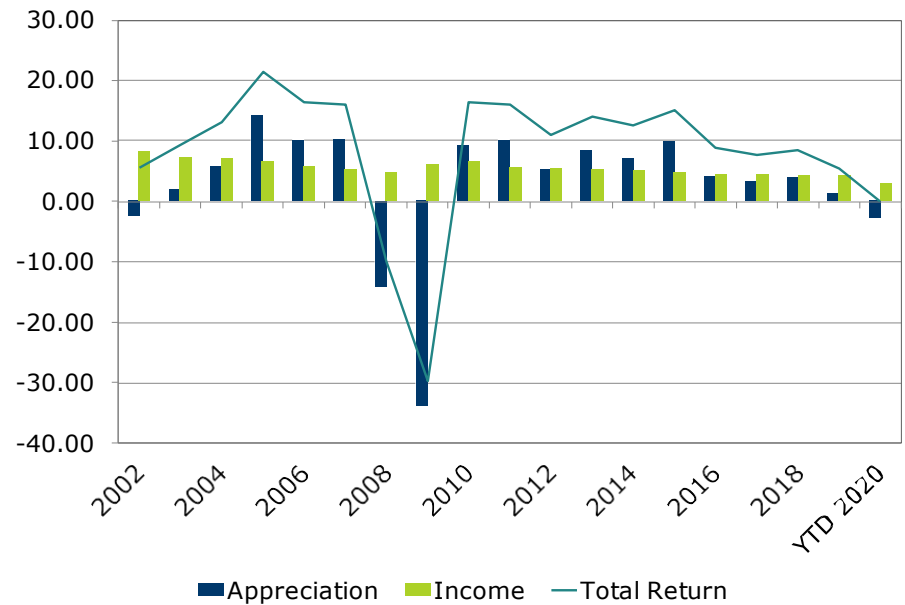


AS OF 9/30/2020	QTR	YTD	1 YR	3 YR	5 YR	10 YR
BLOOMBERG BARCLAYS U.S. TIPS	3.0	9.2	10.1	5.8	4.6	3.6
BLOOMBERG COMMODITY INDEX	9.1	-12.1	-8.2	-4.2	-3.1	-6.0
WILSHIRE GLOBAL RESI INDEX	1.3	-19.3	-18.3	-0.7	3.0	6.5
NCREIF ODCE FUND INDEX	0.5	-0.1	1.4	5.2	6.6	10.3
NCREIF TIMBERLAND INDEX	0.0	0.2	0.2	2.2	2.6	4.4
ALERIAN MIDSTREAM ENERGY	-9.4	-36.2	-34.8	-11.9	-4.5	n.a.

REAL ESTATE VALUATION (%)



NCREIF ODCE FUND INDEX RETURN (%)



Data sources: Bloomberg, National Council of Real Estate Investment Fiduciaries



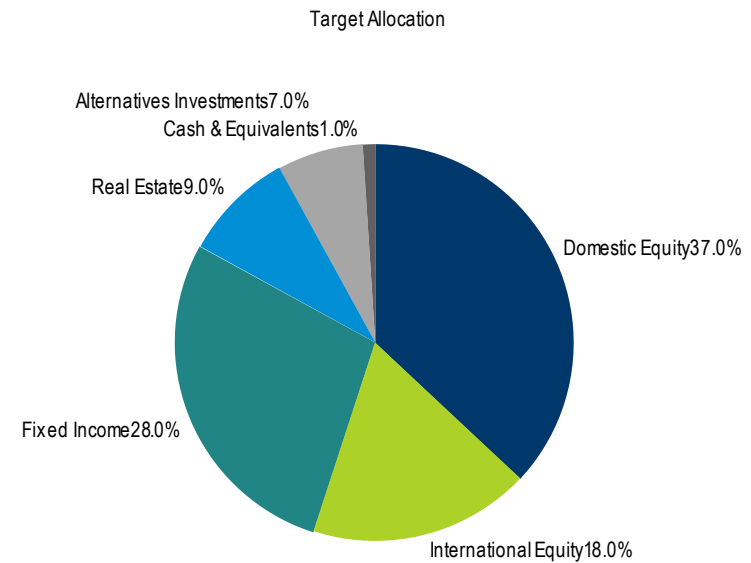
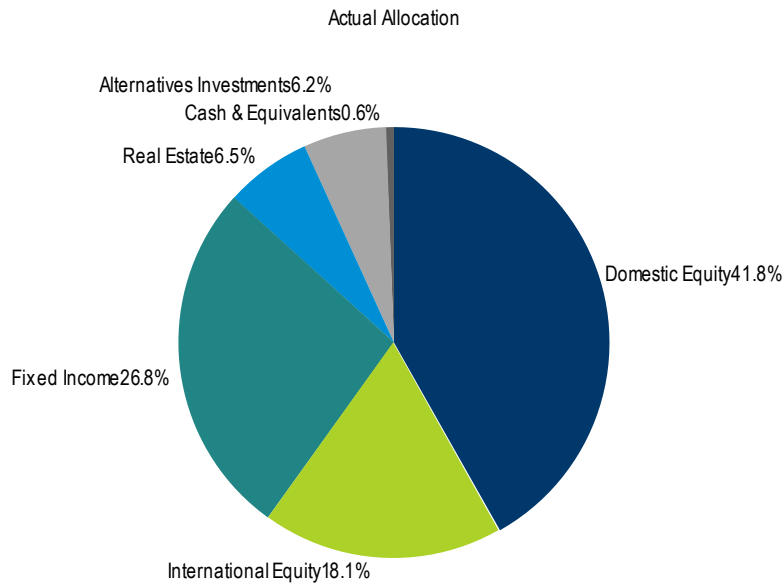
Total Fund

Wilshire Consulting
Asset Allocation



Total Fund

Periods Ended As of September 30, 2020



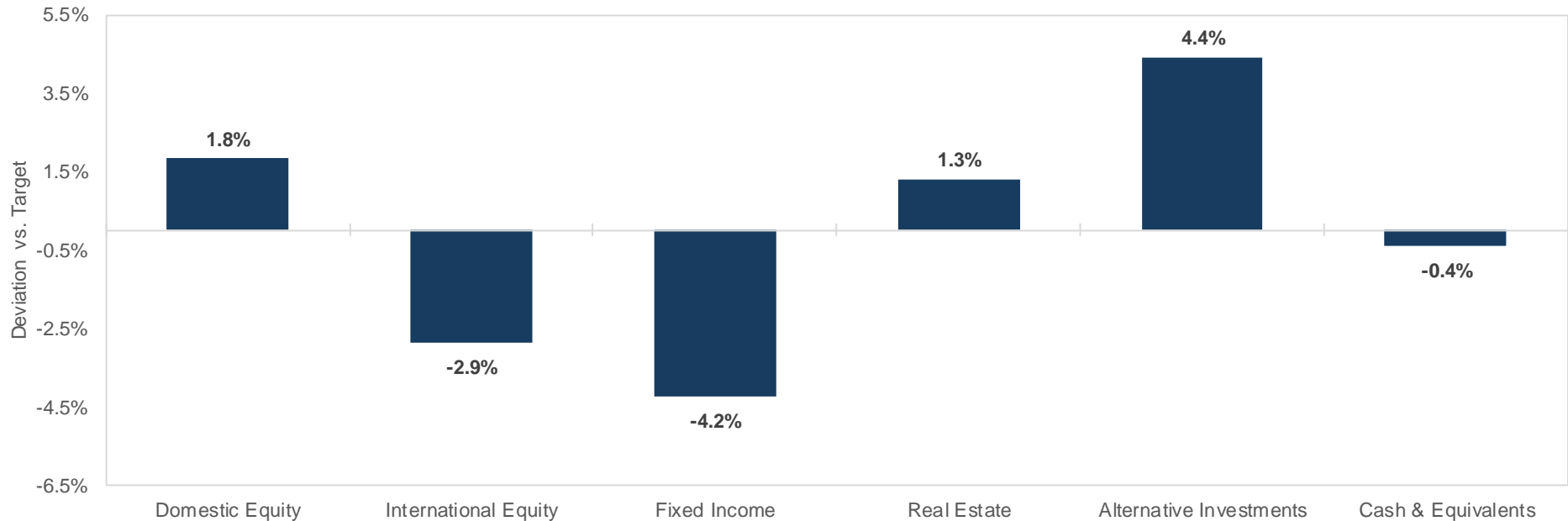
■ Domestic Equity
 ■ International Equity
 ■ Fixed Income
 ■ Real Estate
 ■ Alternatives Investments
 ■ Cash & Equivalents

	Actual Allocation \$Millions	Actual Allocation %	Target Allocation %	Differences %	Differences \$Millions
Total Fund	45,179	100.0	100.0	0.0	
■ Domestic Equity	18,895	41.8	37.0	4.8	2,179
■ International Equity	8,187	18.1	18.0	0.1	54
■ Fixed Income	12,086	26.8	28.0	-1.2	-564
■ Real Estate	2,932	6.5	9.0	-2.5	-1,134
■ Alternatives Investments	2,814	6.2	7.0	-0.8	-349
■ Cash & Equivalents	266	0.6	1.0	-0.4	-186

Projected Deviation From Benchmark

Period Ending September 30, 2020

Projected Asset Allocation Differences vs. Target



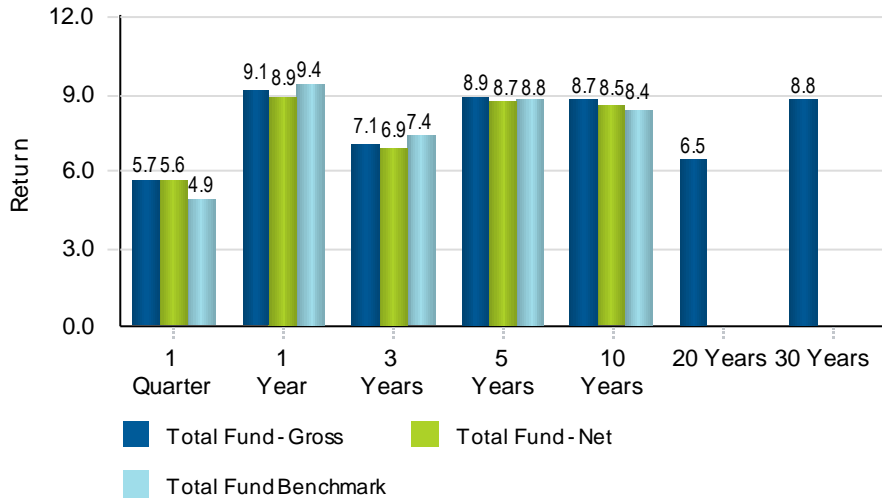
- Includes committed, but unfunded amounts for real estate (\$1,726.3 million) and alternatives (\$2,340.0 million). Assumes real estate and alternatives allocations are fully funded as of quarter end.
- Assumes that outstanding commitments are funded equally from the public markets asset classes (one-third from U.S. Equity, one-third from International Equity, and one-third from Fixed Income).

Composite Performance Summary

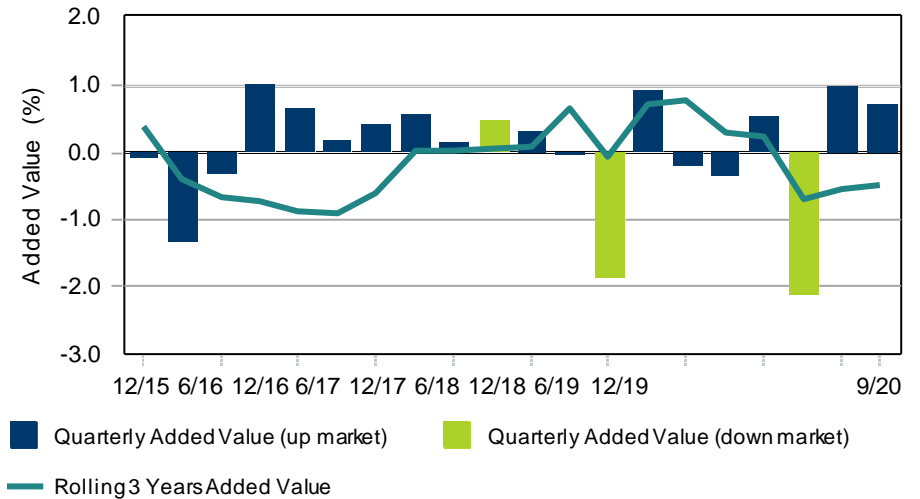
Total Fund

Periods Ended September 30, 2020

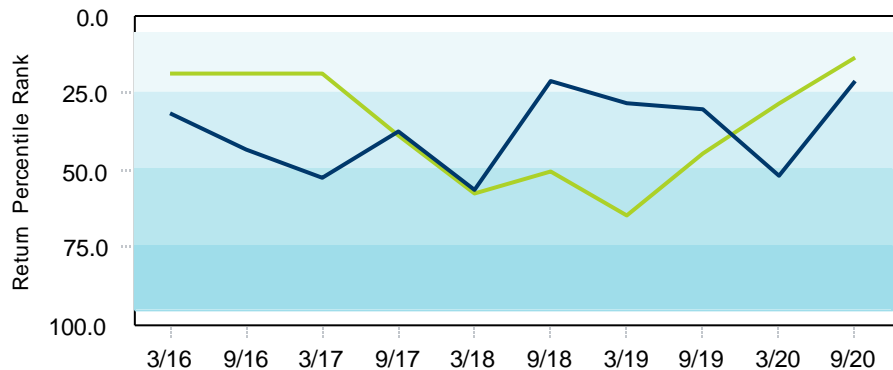
Comparative Performance



Added Value History

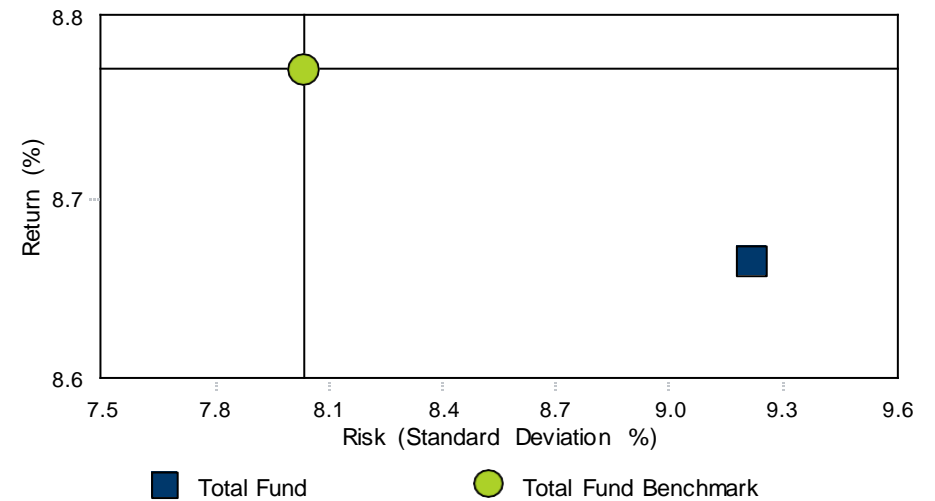


Rolling Percentile Rank : All Public Plans > \$1B - Total Fund



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Total Fund	10	2 (20%)	5 (50%)	3 (30%)	0 (0%)
Total Fund Benchmark	10	4 (40%)	4 (40%)	2 (20%)	0 (0%)

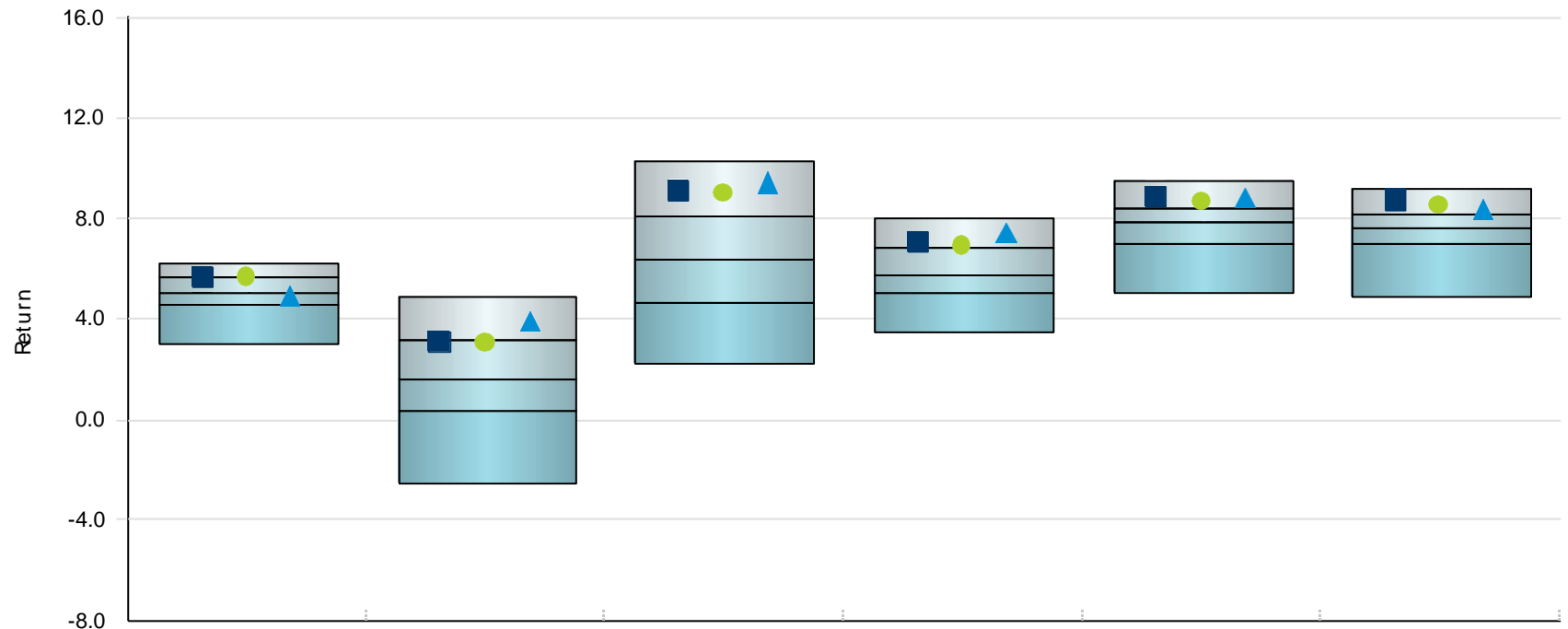
Risk and Return 10/01/15 - 09/30/20



Plan Sponsor Peer Group Analysis

Total Fund vs All Public Plans > \$1B-Total Fund(Gross)

Periods Ended September 30, 2020



	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ Total Fund	5.67 (21)	3.11 (26)	9.10 (12)	7.08 (17)	8.88 (15)	8.72 (12)
● Total Fund - Net	5.62 (26)	2.98 (26)	8.92 (13)	6.89 (21)	8.67 (20)	8.49 (17)
▲ Total Fund Benchmark	4.91 (62)	3.92 (14)	9.38 (10)	7.38 (13)	8.77 (18)	8.40 (21)
5th Percentile	6.27	4.90	10.25	7.98	9.51	9.15
1st Quartile	5.63	3.12	8.04	6.82	8.45	8.26
Median	5.06	1.61	6.41	5.82	7.85	7.66
3rd Quartile	4.56	0.34	4.73	5.04	7.02	7.04
95th Percentile	3.02	-2.58	2.26	3.52	5.03	4.93
Population	141	140	140	138	135	127

Total Fund Benchmark = 37.0% Russell 3000 Index, 28.0% Blmbg Aggregate, 18.0% MSCI ACWI ex US, 9.0% NCREIF NFI-ODCE ValWtNt, 7.0% 9% Annually and 1.0% 3-month Treasury Bill.

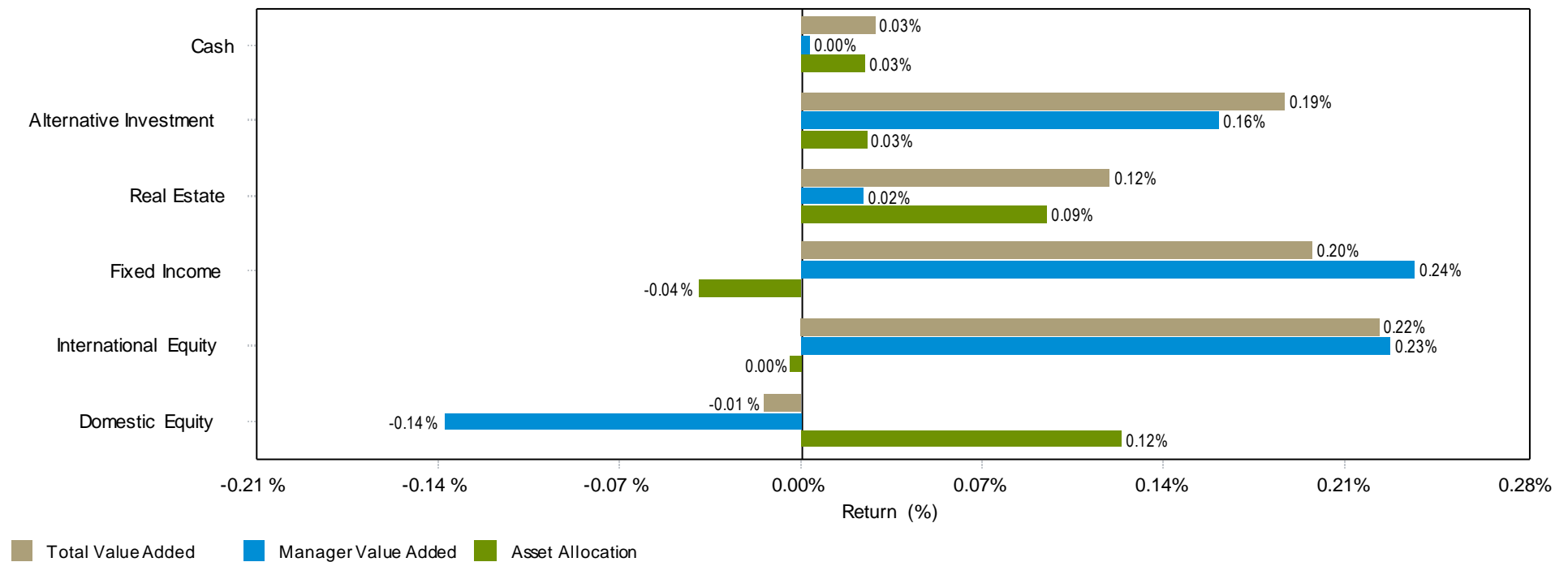
Total Fund Attribution

Total Fund

1 Quarter Ending September 30, 2020



Relative Attribution by Asset Class



Relative Attribution Effects							
	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equity	41.2	37.0	8.86	9.21	-0.14	0.12	-0.01
International Equity	17.9	18.0	7.54	6.25	0.23	0.00	0.22
Fixed Income	27.6	28.0	1.45	0.62	0.24	-0.04	0.20
Real Estate	6.7	9.0	0.63	0.27	0.02	0.09	0.12
Alternative Investment	6.1	7.0	4.86	2.18	0.16	0.03	0.19
Cash	0.5	1.0	0.60	0.04	0.00	0.03	0.03
Total Fund	100.0	100.0	5.62	4.91	0.52	0.23	0.71

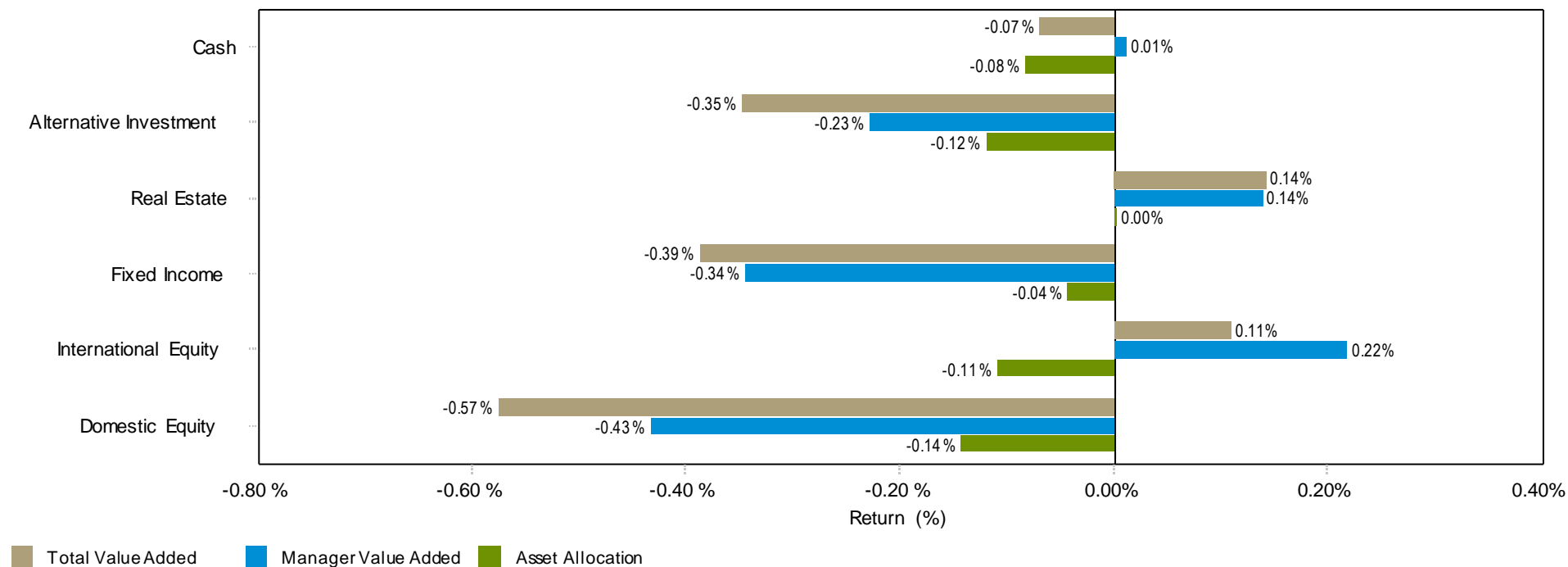
Total Fund Benchmark = 37.0% Russell 3000 Index, 28.0% Blmbg Aggregate, 18.0% MSCIACWI ex US, 9.0% NCREIF NFI-ODCE Val Wt Nt, 7.0% 9% Annually and 1.0% 3-month Treasury Bill.

Total Fund Attribution

Total Fund

Year To Date Ending September 30, 2020

Relative Attribution by Asset Class



Relative Attribution Effects							
	Effective Actual Weight	Effective Target Weight	Actual Return	Target Return	Manager Effect	Asset Allocation	Total Relative Return
Domestic Equity	39.5	37.0	4.17	5.41	-0.43	-0.14	-0.57
International Equity	17.8	18.0	-4.32	-5.44	0.22	-0.11	0.11
Fixed Income	29.0	28.0	5.97	6.79	-0.34	-0.04	-0.39
Real Estate	6.9	9.0	1.28	-0.74	0.14	0.00	0.14
Alternative Investment	6.1	7.0	3.06	6.68	-0.23	-0.12	-0.35
Cash	0.6	1.0	2.25	0.64	0.01	-0.08	-0.07
Total Fund	100.0	100.0	2.98	3.92	-0.63	-0.49	-0.95

Total Fund Benchmark = 37.0% Russell 3000 Index, 28.0% Blmbg Aggregate, 18.0% MSCIACWI ex US, 9.0% NCREIF NFI-ODCE Val Wt Nt, 7.0% 9% Annually and 1.0% 3-month Treasury Bill.

Wilshire Consulting

Asset Class Returns



Periods Ended September 30, 2020

	Performance (%)									
	1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	Since Inception	Inception Date
Total Fund	5.67	3.11	9.10	7.08	8.88	8.72	6.46	8.78	9.78	1/1/1982
Total Fund - Net	5.62	2.98	8.92	6.89	8.67	8.49				
Total Fund Benchmark	4.91	3.92	9.38	7.38	8.77	8.40				
Domestic Equity	8.91	4.32	13.79	10.15	12.52	13.04	6.67	11.15	11.55	1/1/1982
Domestic Equity - Net	8.86	4.17	13.59	9.95	12.29	12.78				
Blended Benchmark (U.S. Equity)	9.21	5.41	15.00	11.65	13.69	13.48	6.70	10.73		
U.S. Equity IMRF Custom Benchmark	8.51	2.28	11.22	9.23	12.23					
International Equity	7.62	-4.06	4.98	2.22	7.12	5.65	5.48	7.35	7.56	9/1/1986
International Equity - Net	7.54	-4.32	4.62	1.88	6.76	5.31				
MSCI AC World ex USA (Net)	6.25	-5.44	3.00	1.16	6.23	4.00	4.16			
International Equity IMRF Custom Benchmark	6.63	-5.12	3.62	1.21	6.29					
Fixed Income	1.48	6.06	6.65	5.24	4.84	4.47	5.63	6.70	8.19	1/1/1982
Fixed Income - Net	1.45	5.97	6.52	5.10	4.69	4.32				
Blmbg. Barc. U.S. Aggregate	0.62	6.79	6.98	5.24	4.18	3.64	5.01	6.01	7.70	
Fixed Income IMRF Custom Benchmark	1.03	5.91	6.39	5.08	4.38					
Real Estate	0.65	1.30	4.19	7.65	8.34	10.50	7.66	4.91	5.48	5/1/1985
Blended Benchmark (Real Estate)	0.27	-0.74	0.52	4.25	5.69	9.47	7.04	7.24	7.50	
Alternatives Investments	4.87	3.09	5.74	11.16	9.74	9.36	6.00	11.56	10.71	2/1/1986
Alternatives Investments - Net	4.86	3.06	5.71	11.06	9.57	9.12				
Alternatives Custom Benchmark	2.18	6.68	9.00	9.00	9.00	9.00	10.83	12.20	12.57	
Private Equity	5.25	4.16	7.69	13.87	12.10	12.07	7.28	14.15	12.91	2/1/1986
Alternatives Custom Benchmark	2.18	6.68	9.00	9.00	9.00	9.00	10.83	12.20	12.57	
Agriculture	-2.58	1.51	-2.08	-1.46	0.83	8.70	7.17		6.80	10/1/1997
NCREIF Farmland Index	0.96	1.47	3.84	5.33	6.13	10.85	12.14		11.48	
Timberland	1.03	5.21	5.78	1.75	0.40	3.11	3.55		7.33	10/1/1992
NCREIF Timberland Index	0.04	0.23	0.19	2.09	2.56	4.40	5.63		8.39	

Benchmark definitions on page 35-36.

Real Estate, Private Equity, Agriculture, Timberland, Unlisted Infrastructure returns shown are gross of fees.

Asset Class Returns



Periods Ended September 30, 2020

	Performance (%)									
	1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	20 Years	30 Years	Since Inception	Inception Date
Unlisted Infrastruct Alternatives Custom Benchmark	8.44	6.89	9.73						9.94	4/1/2018
Cash	2.18	6.68	9.00						9.00	
90 Day US Treasury Bill	0.60	2.25	3.48	2.95	2.13	1.15	1.81	3.22	3.80	7/1/1986
	0.04	0.64	1.10	1.69	1.18	0.62	1.55	2.69	3.24	

Benchmark definitions on page 35-36.

Real Estate, Private Equity, Agriculture, Timberland, Unlisted Infrastructure returns shown are gross of fees.

Wilshire Consulting

Asset Class Returns



Periods Ended September 30, 2020

	Performance (%)										
	YTD	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Total Fund	3.11	19.77	-4.23	16.02	8.01	0.53	6.15	20.20	13.84	-0.29	13.61
Total Fund - Net	2.98	19.57	-4.40	15.78	7.77	0.29	5.90	19.94	13.58	-0.50	13.37
Total Fund Benchmark	3.92	18.68	-3.12	14.37	7.89	1.37	7.33	15.84	12.19	1.47	12.72
Domestic Equity	4.32	29.23	-6.08	19.83	12.62	0.04	9.81	37.65	17.39	-0.74	18.92
Domestic Equity - Net	4.17	29.00	-6.25	19.59	12.35	-0.22	9.54	37.32	17.09	-0.99	18.62
Blended Benchmark (U.S. Equity)	5.41	31.02	-5.24	21.13	12.74	0.48	12.47	33.47	16.38	1.08	17.49
International Equity	-4.06	23.76	-14.13	27.95	3.56	-1.90	-2.80	20.24	19.11	-12.27	12.98
International Equity - Net	-4.32	23.39	-14.41	27.52	3.21	-2.23	-3.10	19.87	18.70	-12.50	12.68
MSCI ACWorld ex USA (Net)	-5.44	21.51	-14.20	27.19	4.50	-5.66	-3.87	15.29	16.83	-13.71	11.15
Fixed Income	6.06	9.50	-0.24	4.82	4.87	0.25	5.97	-0.59	7.41	7.60	8.59
Fixed Income - Net	5.97	9.37	-0.39	4.66	4.71	0.10	5.81	-0.75	7.24	7.44	8.43
Blmbg. Barc. U.S. Aggregate	6.79	8.72	0.01	3.54	2.65	0.55	5.97	-2.02	4.21	7.84	6.54
Real Estate	1.30	9.81	8.36	10.03	8.97	12.54	13.02	10.82	12.85	12.29	6.56
Real Estate - Net	1.28	9.76	8.36	10.03	8.97	12.46	13.02	10.82	12.85	12.29	6.56
Blended Benchmark (Real Estate)	-0.74	4.39	7.36	6.66	7.79	13.95	11.46	12.90	11.54	15.26	14.11
Alternatives Investments	3.09	9.48	17.32	12.09	5.32	6.90	11.63	12.11	6.24	5.05	9.76
Alternative Investments - Net	3.06	9.43	17.14	11.91	5.00	6.47	11.16	11.86	6.00	4.84	9.50
Alternatives Custom Benchmark	6.68	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	10.49
Private Equity	4.16	11.78	21.46	15.61	8.60	8.41	13.72	14.13	5.61	12.33	15.24
Alternatives Custom Benchmark	6.68	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	9.00	10.49
Agriculture	1.51	-5.82	0.28	-4.58	-0.47	20.18	24.73	25.68	13.55	9.70	2.68
NCREIF Farmland Index	1.47	4.81	6.74	6.19	7.09	10.35	12.63	20.91	18.58	15.16	8.81
Timberland	5.21	1.00	-3.62	4.68	-4.58	4.99	12.83	9.14	-3.59	3.20	3.21
NCREIF Timberland Index	0.23	1.30	3.21	3.63	2.59	4.97	10.48	9.69	7.75	1.57	-0.15
Unlisted Infrastruct	6.89	9.65									
Alternatives Custom Benchmark	6.68	9.00									

Benchmark definitions on page 35-36.

Private Equity, Agriculture, Timberland, Unlisted Infrastructure returns shown are gross of fees.

Asset Class Returns



Periods Ended September 30, 2020

	Performance (%)										
	YTD	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Cash	2.25	3.59	2.36	1.67	0.63	0.29	0.17	0.11	0.23	0.24	0.26
90 Day US Treasury Bill	0.64	2.28	1.87	0.86	0.25	0.03	0.04	0.05	0.08	0.08	0.13

Benchmark definitions on page 35-36.

Private Equity, Agriculture, Timberland, Unlisted Infrastructure returns shown are gross of fees.

Account Name	From Date	To Date	Benchmark
Domestic Equity Blended	1/1/2015	Present	100% Russell 3000 Index
Benchmark	1/1/1982	12/31/2014	100% Dow Jones US Total Stock Market Index
Real Estate Blended	1/1/2013	Present	100% NCREIF Fund Index-ODCE (VW) (Net)** 100%
Benchmark	1/1/2007	12/31/2012	100% NPI + 1%
	1/1/2005	12/31/2016	100% Consumer Price Index + 5%
Alternatives Custom	7/1/2010	Present	100% Annualized rate of 9.0%
Benchmark	1/1/2004	6/30/2010	100% Annualized rate of 12.0%
	1/1/2003	12/31/2003	100% Annualized rate of 13.0%
	2/1/1986	12/31/2002	100% Annualized rate of 15.0%
U.S. Equity IMRF Custom Benchmark			Blend of the U.S. Equity Style benchmarks returns, dollar weighted by the actual allocation at previous month end.
International Equity IMRF Custom Benchmark			Blend of the the International Equity Style benchmarks returns, dollar weighted by the actual allocation at previous month end.
Fixed Income IMRF Custom Benchmark			Blend of the the Fixed Income Style benchmarks returns, dollar weighted by the actual allocation at previous month end.

**ODCE returns are updated quarterly.



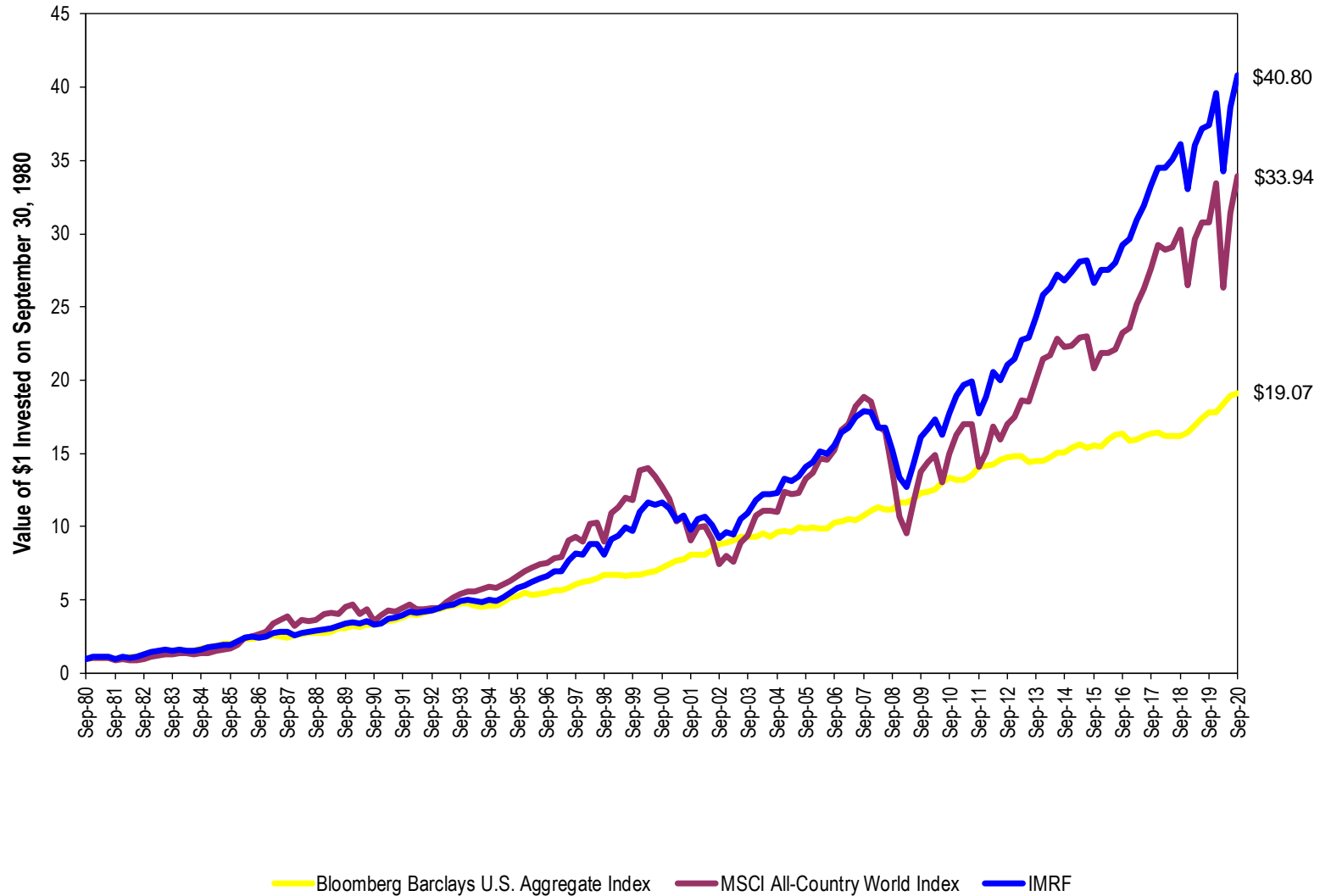
Account Name	From Date	To Date	Benchmark
Total Fund Benchmark			<p>The total fund benchmark is a blend of the asset class benchmark returns weighted by the target allocation for each asset class, currently:</p> <p>37% Russell 3000 Index, 28% Blmbg. Barc. U.S. Aggregate, 18% MSCI AC World ex USA (Net), 9% NCREIF Fund Index-ODCE (VW) (Net), 7% Alternatives Custom Benchmark, 1% 90 Day US Treasury Bill.</p>

Total Fund Growth of a Dollar

Periods Ended September 30, 2020



Growth of a Dollar - As of September 30, 2020



Periods Ended September 30, 2020

	Jun-2020		Sep-2020	
	\$	%	\$	%
Domestic Equity	17,295,813,978	40.12	18,895,106,985	41.82
Large Cap Growth	6,948,567,457	16.12	7,889,181,328	17.46
NTGI S&P 500 Growth	2,611,124,948	6.06	2,917,163,969	6.46
Sands Capital	2,808,741,818	6.52	3,241,338,813	7.17
Xponance Russell 1000 G	1,528,700,691	3.55	1,730,678,547	3.83
Large Cap Value	4,541,830,303	10.54	4,386,448,201	9.71
Dodge & Cox	1,226,748,297	2.85	1,224,325,502	2.71
BMO	735,567,463	1.71	769,965,276	1.70
LSV Asset	1,243,365,023	2.88	1,040,464,150	2.30
NTGI S&P 500 Value	1,336,149,521	3.10	1,351,693,275	2.99
Large Cap Pass. Core	2,593,851,075	6.02	2,828,824,944	6.26
NTGI MarketCap Idx.	2,593,851,075	6.02	2,828,824,944	6.26
Factor Diversity Strategies		0.00	501,364,933	1.11
U.S. Large Cap FDP-GSAM		0.00	501,364,933	1.11
Quantitative Factor Strategies	240,593,860	0.56	255,625,949	0.57
Quantitative US Equity - SciBeta	240,593,860	0.56	255,625,949	0.57
Small Cap Growth	757,859,352	1.76	837,324,603	1.85
Frontier Capital	596,999,920	1.38	665,299,875	1.47
FIAM Small Cap	160,859,433	0.37	172,024,728	0.38
Small Cap Value	1,222,700,615	2.84	1,259,986,862	2.79
Channing	202,452,804	0.47	209,645,374	0.46
DFA Small Cap Val.	450,036,277	1.04	466,279,900	1.03
Inv. Couns. Maryland	570,211,534	1.32	584,061,589	1.29

Periods Ended September 30, 2020

	Jun-2020		Sep-2020	
	\$	%	\$	%
Micro Cap	367,815,935	0.85	305,710,884	0.68
DFA Micro Cap (9-10)	367,815,935	0.85	305,710,884	0.68
Public Real Assets	622,595,379	1.44	630,639,281	1.40
Brookfield	147,206,133	0.34	145,053,167	0.32
Cohen & Steers	475,389,246	1.10	485,586,113	1.07
International Equity	7,609,681,490	17.65	8,186,708,910	18.12
Intl Large Cap Growth	1,253,702,405	2.91	1,389,068,145	3.07
EARNEST Part. Intl	407,303,824	0.94	427,644,407	0.95
William Blair	846,398,582	1.96	961,423,737	2.13
Intl Large Cap Value	1,097,036,344	2.54	1,134,626,374	2.51
Brandes Investment	507,521,852	1.18	522,640,473	1.16
Mondrian	481,825,341	1.12	496,390,083	1.10
Lazard	107,689,151	0.25	115,595,818	0.26
Intl Large Cap Core	3,546,187,057	8.23	3,764,605,864	8.33
Arrowstreet Capital	705,733,947	1.64	755,361,131	1.67
Brown Capital	386,180,068	0.90	554,706,127	1.23
GlobeFlex Capital	496,889,120	1.15	648,849,468	1.44
NTGI MSCI EAFE	1,955,291,758	4.54	1,804,662,815	3.99
Progress Intl Equity	1,699,147	0.00	903,533	0.00
Transition Account	393,017	0.00	122,790	0.00
Intl All Cap Developed	129,082,958	0.30	139,424,997	0.31
Ativo International	129,082,958	0.30	139,424,997	0.31

Investment Manager Asset Allocation



Periods Ended September 30, 2020

	Jun-2020		Sep-2020	
	\$	%	\$	%
International Small Cap	482,798,494	1.12	548,486,170	1.21
Franklin Templeton	176,156,559	0.41	199,320,049	0.44
William Blair IntSC	306,641,935	0.71	349,166,120	0.77
Emerging Mkt Equity	1,100,874,231	2.55	1,210,497,361	2.68
Genesis Asset Mngrs.	1,100,874,231	2.55	1,210,497,361	2.68

Periods Ended September 30, 2020

	Jun-2020		Sep-2020	
	\$	%	\$	%
Fixed Income	12,278,611,553	28.48	12,086,120,629	26.75
Domestic Fixed Core	3,765,383,854	8.73	3,800,625,773	8.41
Brandes FI Core	384,176,382	0.89	384,746,925	0.85
EARNEST Partners	1,042,449,118	2.42	1,047,701,590	2.32
Xponance Yield Advantage Agg.	1,108,936,180	2.57	1,117,920,778	2.47
Garcia Hamilton	1,116,618,903	2.59	1,118,905,764	2.48
Ramirez Asset Management	113,203,271	0.26	131,350,717	0.29
Domestic Fixed Passive Core	3,763,446,071	8.73	3,787,148,175	8.38
NTGI Blmbg Agg.	1,921,193,764	4.46	1,932,771,883	4.28
BlackRock US Debt I	1,842,252,307	4.27	1,854,376,292	4.10
Domestic Fixed Core Plus	3,248,578,176	7.54	2,954,042,528	6.54
LM Capital Group FI	960,889,804	2.23	974,155,367	2.16
Progress Inv. FI	46,812	0.00	3,700	0.00
BMO - TCH	986,366,335	2.29	663,844,479	1.47
Western Asset	1,122,831,517	2.60	1,133,291,450	2.51
Longfellow Core Plus	178,443,709	0.41	182,747,532	0.40
Bank Loans	525,326,297	1.22	541,293,227	1.20
Barings Global Loan Fund	525,326,297	1.22	541,293,227	1.20
Emerging Markets Debt	213,407,036	0.50	216,885,366	0.48
Standish-Mellon EMD	213,407,036	0.50	216,885,366	0.48
High Yield	762,470,118	1.77	786,125,560	1.74
MacKay Shields	762,150,466	1.77	786,097,017	1.74
FIAM High Yield	319,652	0.00	28,543	0.00

Investment Manager Asset Allocation



Periods Ended September 30, 2020

	Jun-2020		Sep-2020	
	\$	%	\$	%
Real Estate	2,973,376,487	6.90	2,931,690,651	6.49
Real Estate Core Cmp	1,598,039,573	3.71	1,560,907,617	3.45
TA Assoc. Buckhead	617,951,573	1.43	586,042,640	1.30
Barings Core Property		0.00		0.00
Barings Euro Core Property	130,566,748	0.30	134,213,306	0.30
Blackstone Property Euro	135,897,797	0.32	141,602,089	0.31
INVESCO Core Real Estate	214,079,432	0.50	203,018,548	0.45
INVESCO European real estate	57,349,823	0.13	58,327,483	0.13
AEW Core Property Tr	234,536,661	0.54	232,592,669	0.51
CBRE Core Partners	207,657,540	0.48	205,110,882	0.45
RE Non-Core Cmp	1,375,336,913	3.19	1,370,783,034	3.03
Artemis MWBE Spruce	218,177,200	0.51	220,088,526	0.49
Franklin T. EMREFF	7,860,669	0.02	5,378,057	0.01
Security Capital	49,800,323	0.12	53,065,585	0.12
Dune II	20,456,881	0.05	19,935,889	0.04
Non-Core Real Estate Funds	933,925,379	2.17	921,381,607	2.04
Non-Core Intl Real Estate	144,972,599	0.34	150,739,511	0.33
Rockwood Fund VIII	1	0.00	61,273	0.00
Almanac ARS V	143,862	0.00	132,586	0.00
TA Assoc. - Fund IX		0.00		0.00
Alternatives Investments	2,602,977,223	6.04	2,813,944,850	6.23
Absolute Return	327,113	0.00	262,168	0.00
Aurora Investment	327,113	0.00	262,168	0.00

Investment Manager Asset Allocation



Periods Ended September 30, 2020

	Jun-2020		Sep-2020	
	\$	%	\$	%
Private Equity	2,131,821,562	4.95	2,327,565,327	5.15
Abbott S/A Comp.	352,787,433	0.82	382,260,962	0.85
Muller Monroe MPEFF	4,969,587	0.01	4,707,209	0.01
Pantheon S/A Comp.	269,573,636	0.63	247,341,852	0.55
Private Equity Fund - Domestic	1,165,530,329	2.70	1,324,410,427	2.93
Private Equity Fund - International	323,952,227	0.75	348,049,166	0.77
Oakbrook Opportunities Fund	15,008,349	0.03	20,795,710	0.05
Private Credit	130,898,261	0.30	143,598,103	0.32
Private Credit Fund - Domestic	130,898,261	0.30	143,598,103	0.32
Agriculture	216,305,455	0.50	210,733,027	0.47
Premiere Partners IV	216,305,455	0.50	210,733,027	0.47
Timberland	76,355,317	0.18	76,694,130	0.17
Forest Investment	76,355,317	0.18	76,694,130	0.17
Unlisted Infrastructure	47,269,515	0.11	55,092,095	0.12
Unlisted Infrastructure Funds	47,269,515	0.11	55,092,095	0.12
Cash & Equivalents	346,847,746	0.80	265,617,801	0.59
Total Fund	43,107,308,477	100.00	45,179,189,826	100.00



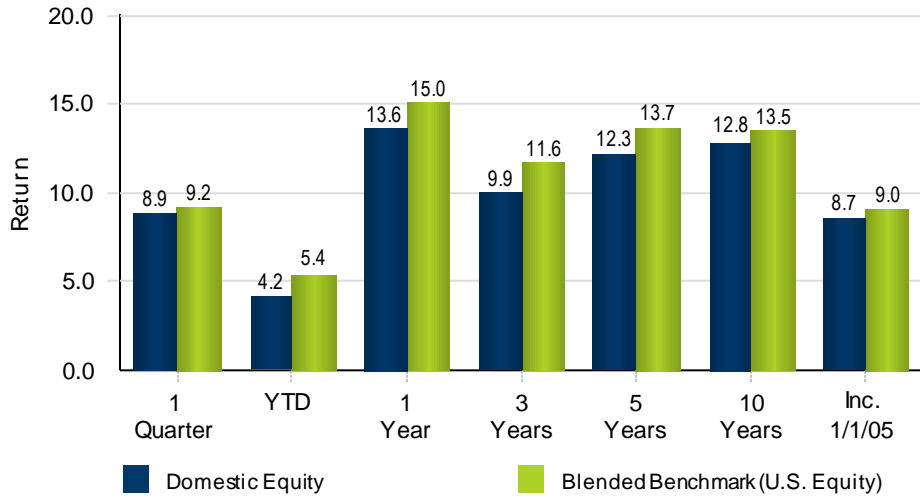
Domestic Equity

Composite Performance Summary

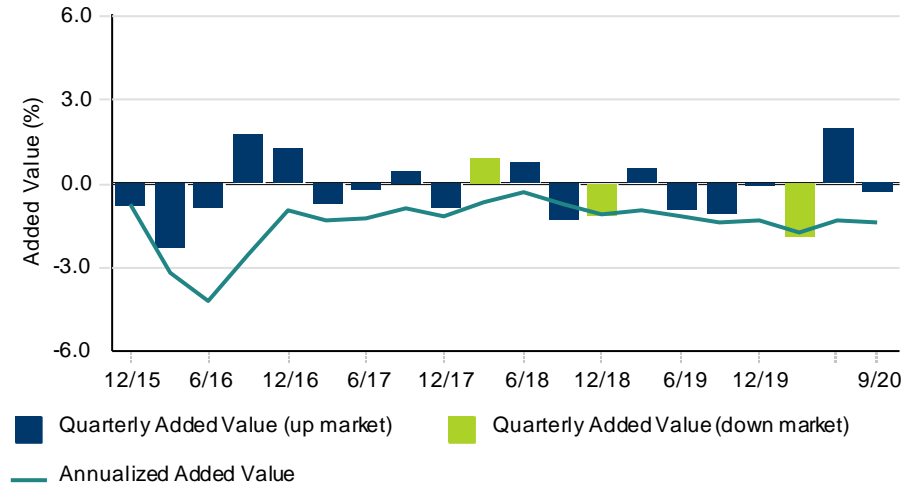
Domestic Equity

Periods Ended September 30, 2020

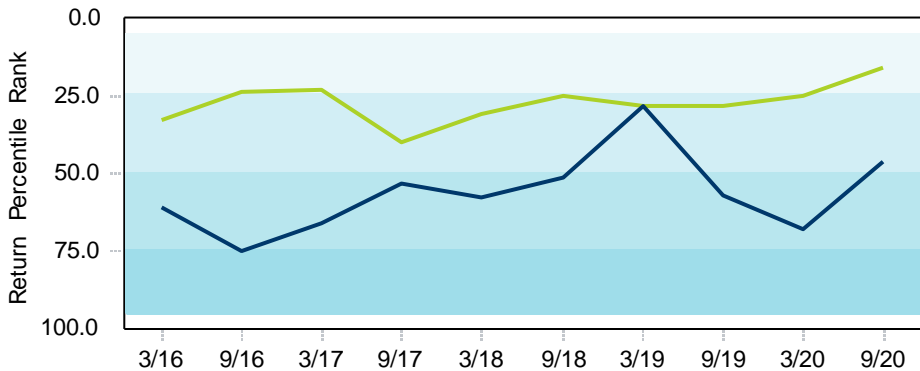
Comparative Performance



Added Value History

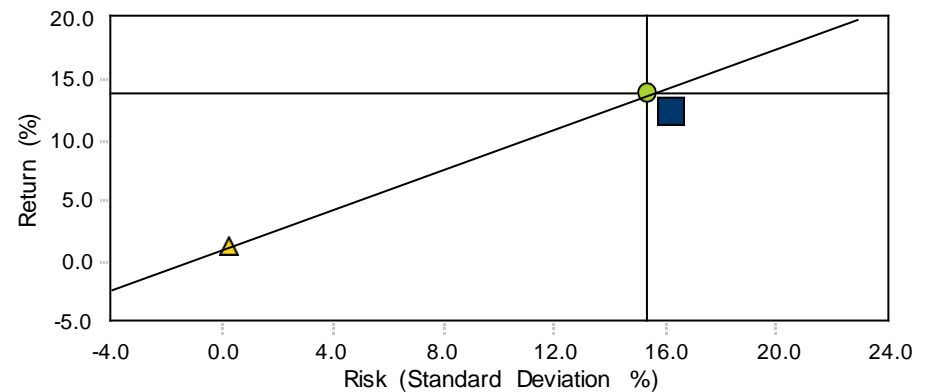


Rolling Percentile Rank: All Public Plans > \$1B-US Equity Segment



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Domestic Equity	10	0 (0%)	2 (20%)	8 (80%)	0 (0%)
Benchmark	10	5 (50%)	5 (50%)	0 (0%)	0 (0%)

Risk and Return 10/1/15 - 09/30/20



Plan Sponsor Peer Group Analysis

Domestic Equity vs All Public Plans > \$1B-US Equity Segment(Gross)

Periods Ended September 30, 2020



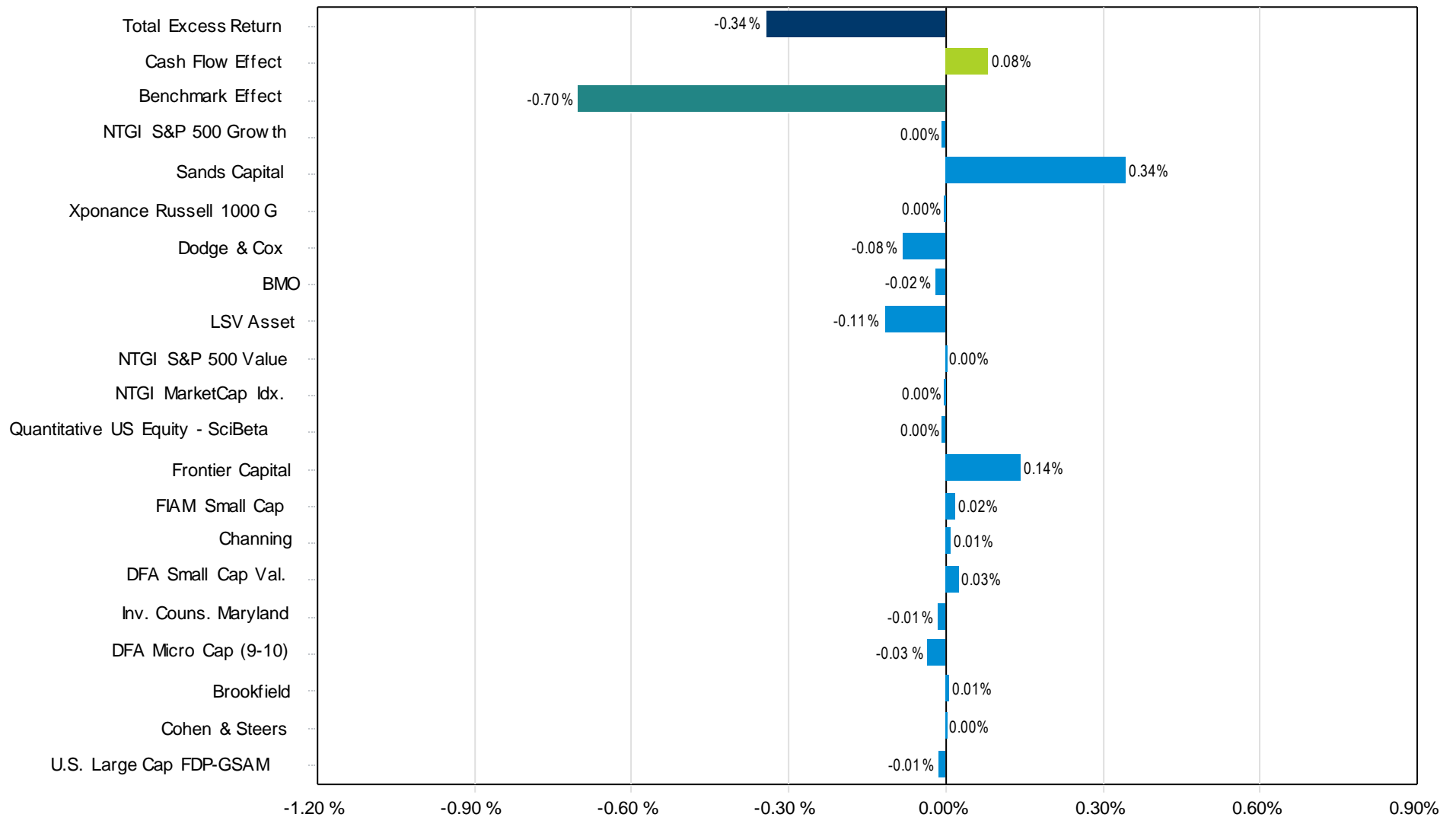
	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ Domestic Equity	8.91 (23)	4.32 (30)	13.79 (25)	10.15 (44)	12.52 (41)	13.04 (31)
● Domestic Equity - Net	8.86 (25)	4.17 (31)	13.59 (27)	9.95 (46)	12.29 (46)	12.78 (45)
▲ Blended Benchmark (U.S. Equity)	9.21 (15)	5.41 (21)	15.00 (21)	11.65 (16)	13.69 (22)	13.48 (18)
5th Percentile	9.84	7.50	17.16	12.57	14.48	14.05
1st Quartile	8.80	4.56	13.77	11.01	13.24	13.26
Median	8.10	2.39	10.41	9.69	12.02	12.70
3rd Quartile	7.46	0.15	8.34	8.59	11.03	12.12
95th Percentile	5.36	-6.24	1.13	4.76	7.78	9.85
Population	55	52	51	47	45	30

Asset Class Attribution

Domestic Equity

Periods Ended 1 Quarter Ending September 30, 2020

1 Quarter

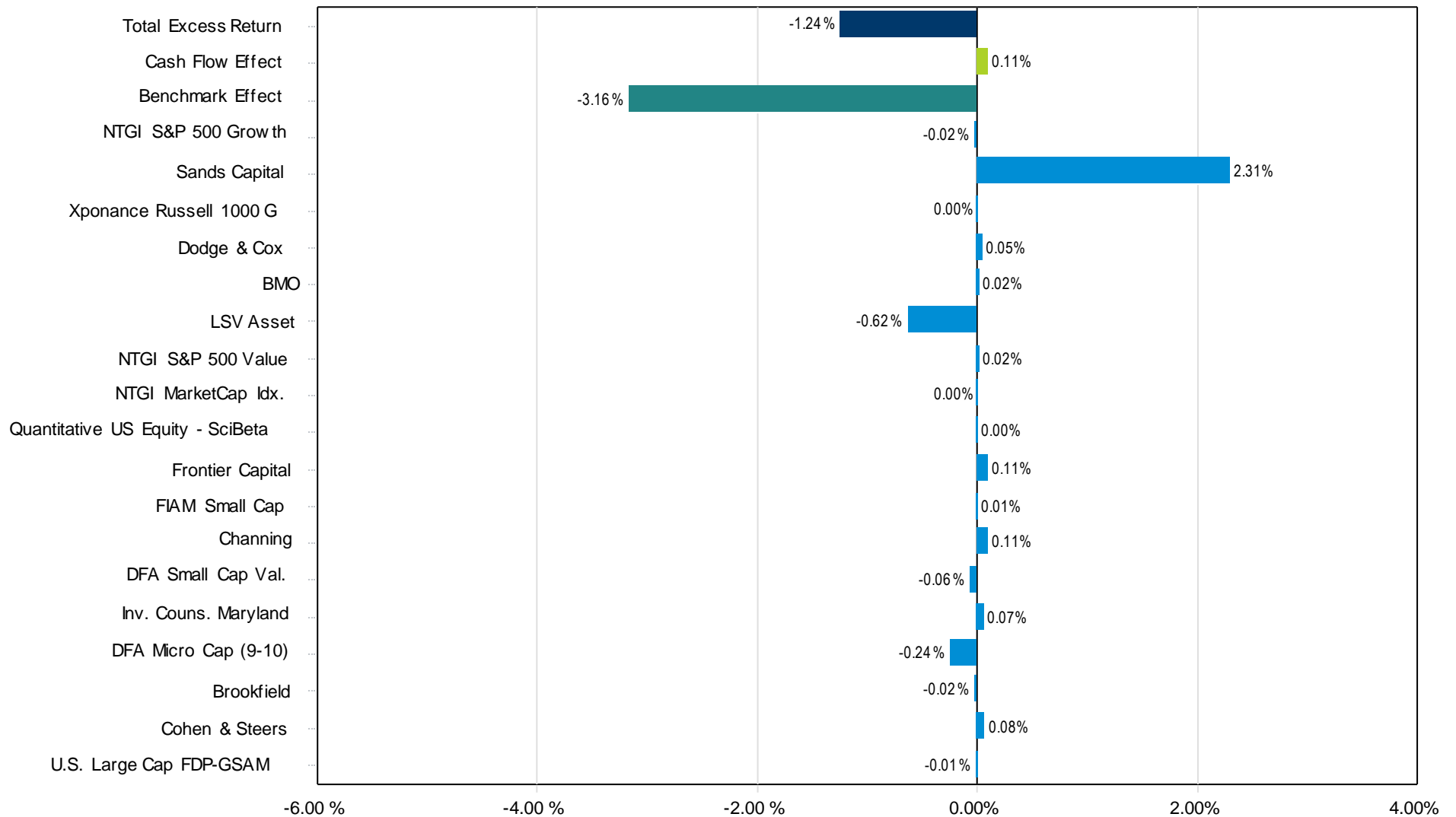


Asset Class Attribution

Domestic Equity

Periods Ended Year To Date Ending September 30, 2020

Year To Date



Domestic Equity
Periods Ended September 30, 2020

	Market Value \$	Performance (%)							
		1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Domestic Equity	18,895,106,985	8.91 (23)	4.32 (30)	13.79 (25)	10.15 (44)	12.52 (41)	13.04 (31)	11.55	1/1/1982
Domestic Equity - Net		8.86 (25)	4.17 (31)	13.59 (27)	9.95 (46)	12.29 (46)	12.78 (45)		
Blended Benchmark(U.S. Equity)		9.21 (15)	5.41 (21)	15.00 (21)	11.65 (16)	13.69 (22)	13.48 (18)		
Russell 3000 Index		9.21 (15)	5.41 (21)	15.00 (21)	11.65 (16)	13.69 (22)	13.48 (18)	11.51	
Large Cap Equity	15,605,819,407	9.85 (12)	8.62 (8)	18.79 (7)	12.47 (13)	14.10 (14)	13.90 (6)	11.35 (35)	1/1/1982
Large Cap Equity - Net		9.83 (12)	8.55 (8)	18.68 (7)	12.36 (14)	13.98 (18)	13.75 (9)		
Russell 1000 Index		9.47 (19)	6.40 (18)	16.01 (16)	12.38 (14)	14.09 (14)	13.76 (9)	11.67 (24)	
Large Cap Growth	7,889,181,328	13.54 (18)	30.42 (15)	42.98 (18)	23.62 (14)	20.53 (16)	17.25 (19)	12.57 (16)	1/1/1982
Large Cap Growth - Net		13.52 (19)	30.34 (15)	42.86 (18)	23.50 (14)	20.40 (17)	17.08 (22)		
LCG Blended Benchmark*		13.22 (20)	24.33 (31)	37.53 (29)	21.67 (28)	20.10 (20)	17.25 (19)		
Russell 1000 Growth Index		13.22 (20)	24.33 (31)	37.53 (29)	21.67 (28)	20.10 (20)	17.25 (19)	11.72 (36)	
NTGI S&P 500 Growth	2,917,163,969	11.72 (41)	20.47 (55)	30.50 (63)	19.03 (51)	18.33 (44)	16.52 (29)	8.98 (35)	8/1/2001
NTGI S&P 500 Growth - Net		11.72 (41)	20.46 (55)	30.49 (63)	19.02 (51)	18.32 (44)	16.51 (29)		
S&P 500 Growth		11.75 (40)	20.61 (54)	30.64 (63)	19.09 (51)	18.37 (43)	16.53 (29)	8.95 (36)	
Xponance Russell 1000 G	1,730,678,547	13.21 (20)	24.32 (32)	37.50 (29)				19.41 (27)	10/1/2018
Xponance Russell 1000 G - Net		13.21 (20)	24.30 (32)	37.48 (29)				19.39 (28)	
Russell 1000 Growth Index		13.22 (20)	24.33 (31)	37.53 (29)				19.43 (27)	
Sands Capital	3,241,338,813	15.40 (10)	44.70 (5)	60.19 (5)	29.07 (5)	23.90 (4)	20.20 (3)	14.34 (2)	11/1/2003
SandsCapital - Net		15.35 (11)	44.49 (5)	59.88 (5)	28.79 (5)	23.63 (5)	19.93 (3)		
LCG Blended Benchmark*		13.22 (20)	24.33 (31)	37.53 (29)	21.67 (28)	20.10 (20)	17.25 (19)	11.32 (27)	
Russell 1000 Growth Index		13.22 (20)	24.33 (31)	37.53 (29)	21.67 (28)	20.10 (20)	17.25 (19)	11.36 (26)	
Large Cap Value	4,386,448,201	4.60 (55)	-12.80 (65)	-4.75 (48)	2.12 (55)	7.70 (41)	10.65 (15)	9.82 (79)	10/1/1982
Large Cap Value - Net		4.57 (55)	-12.88 (65)	-4.88 (49)	1.97 (57)	7.53 (45)	10.47 (19)		
LCV Blended Benchmark**		5.59 (34)	-11.58 (55)	-5.03 (51)	2.63 (47)	7.66 (42)	9.95 (30)		
Russell 1000 Value Index		5.59 (34)	-11.58 (55)	-5.03 (51)	2.63 (47)	7.66 (42)	9.95 (30)	11.32 (2)	

* The LCG Blended Benchmark is currently the Russell 1000 Growth Index. Returns prior to January 1, 2006, reflect those of the S&P 500/Citigroup Growth Index.

** The LCV Blended Benchmark is currently the Russell 1000 Value Index. Returns prior to January 1, 2006, reflect those of the S&P 500/Citigroup Value Index.

*** Public Real Assets benchmark is 1/3 Dow Jones Global Infrastructure Composite Index + 2/3 FTSE Global Core Infrastructure 50/50 Net Tax Index.

Wilshire Consulting Performance

Domestic Equity

Periods Ended September 30, 2020



	Market Value \$	Performance (%)							
		1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Dodge & Cox	1,224,325,502	4.51 (57)	-10.81 (44)	-2.07 (28)	3.01 (41)	9.24 (16)	11.34 (5)	8.60 (11)	9/1/2003
Dodge & Cox - Net		4.46 (58)	-10.96 (46)	-2.28 (29)	2.79 (44)	9.01 (19)	11.11 (7)		
LCV Blended Benchmark**		5.59 (34)	-11.58 (55)	-5.03 (51)	2.63 (47)	7.66 (42)	9.95 (30)	7.47 (40)	
Russell 1000 Value Index		5.59 (34)	-11.58 (55)	-5.03 (51)	2.63 (47)	7.66 (42)	9.95 (30)	7.62 (35)	
BMO	769,965,276	5.27 (41)	-10.92 (45)	-4.70 (47)	1.09 (68)	6.40 (66)	10.53 (18)	7.18 (9)	2/1/2001
BMO - Net		5.27 (41)	-10.94 (46)	-4.77 (48)	0.91 (69)	6.20 (70)	10.31 (23)		
LCV Blended Benchmark**		5.59 (34)	-11.58 (55)	-5.03 (51)	2.63 (47)	7.66 (42)	9.95 (30)	5.16 (67)	
Russell 1000 Value Index		5.59 (34)	-11.58 (55)	-5.03 (51)	2.63 (47)	7.66 (42)	9.95 (30)	6.10 (36)	
LSV Asset	1,040,464,150	4.09 (65)	-17.34 (91)	-9.32 (82)	0.00 (82)	6.47 (66)	10.34 (22)	9.50 (7)	2/1/2003
LSV Asset - Net		4.02 (67)	-17.49 (91)	-9.54 (83)	-0.23 (84)	6.22 (70)	10.07 (27)		
LCV Blended Benchmark**		5.59 (34)	-11.58 (55)	-5.03 (51)	2.63 (47)	7.66 (42)	9.95 (30)	8.36 (35)	
Russell 1000 Value Index		5.59 (34)	-11.58 (55)	-5.03 (51)	2.63 (47)	7.66 (42)	9.95 (30)	8.37 (35)	
NTGI S&P 500 Value	1,351,693,275	4.83 (50)	-11.22 (49)	-2.42 (30)	4.30 (25)	8.96 (20)	10.44 (20)	5.51 (60)	8/1/1999
NTGI S&P 500 Value - Net		4.83 (50)	-11.23 (49)	-2.43 (30)	4.29 (25)	8.95 (20)	10.44 (20)		
S&P 500 Value		4.79 (51)	-11.47 (53)	-2.68 (32)	4.18 (27)	8.84 (21)	10.35 (22)	5.47 (61)	
Large Cap Pass. Core	2,828,824,944	9.06 (44)	5.23 (46)	14.75 (44)	11.57 (48)	13.68 (45)	13.50 (45)	11.20 (74)	1/1/1985
Large Cap Pass. Core - Net		9.06 (44)	5.23 (46)	14.74 (44)	11.56 (48)	13.67 (46)	13.50 (46)		
Dow JonesUS Total StockMarket Index		9.07 (44)	5.25 (46)	14.77 (44)	11.53 (48)	13.60 (47)	13.43 (47)		
NTGI MarketCap Idx.	2,828,824,944	9.06 (44)	5.23 (46)	14.75 (44)	11.57 (48)	13.68 (45)	13.50 (45)	10.98 (72)	2/1/1985
NTGI MarketCap Idx. - Net		9.06 (44)	5.23 (46)	14.74 (44)	11.56 (48)	13.67 (46)	13.50 (46)		
Dow JonesUS Total StockMarket Index		9.07 (44)	5.25 (46)	14.77 (44)	11.53 (48)	13.60 (47)	13.43 (47)		
Factor Diversity Strategies	501,364,933							-0.92	8/18/2020
U.S. Large Cap FDP-GSAM	501,364,933							-0.92	8/18/2020
U.S. Large Cap FDP-GSAM - Net								-0.93	
Solactive GBS U.S. 1000 Index								-0.30	
GSAM Active Beta US. Large Cap FDC Index								-0.92	
Quantitative Factor Strategies	255,625,949	6.25	-3.05	2.00				2.23	9/17/2019

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** The LCV Blended Benchmark is currently the Russell 1000 Value Index. Returns prior to January 1, 2006, reflect those of the S&P 500/Citigroup Value Index.

*** Public Real Assets benchmark is 1/3 Dow Jones Global Infrastructure Composite Index + 2/3 FTSE Global Core Infrastructure 50/50 Net Tax Index.

Wilshire Consulting
Performance



Domestic Equity

Periods Ended September 30, 2020

	Market Value \$	Performance (%)							
		1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Quantitative US Equity - SciBeta	255,625,949	6.25	-3.05	2.00				2.23	9/17/2019
Quantitative US Equity - SciBeta - Net		6.12	-3.42	1.61				1.87	
SciBeta US Hi-Fctr-Intst Div Multi-Beta Multi-Strat Index		6.41	-3.75	1.31				1.23	

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** The LCV Blended Benchmark is currently the Russell 1000 Value Index. Returns prior to January 1, 2006, reflect those of the S&P 500/Citigroup Value Index.

*** Public Real Assets benchmark is 1/3 Dow Jones Global Infrastructure Composite Index + 2/3 FTSE Global Core Infrastructure 50/50 Net Tax Index.

Wilshire Consulting
Performance



Domestic Equity
Periods Ended September 30, 2020

	Market Value \$	Performance (%)							
		1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Small Cap	2,403,022,348	5.53 (41)	-12.61 (54)	-4.49 (52)	0.80 (50)	6.30 (61)	9.82 (57)	11.36 (52)	7/1/1988
Small Cap Composite - Net		5.37 (42)	-13.05 (56)	-5.07 (53)	0.26 (53)	5.72 (66)	9.23 (66)		
Russell 2000 Index		4.93 (49)	-8.69 (44)	0.39 (43)	1.77 (45)	8.00 (47)	9.85 (56)	8.95 (93)	
Small Cap Growth	837,324,603	10.49 (28)	4.08 (56)	16.79 (53)	10.79 (48)	11.18 (67)	12.87 (51)	12.88 (4)	7/1/1988
Small Cap Growth - Net		10.36 (29)	3.30 (60)	15.80 (55)	10.13 (51)	10.53 (72)	12.24 (62)		
Russell 2000 Growth Index		7.16 (60)	3.88 (57)	15.71 (55)	8.18 (64)	11.42 (64)	12.34 (61)	8.18 (99)	
Frontier Capital	665,299,875	11.44 (18)	7.70 (49)	21.01 (42)	15.63 (29)	14.85 (33)	13.61 (38)	13.28 (2)	8/1/1988
Frontier Capital - Net		11.31 (18)	6.69 (52)	19.73 (45)	14.73 (32)	14.05 (39)	12.89 (51)		
Russell 2000 Growth Index		7.16 (60)	3.88 (57)	15.71 (55)	8.18 (64)	11.42 (64)	12.34 (61)	8.27 (99)	
FIAM Small Cap	172,024,728	6.94 (63)	-7.91 (89)	2.90 (87)	4.86 (79)	7.29 (92)	11.84 (70)	12.94 (4)	8/1/1988
FIAM Small Cap - Net		6.83 (64)	-8.02 (90)	2.77 (88)	4.53 (81)	6.83 (95)	11.31 (77)		
Russell 2000 Index		4.93 (84)	-8.69 (91)	0.39 (91)	1.77 (93)	8.00 (87)	9.85 (91)	9.01 (86)	
Russell 2000 Growth Index		7.16 (60)	3.88 (57)	15.71 (55)	8.18 (64)	11.42 (64)	12.34 (61)	8.27 (99)	
Small Cap Value	1,259,986,862	3.05 (38)	-19.88 (31)	-13.58 (30)	-4.21 (24)	4.47 (20)	8.41 (8)	10.64 (1)	9/1/1989
Small Cap Value - Net		2.86 (40)	-20.22 (33)	-14.03 (34)	-4.70 (29)	3.92 (27)	7.89 (17)		
Russell 2000 Value Index		2.56 (46)	-21.54 (50)	-14.88 (45)	-5.13 (37)	4.11 (26)	7.09 (35)	8.93 (57)	
Channing	209,645,374	3.55 (32)	-13.46 (7)	-6.58 (8)	-2.31 (13)	5.34 (12)		7.77 (3)	7/1/2011
Channing - Net		3.43 (32)	-13.79 (8)	-7.05 (8)	-2.80 (16)	4.82 (16)		7.19 (8)	
Russell 2000 Value Index		2.56 (46)	-21.54 (50)	-14.88 (45)	-5.13 (37)	4.11 (26)		5.62 (34)	
DFA Small Cap Val.	466,279,900	3.61 (31)	-22.65 (67)	-15.66 (55)	-6.82 (73)	2.25 (56)	7.67 (21)	10.28 (1)	2/1/1996
DFA Small Cap Val. - Net		3.49 (32)	-22.93 (70)	-16.07 (58)	-7.28 (79)	1.73 (69)	7.15 (34)		
Russell 2000 Value Index		2.56 (46)	-21.54 (50)	-14.88 (45)	-5.13 (37)	4.11 (26)	7.09 (35)	8.17 (66)	
Inv. Couns. Maryland	584,061,589	2.43 (49)	-19.73 (31)	-14.20 (36)	-2.61 (14)	6.63 (6)	9.31 (2)	10.00 (6)	5/1/1999
Inv. Couns. Maryland - Net		2.16 (53)	-20.11 (32)	-14.69 (41)	-3.13 (17)	6.04 (7)	8.80 (4)		
Russell 2000 Value Index		2.56 (46)	-21.54 (50)	-14.88 (45)	-5.13 (37)	4.11 (26)	7.09 (35)	7.54 (71)	

* The LCG Blended Benchmark is currently the Russell 1000 Growth Index. Returns prior to January 1, 2006, reflect those of the S&P 500/Citigroup Growth Index.

** The LCV Blended Benchmark is currently the Russell 1000 Value Index. Returns prior to January 1, 2006, reflect those of the S&P 500/Citigroup Value Index.

*** Public Real Assets benchmark is 1/3 Dow Jones Global Infrastructure Composite Index + 2/3 FTSE Global Core Infrastructure 50/50 Net Tax Index.

Wilshire Consulting
Performance



Domestic Equity
Periods Ended September 30, 2020

	Market Value \$	Performance (%)							
		1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Micro Cap	305,710,884	3.25 (67)	-17.18 (69)	-9.48 (67)	-3.37 (76)	3.22 (89)	7.95 (84)	10.64 (89)	7/1/1984
Micro Cap - Net		3.12 (69)	-17.49 (70)	-9.93 (68)	-3.86 (78)	2.62 (92)	7.27 (91)		
Russell Microcap Index		3.69 (62)	-7.94 (40)	4.44 (33)	-0.09 (56)	6.72 (58)	9.50 (63)		
DFA Micro Cap (9-10)	305,710,884	3.25 (67)	-17.18 (69)	-9.48 (67)	-2.60 (71)	5.97 (63)	9.76 (58)	10.23 (62)	8/1/1987
DFA Micro Cap (9-10) - Net		3.12 (69)	-17.49 (70)	-9.93 (68)	-3.08 (74)	5.45 (68)	9.23 (66)		
Russell 2000 Index		4.93 (49)	-8.69 (44)	0.39 (43)	1.77 (45)	8.00 (47)	9.85 (56)	8.38 (88)	
Russell 2000 Value Index		2.56 (75)	-21.54 (86)	-14.88 (83)	-5.13 (88)	4.11 (80)	7.09 (94)	8.81 (86)	
Public Real Assets	630,639,281	1.29	-11.18	-8.46	3.54			3.46	8/1/2017
Public Real Assets- Net		1.19	-11.46	-8.84	3.09			3.02	
Public Real Assets Benchmark***		0.51	-13.21	-10.05	1.41			1.30	
Brookfield	145,053,167	-1.46	-17.71	-15.24	-0.88			-0.96	8/1/2017
Brookfield - Net		-1.59	-18.05	-15.70	-1.40			-1.45	
Dow Jones Brookfield Global Infrastructure Composi		-2.48	-16.51	-13.57	-1.05			-1.19	
Cohen & Steers	485,586,113	2.15	-8.45	-5.61	5.50			5.43	8/1/2017
Cohen & Steers- Net		2.05	-8.71	-5.98	5.07			5.02	
FTSE GLOBAL CORE INFRASTRUCTURE 50/50 INDEX (Net)		2.02	-11.55	-8.29	2.63			2.54	

* The LCG Blended Benchmark is currently the Russell 1000 Growth Index. Returns prior to January 1, 2006, reflect those of the S&P 500/Citigroup Growth Index.

** The LCV Blended Benchmark is currently the Russell 1000 Value Index. Returns prior to January 1, 2006, reflect those of the S&P 500/Citigroup Value Index.

*** Public Real Assets benchmark is 1/3 Dow Jones Global Infrastructure Composite Index + 2/3 FTSE Global Core Infrastructure 50/50 Net Tax Index.



International Equity

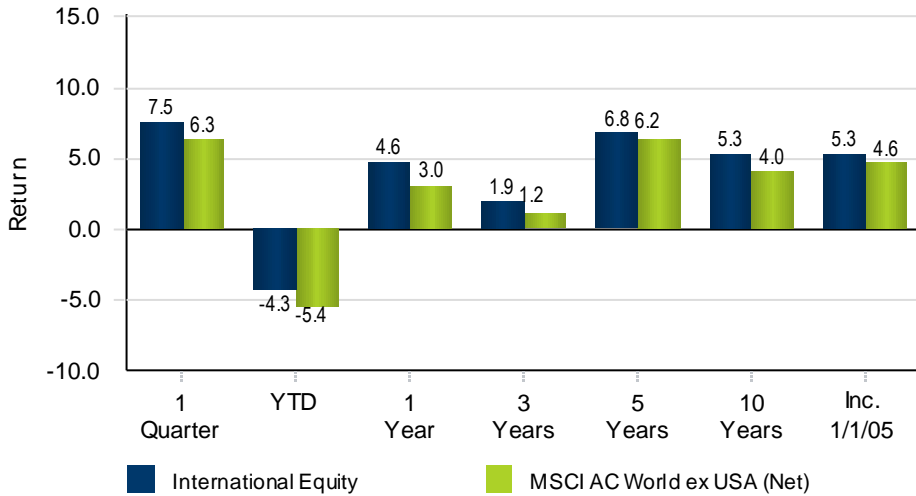
Composite Performance Summary



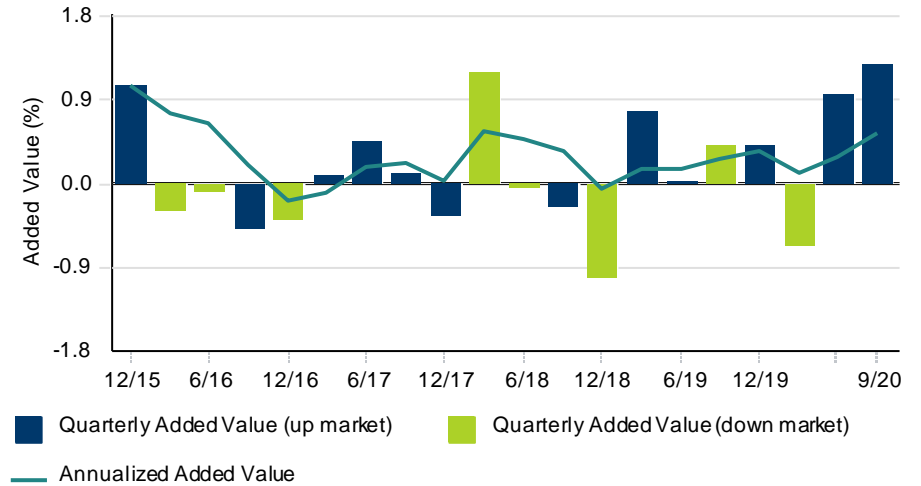
International Equity

Periods Ended September 30, 2020

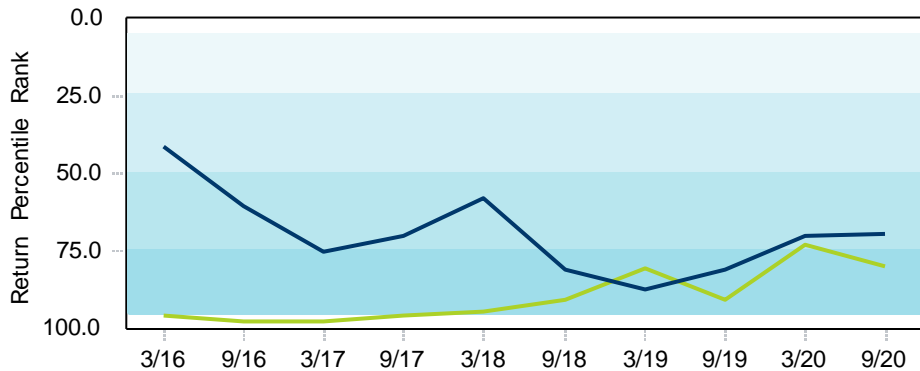
Comparative Performance



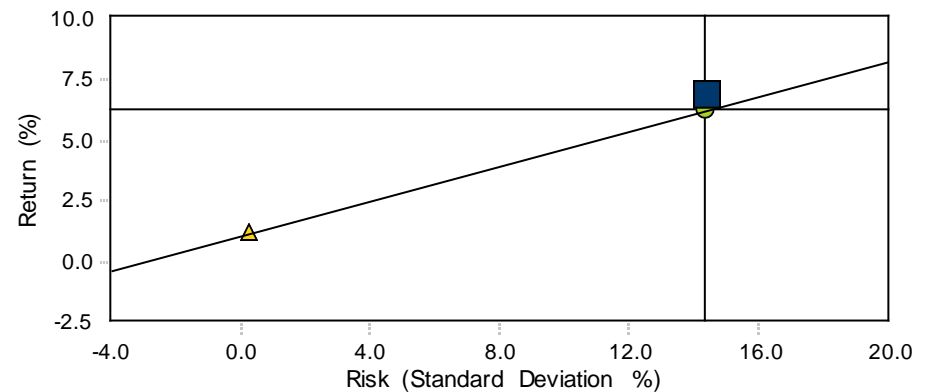
Added Value History



Rolling Percentile Rank: All Public Plans > \$1B-Intl. Equity Segment



Risk and Return 10/1/15 - 09/30/20



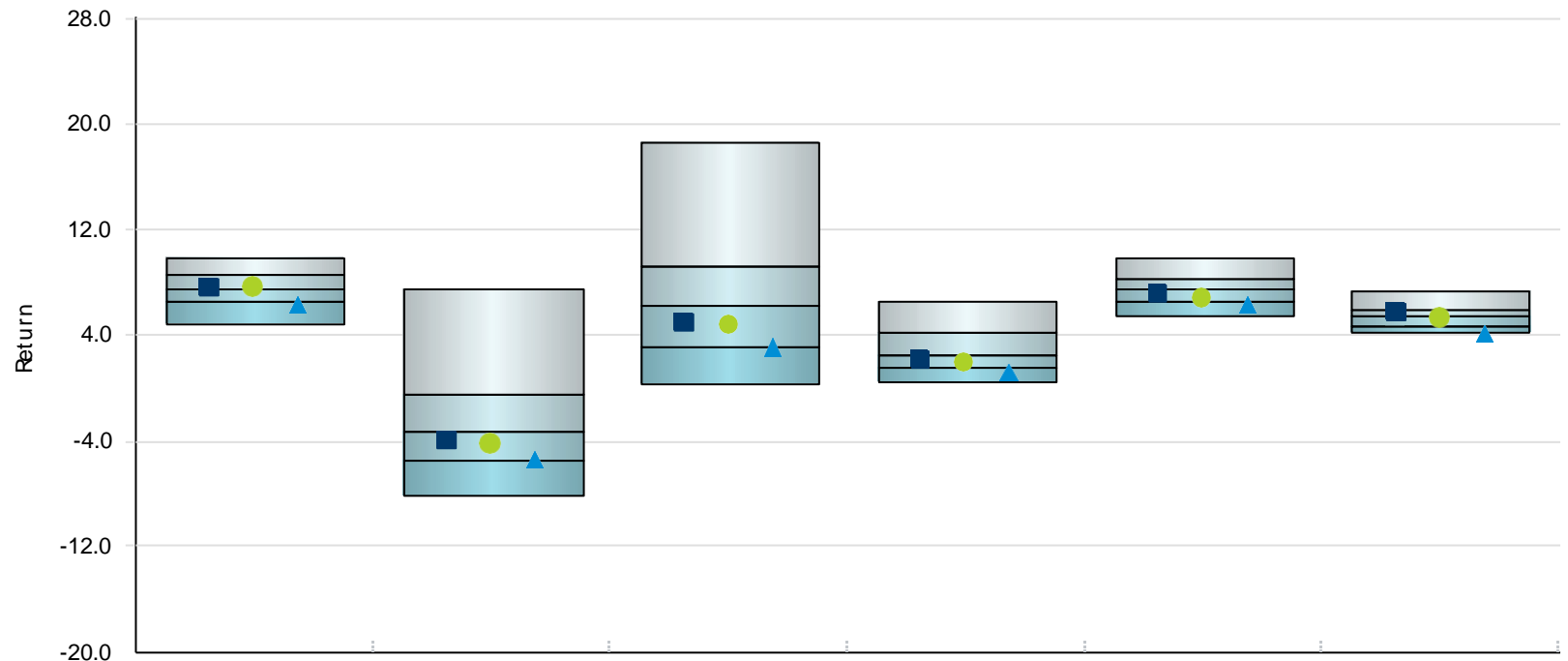
	T total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
International Equity	10	0 (0%)	1 (10%)	6 (60%)	3 (30%)
Benchmark	10	0 (0%)	0 (0%)	1 (10%)	9 (90%)

- International Equity
- MSCI AC World ex USA (Net)
- 90 Day US Treasury Bill

Plan Sponsor Peer Group Analysis

International Equity vs All Public Plans > \$1B-Intl. Equity Segment(Gross)

Periods Ended September 30, 2020



	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ International Equity	7.62 (49)	-4.06 (53)	4.98 (59)	2.22 (61)	7.12 (58)	5.65 (45)
● International Equity - Net	7.54 (56)	-4.32 (59)	4.62 (60)	1.88 (69)	6.76 (69)	5.31 (54)
▲ MSCI AC World ex USA (Net)	6.25 (85)	-5.44 (75)	3.00 (79)	1.16 (80)	6.23 (85)	4.00 (99)
5th Percentile	9.88	7.44	18.64	6.50	9.88	7.36
1st Quartile	8.55	-0.46	9.28	4.18	8.38	5.93
Median	7.61	-3.34	6.25	2.49	7.55	5.48
3rd Quartile	6.51	-5.44	3.21	1.55	6.52	4.64
95th Percentile	4.80	-8.16	0.31	0.38	5.60	4.25
Population	56	54	54	51	49	31

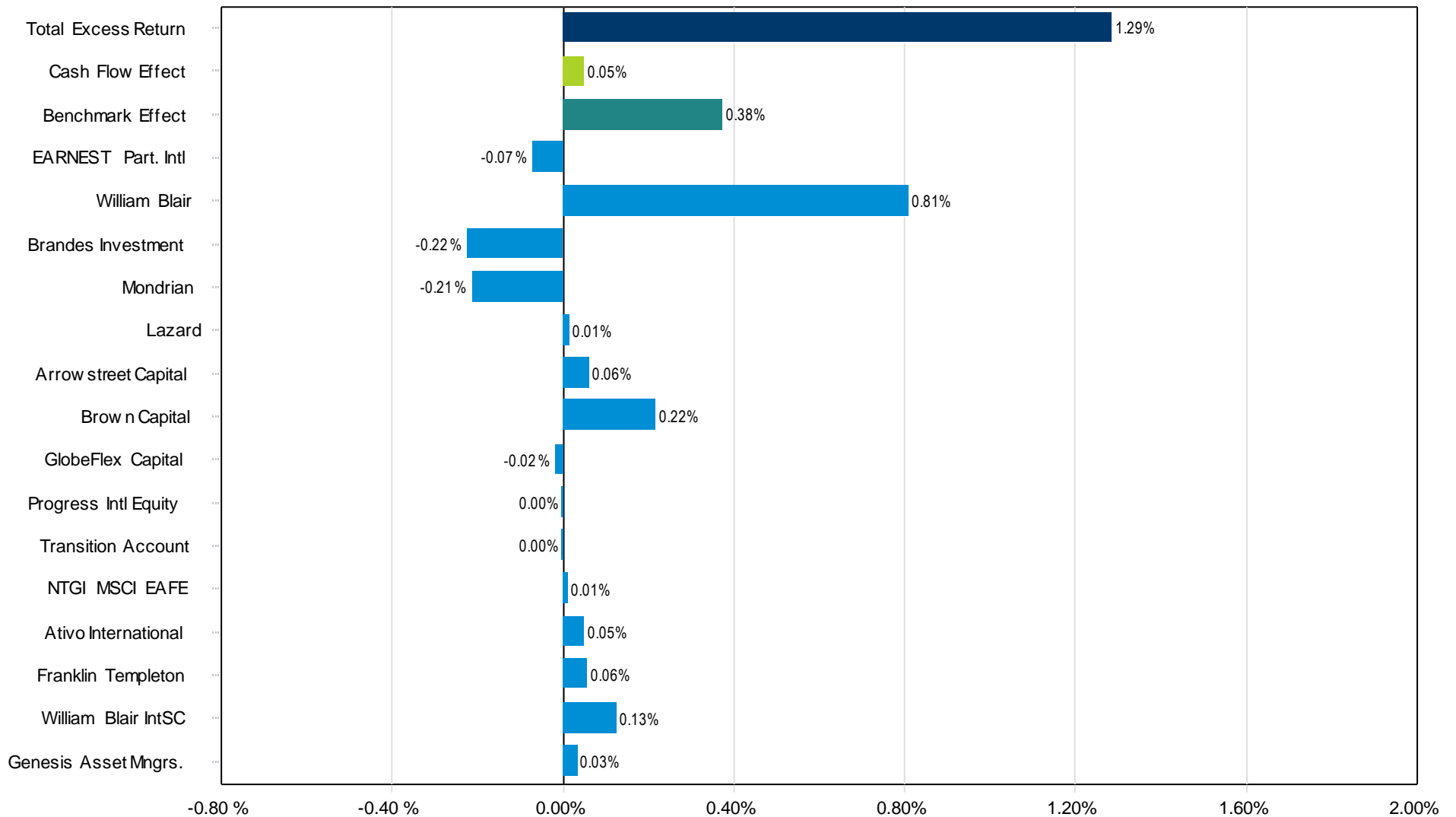
Asset Class Attribution

International Equity

Periods Ended 1 Quarter Ending September 30, 2020



1 Quarter



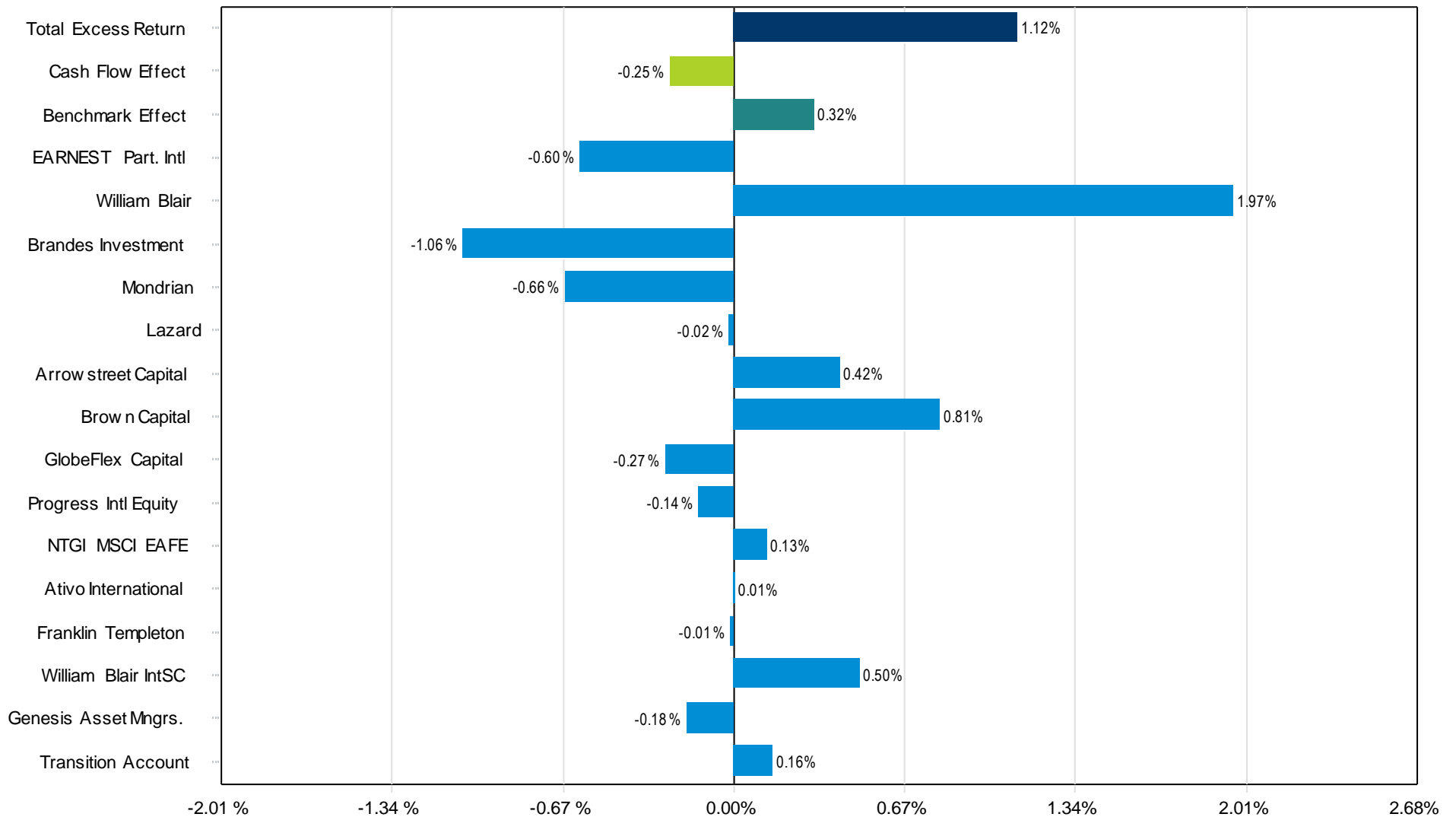
Asset Class Attribution

International Equity

Periods Ended Year To Date Ending September 30, 2020



Year To Date



Wilshire Consulting
Performance



International Equity

Periods Ended September 30, 2020

	Market Value \$	Performance (%)							
		1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
International Equity	8,186,708,910	7.62 (49)	-4.06 (53)	4.98 (59)	2.22 (61)	7.12 (58)	5.65 (45)	7.56	9/1/1986
International Equity - Net		7.54 (56)	-4.32 (59)	4.62 (60)	1.88 (69)	6.76 (69)	5.31 (54)		
MSCI AC World ex USA (Net)		6.25 (85)	-5.44 (75)	3.00 (79)	1.16 (80)	6.23 (85)	4.00 (99)		
Intl Large Cap Equity	6,288,300,382	6.66 (58)	-5.13 (65)	3.43 (62)	1.62 (64)	6.57 (55)	5.54 (60)	7.51 (100)	9/1/1986
Intl LargeCap Equity - Net		6.60 (59)	-5.31 (66)	3.16 (63)	1.36 (65)	6.29 (57)	5.26 (67)		
MSCI AC World ex USA (Net)		6.25 (63)	-5.44 (66)	3.00 (63)	1.16 (68)	6.23 (57)	4.00 (83)		
Intl Large Cap Grwth	1,389,068,145	10.80 (32)	3.34 (63)	13.96 (58)	4.67 (73)	8.97 (58)	6.39 (75)	8.43 (59)	9/1/2002
Intl Large Cap Grwth - Net		10.72 (32)	3.11 (63)	13.62 (59)	4.41 (74)	8.69 (62)	6.05 (80)		
MSCI AC World ex USA (Net)		6.25 (91)	-5.44 (93)	3.00 (90)	1.16 (89)	6.23 (84)	4.00 (100)	6.85 (100)	
EARNEST Part. Intl	427,644,407	5.00 (95)	-15.10 (100)	-7.24 (100)	-3.30 (100)	4.73 (96)	3.26 (100)	7.59 (56)	10/1/2004
EARNEST Part. Intl - Net		4.95 (95)	-15.24 (100)	-7.44 (100)	-3.47 (100)	4.54 (96)	2.98 (100)		
MSCI AC World ex USA (Net)		6.25 (91)	-5.44 (93)	3.00 (90)	1.16 (89)	6.23 (84)	4.00 (100)	5.49 (100)	
MSCI AC World ex USA Growth (Net)		10.16 (40)	7.27 (47)	17.54 (47)	7.33 (49)	10.16 (47)	6.38 (75)	7.05 (69)	
William Blair	961,423,737	13.59 (8)	14.80 (15)	27.50 (13)	9.71 (27)	11.35 (36)	8.59 (33)	10.33 (29)	10/1/2002
William Blair - Net		13.51 (8)	14.50 (15)	27.07 (14)	9.33 (33)	10.95 (41)	8.20 (46)		
MSCI AC World ex USA (Net)		6.25 (91)	-5.44 (93)	3.00 (90)	1.16 (89)	6.23 (84)	4.00 (100)	7.55 (100)	
MSCI AC World ex USA Growth (Net)		10.16 (40)	7.27 (47)	17.54 (47)	7.33 (49)	10.16 (47)	6.38 (75)	8.49 (76)	
Intl Large Cap Val.	1,134,626,374	3.43 (66)	-16.14 (80)	-8.73 (87)	-2.79 (60)	3.23 (69)	3.33 (80)	7.74 (39)	10/1/1995
Intl Large Cap Val. - Net		3.36 (67)	-16.33 (81)	-9.01 (88)	-3.10 (65)	2.88 (75)	2.98 (87)		
MSCI AC World ex USA (Net)		6.25 (31)	-5.44 (30)	3.00 (29)	1.16 (32)	6.23 (25)	4.00 (68)		
Brandes Investment	522,640,473	2.99 (77)	-19.21 (92)	-12.47 (96)	-4.44 (83)	2.19 (88)	3.10 (85)	7.69 (40)	1/1/1996
Brandes Investment - Net		2.93 (78)	-19.34 (92)	-12.66 (96)	-4.64 (86)	1.96 (92)	2.86 (88)		
MSCI AC World ex USA (Net)		6.25 (31)	-5.44 (30)	3.00 (29)	1.16 (32)	6.23 (25)	4.00 (68)		
MSCI AC World ex USA Value		2.43 (86)	-17.19 (84)	-10.32 (91)	-4.51 (84)	2.75 (76)	2.08 (96)		

* Custom benchmark is calculated as a weighted average of each funds respective benchmark until 12/2017. After 12/2017 the benchmark is MSCI ACWI ex US - Net.

** Genesis is NOF NAV commingled fund.

Wilshire Consulting
Performance



International Equity
Periods Ended September 30, 2020

	Market Value \$	Performance (%)							
		1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Mondrian	496,390,083	3.03 (77)	-14.76 (70)	-6.48 (69)	-1.83 (49)	3.86 (58)		3.61 (77)	4/1/2012
Mondrian - Net		2.93 (78)	-15.03 (72)	-6.86 (75)	-2.28 (56)	3.37 (68)		3.12 (85)	
MSCI AC World ex USA (Net)		6.25 (31)	-5.44 (31)	3.00 (30)	1.16 (33)	6.23 (27)		4.38 (58)	
MSCI AC World ex USA Value		2.43 (85)	-17.19 (84)	-10.32 (92)	-4.51 (83)	2.75 (77)		2.12 (98)	
Lazard	115,595,818	7.35 (22)	-6.55 (32)	0.23 (37)	1.48 (29)	5.66 (37)		5.41 (40)	4/1/2012
Lazard - Net		7.28 (23)	-6.73 (32)	-0.02 (37)	1.22 (31)	5.31 (42)		4.91 (48)	
MSCI AC World ex USA (Net)		6.25 (31)	-5.44 (31)	3.00 (30)	1.16 (33)	6.23 (27)		4.38 (58)	
MSCI AC World ex USA Value		2.43 (85)	-17.19 (84)	-10.32 (92)	-4.51 (83)	2.75 (77)		2.12 (98)	
Intl Large Cap Active Core	1,959,943,049	7.60 (36)	-2.05 (43)	6.98 (39)	2.98 (37)	8.13 (26)	7.08 (17)	4.77 (14)	2/1/2008
Intl Large Cap Active Core - Net		7.50 (37)	-2.42 (44)	6.44 (42)	2.50 (46)	7.58 (33)	6.55 (37)		
MSCI AC World ex USA (Net)		6.25 (59)	-5.44 (59)	3.00 (58)	1.16 (63)	6.23 (56)	4.00 (98)	2.15 (93)	
Arrowstreet Capital	755,361,131	7.04 (48)	-0.43 (32)	9.35 (28)	4.28 (24)	9.24 (17)	7.54 (14)	5.16 (9)	3/1/2008
Arrowstreet Capital - Net		6.92 (50)	-0.77 (34)	8.85 (31)	3.80 (27)	8.73 (21)	7.04 (18)	4.67 (13)	
MSCI AC World ex USA (Net)		6.25 (59)	-5.44 (59)	3.00 (58)	1.16 (63)	6.23 (56)	4.00 (98)	1.94 (94)	
Brown Capital	554,706,127	10.61 (7)	12.99 (3)	21.36 (5)	9.05 (8)	9.79 (13)	8.89 (2)	8.54 (1)	10/1/2004
Brown Capital - Net		10.54 (7)	12.79 (3)	21.02 (5)	8.57 (9)	8.98 (18)	8.11 (9)		
MSCI AC World ex USA (Net)		6.25 (59)	-5.44 (59)	3.00 (58)	1.16 (63)	6.23 (56)	4.00 (98)	5.49 (89)	
GlobeFlex Capital	648,849,468	6.10 (64)	-9.10 (93)	-1.16 (91)	-1.96 (92)	5.80 (63)	5.65 (62)	4.13 (72)	3/1/2006
GlobeFlex Capital - Net		5.99 (68)	-9.41 (93)	-1.60 (92)	-2.36 (95)	5.38 (73)	5.22 (77)	3.68 (86)	
MSCI AC World ex USA (Net)		6.25 (59)	-5.44 (59)	3.00 (58)	1.16 (63)	6.23 (56)	4.00 (98)	3.45 (91)	
Progress Intl Equity*	903,533								
Progress Intl Equity - Net									
Intl Large Cap Passive Core	1,804,662,815	4.84 (85)	-6.57 (73)	0.96 (76)	1.01 (66)	5.68 (67)	5.04 (83)	3.56 (98)	2/1/2000
Intl Large Cap Passive Core - Net		4.84 (85)	-6.57 (73)	0.95 (76)	1.00 (66)	5.67 (67)	5.03 (85)		
MSCI EAFE Index (Net)		4.80 (85)	-7.09 (78)	0.49 (82)	0.62 (70)	5.26 (76)	4.62 (93)	3.17 (99)	

* Custom benchmark is calculated as a weighted average of each funds respective benchmark until 12/2017. After 12/2017 the benchmark is MSCI ACWI ex US - Net.

** Genesis is NOF NAV commingled fund.

Wilshire Consulting
Performance



International Equity
Periods Ended September 30, 2020

	Market Value \$	Performance (%)							
		1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
NTGI MSCI EAFE	1,804,662,815	4.84 (85)	-6.57 (73)	0.96 (76)	1.01 (66)	5.68 (67)	5.04 (83)	3.56 (98)	2/1/2000
NTGI MSCI EAFE - Net		4.84 (85)	-6.57 (73)	0.95 (76)	1.00 (66)	5.67 (67)	5.03 (85)		
MSCI EAFE Index (Net)		4.80 (85)	-7.09 (78)	0.49 (82)	0.62 (70)	5.26 (76)	4.62 (93)	3.17 (99)	
Intl All Cap Developed	139,424,997	8.01 (47)	-6.21 (64)	1.04 (70)				4.76 (60)	2/1/2019
Intl All Cap Developed - Net		7.90 (49)	-6.55 (65)	0.54 (72)				4.32 (63)	
MSCI EAFE + Canada (Net)		4.92 (77)	-7.13 (70)	0.16 (74)				3.66 (68)	
Ativo International	139,424,997	8.01 (47)	-6.21 (64)	1.04 (70)				4.76 (60)	2/1/2019
Ativo International - Net		7.90 (49)	-6.55 (65)	0.54 (72)				4.32 (63)	
MSCI EAFE + Canada (Net)		4.92 (77)	-7.13 (70)	0.16 (74)				3.66 (68)	
Intl Small Cap Eqty	548,486,170	13.61 (14)	5.26 (26)	18.64 (26)	4.75 (38)	8.79 (45)	8.32 (56)	5.36 (96)	12/1/2005
Intl Small Cap Eqty - Net		13.42 (16)	4.66 (27)	17.75 (27)	3.96 (40)	7.98 (49)	7.53 (65)		
MSCI AC World ex USA Small Cap (Net)		10.50 (45)	-3.64 (60)	6.97 (56)	0.93 (56)	6.80 (62)	5.31 (94)	5.73 (94)	
Custom Benchmark (Intl Small Cap)		10.50 (45)	-3.64 (60)	6.97 (56)	0.93 (56)	6.80 (62)	5.62 (91)	5.05 (99)	
Franklin Templeton	199,320,049	13.15 (19)	-3.63 (59)	5.83 (64)	1.47 (55)	6.71 (62)		5.78 (76)	8/1/2011
Franklin Templeton - Net		12.96 (19)	-4.17 (61)	5.05 (68)	0.72 (58)	5.93 (75)		5.02 (84)	
MSCI AC World ex USA Small Cap (Net)		10.50 (45)	-3.64 (60)	6.97 (56)	0.93 (56)	6.80 (62)		4.37 (94)	
William Blair IntSC	349,166,120	13.87 (12)	11.11 (16)	27.45 (14)	6.78 (25)	10.07 (32)	9.22 (35)	10.21 (37)	9/1/2010
William Blair IntSC - Net		13.68 (14)	10.47 (19)	26.48 (15)	5.97 (31)	9.23 (43)	8.39 (55)	9.38 (56)	
MSCI AC World ex USA Small Cap (Net)		10.50 (45)	-3.64 (60)	6.97 (56)	0.93 (56)	6.80 (62)	5.31 (94)	6.42 (93)	
Custom Benchmark (Intl Small Cap)		10.50 (45)	-3.64 (60)	6.97 (56)	0.93 (56)	6.80 (62)	5.62 (91)	6.71 (91)	
Emerging Mkt Equity	1,210,497,361	10.11 (48)	-2.03 (63)	8.52 (62)	5.09 (33)	10.57 (40)	4.64 (40)	8.92 (42)	2/1/1992
Emerging Mkt Equity - Net		9.96 (49)	-2.51 (66)	7.87 (64)	4.48 (37)	9.91 (45)	4.03 (52)		
MSCI Emerging Markets Index		9.70 (52)	-0.91 (55)	10.91 (53)	2.79 (54)	9.37 (49)	2.87 (68)	6.97 (99)	
Genesis Asset Mngrs.**	1,210,497,361	10.11 (48)	-2.03 (63)	8.52 (62)	5.09 (33)	10.57 (40)	4.64 (40)	10.79 (20)	5/1/2004
Genesis Asset Mngrs. - Net		9.96 (49)	-2.51 (66)	7.87 (64)	4.48 (37)	9.91 (45)	4.03 (52)		
MSCI Emerging Markets Index		9.70 (52)	-0.91 (55)	10.91 (53)	2.79 (54)	9.37 (49)	2.87 (68)	8.56 (73)	

* Custom benchmark is calculated as a weighted average of each funds respective benchmark until 12/2017. After 12/2017 the benchmark is MSCI ACWI ex US - Net.

** Genesis is NOF NAV commingled fund.



Fixed Income

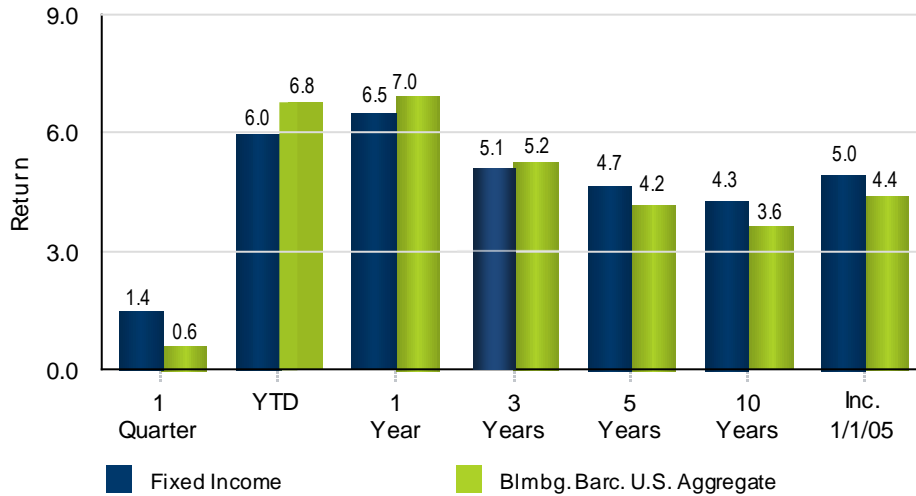
Composite Performance Summary

Fixed Income

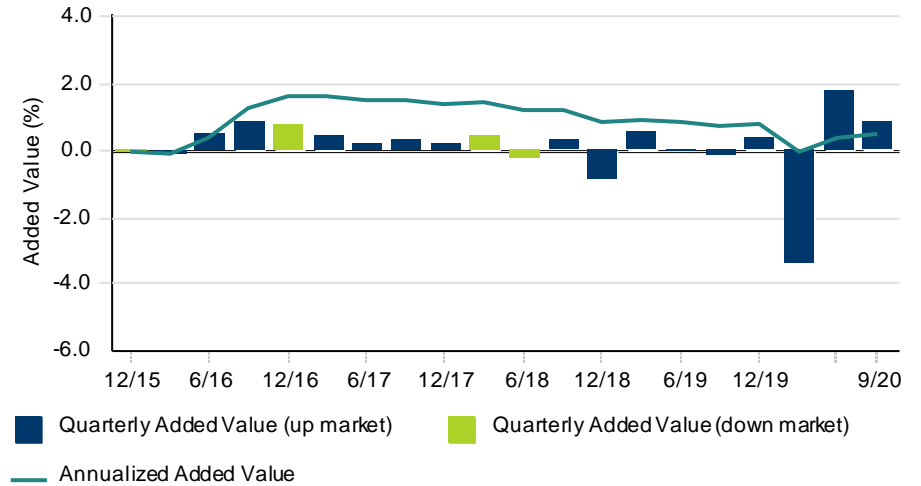
Periods Ended September 30, 2020



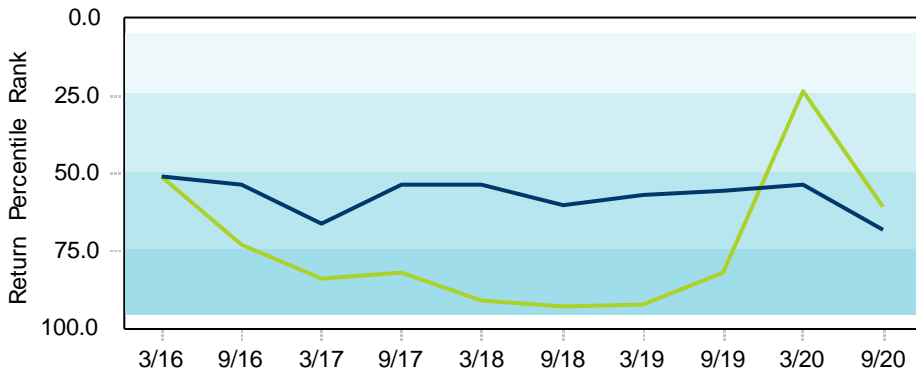
Comparative Performance



Added Value History

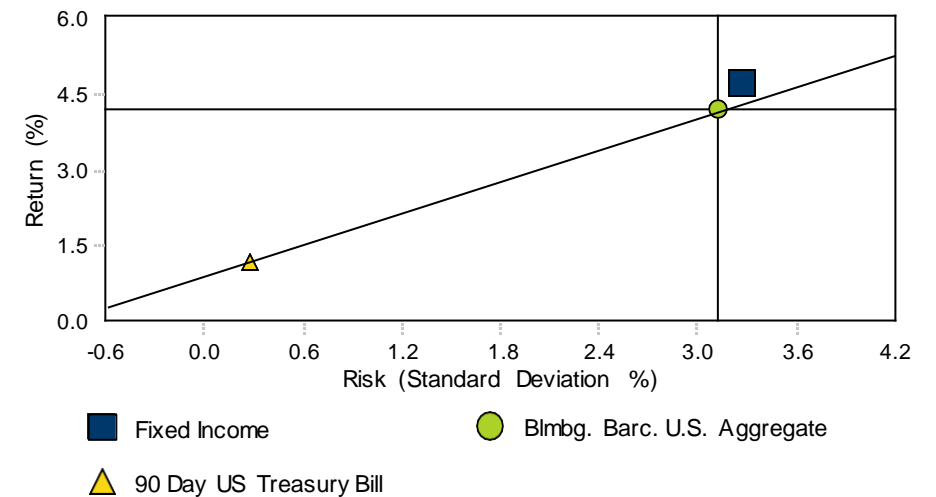


Rolling Percentile Rank: All Public Plans > \$1B-US Fixed Income Segment



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Fixed Income	10	0 (0%)	0 (0%)	10 (100%)	0 (0%)
Benchmark	10	1 (10%)	0 (0%)	3 (30%)	6 (60%)

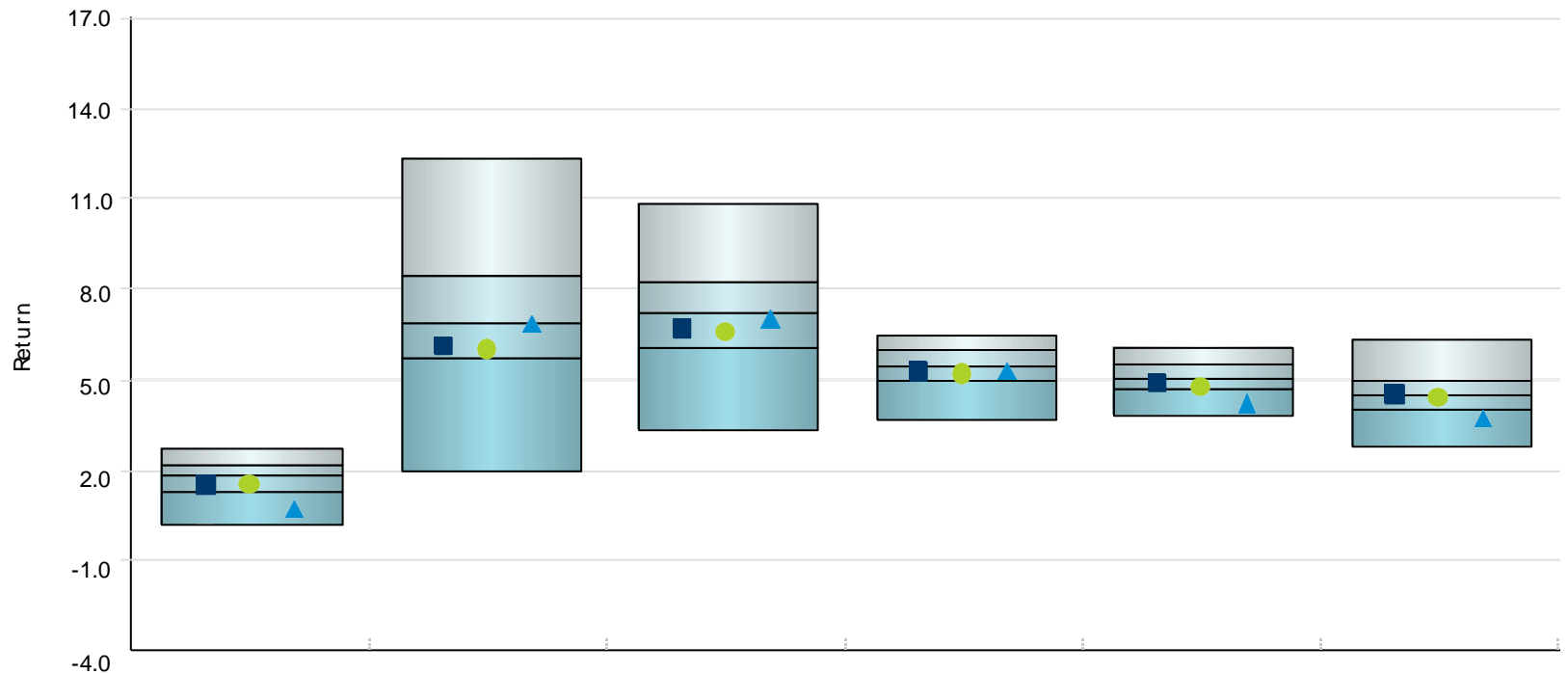
Risk and Return 10/1/15 - 09/30/20



Plan Sponsor Peer Group Analysis

Fixed Income vs All Public Plans > \$1B-US Fixed Income Segment(Gross)

Periods Ended September 30, 2020



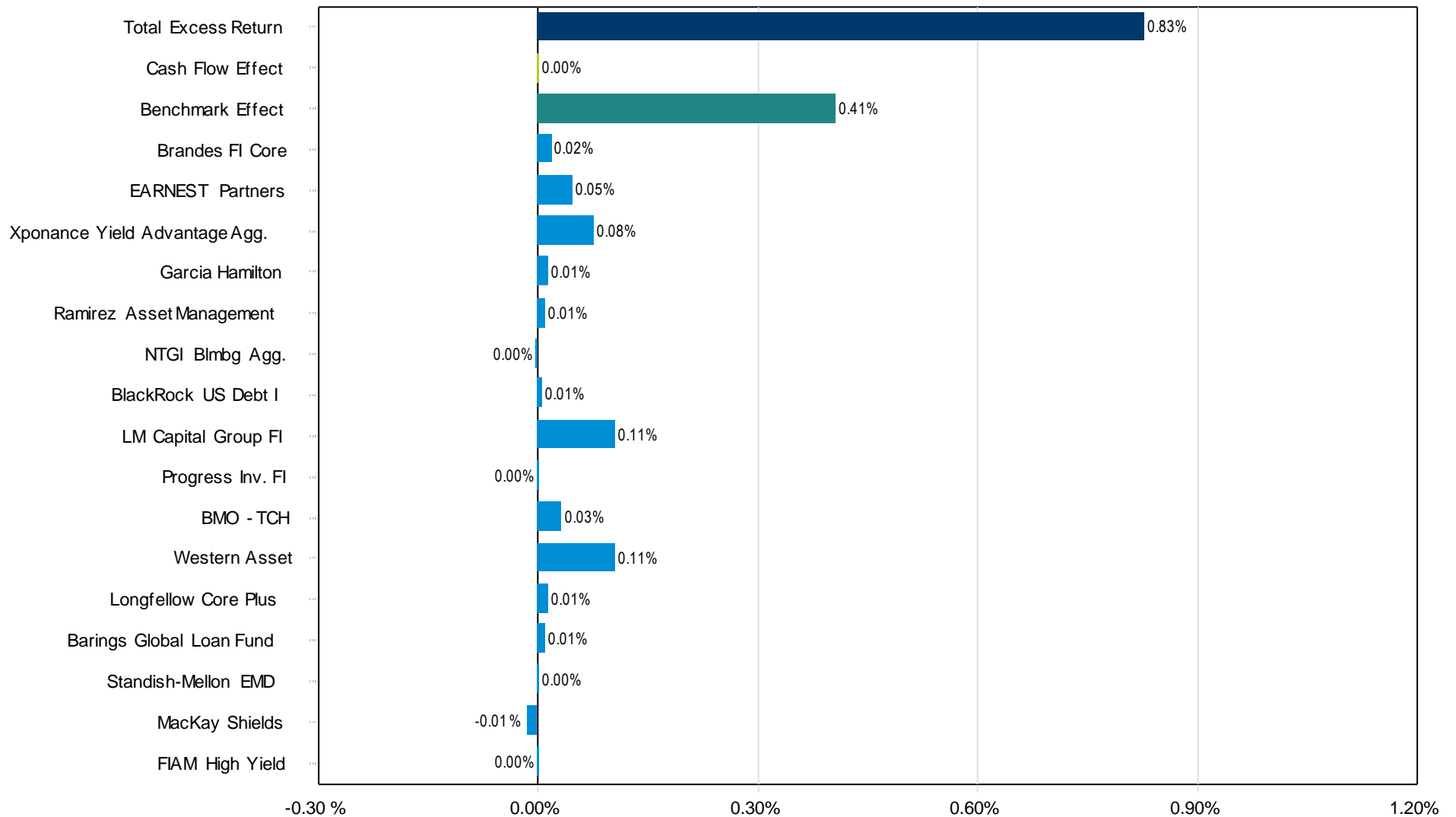
	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ Fixed Income	1.48 (67)	6.06 (70)	6.65 (69)	5.24 (61)	4.84 (63)	4.47 (50)
● Fixed Income - Net	1.45 (67)	5.97 (72)	6.52 (71)	5.10 (68)	4.69 (74)	4.32 (60)
▲ Blmbg. Barc. U.S. Aggregate	0.62 (93)	6.79 (53)	6.98 (64)	5.24 (61)	4.18 (89)	3.64 (90)
5th Percentile	2.69	12.40	10.86	6.48	6.11	6.36
1st Quartile	2.16	8.47	8.28	6.02	5.49	4.98
Median	1.75	6.83	7.21	5.44	5.05	4.46
3rd Quartile	1.25	5.69	6.09	4.91	4.67	4.06
95th Percentile	0.19	2.00	3.33	3.62	3.78	2.75
Population	57	54	53	50	48	32

Asset Class Attribution

Fixed Income

Periods Ended 1 Quarter Ending September 30, 2020

1 Quarter

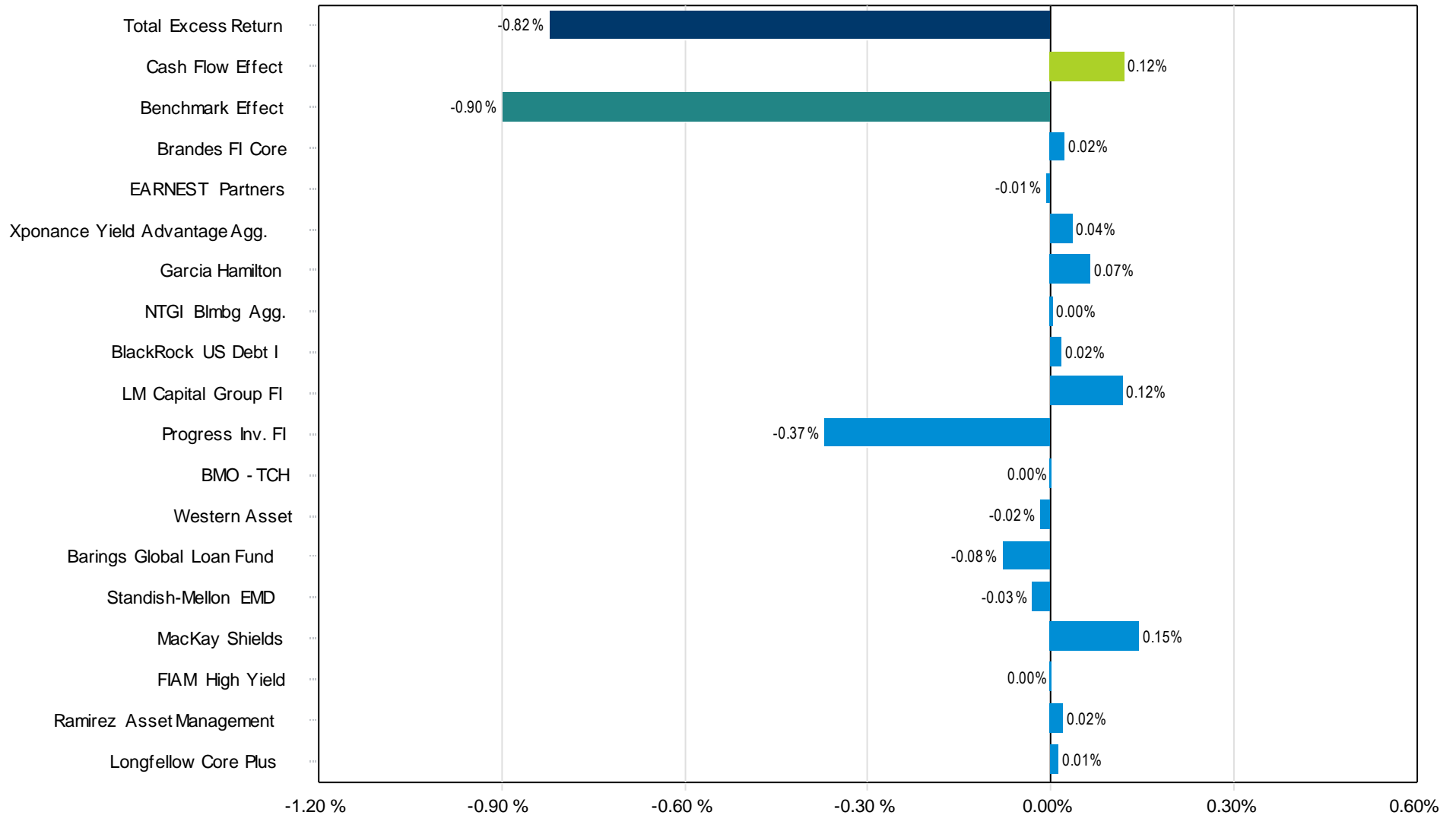


Asset Class Attribution

Fixed Income

Periods Ended Year To Date Ending September 30, 2020

Year To Date



Fixed Income

Periods Ended September 30, 2020

	Market Value \$	Performance (%)							Inception Date
		1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	
Fixed Income	12,086,120,629	1.48 (67)	6.06 (70)	6.65 (69)	5.24 (61)	4.84 (63)	4.47 (50)	8.19	1/1/1982
Fixed Income - Net		1.45 (67)	5.97 (72)	6.52 (71)	5.10 (68)	4.69 (74)	4.32 (60)		
Blmbg. Barc. U.S. Aggregate		0.62 (93)	6.79 (53)	6.98 (64)	5.24 (61)	4.18 (89)	3.64 (90)	7.70	
Active Fixed Core	3,800,625,773	1.17 (43)	7.32 (55)	7.14 (67)	5.44 (72)	4.49 (71)	4.20 (48)	4.78 (92)	4/1/2001
Active Fixed Core - Net		1.15 (45)	7.24 (58)	7.03 (76)	5.34 (81)	4.36 (80)	4.04 (64)		
Blmbg. Barc. U.S. Aggregate		0.62 (86)	6.79 (75)	6.98 (79)	5.24 (93)	4.18 (94)	3.64 (94)	4.76 (95)	
Brandes FI Core	384,746,925	1.16 (44)	7.60 (44)	7.51 (55)	5.03 (97)			3.99 (97)	3/1/2016
Brandes FI Core - Net		1.16 (44)	7.60 (44)	7.51 (55)	5.03 (97)			3.99 (97)	
Blmbg. Barc. U.S. Aggregate		0.62 (86)	6.79 (75)	6.98 (79)	5.24 (93)			4.22 (92)	
EARNEST Partners	1,047,701,590	1.19 (41)	6.78 (76)	6.61 (87)	5.41 (74)	4.31 (83)	4.19 (49)	4.82 (57)	5/1/2005
EARNEST Partners - Net		1.15 (44)	6.68 (78)	6.47 (89)	5.27 (91)	4.15 (94)	4.00 (68)	4.62 (82)	
Blmbg. Barc. U.S. Aggregate		0.62 (86)	6.79 (75)	6.98 (79)	5.24 (93)	4.18 (94)	3.64 (94)	4.42 (92)	
Xponance Yield Advantage Agg.	1,117,920,778	1.49 (20)	7.21 (59)	6.99 (79)	5.17 (96)	4.58 (63)	4.13 (55)	4.62 (76)	6/1/2005
Xponance Yield Advantage Agg. - Net		1.46 (21)	7.10 (60)	6.86 (81)	5.03 (97)	4.43 (76)	3.97 (71)	4.44 (87)	
Blmbg. Barc. U.S. Aggregate		0.62 (86)	6.79 (75)	6.98 (79)	5.24 (93)	4.18 (94)	3.64 (94)	4.38 (92)	
Garcia Hamilton	1,118,905,764	0.79 (74)	7.57 (45)	7.37 (57)	5.70 (49)	4.53 (66)		4.38 (53)	6/1/2015
Garcia Hamilton - Net		0.77 (75)	7.51 (49)	7.28 (60)	5.61 (55)	4.44 (76)		4.29 (63)	
Blmbg. Barc. U.S. Aggregate		0.62 (86)	6.79 (75)	6.98 (79)	5.24 (93)	4.18 (94)		3.94 (94)	
Ramirez Asset Management	131,350,717	1.75 (10)						4.95 (11)	5/1/2020
Ramirez Asset Management - Net		1.72 (10)						4.91 (11)	
Blmbg. Barc. U.S. Aggregate		0.62 (86)						1.72 (90)	
Pass. Core Fixed Income	3,787,148,175	0.63 (85)	6.88 (71)	7.06 (74)	5.31 (85)	4.24 (86)	3.68 (90)	6.01 (96)	1/1/1990
Pass. Core Fixed Income - Net		0.63 (85)	6.87 (71)	7.05 (75)	5.30 (86)	4.23 (87)	3.68 (90)		
Blmbg. Barc. U.S. Aggregate		0.62 (86)	6.79 (75)	6.98 (79)	5.24 (93)	4.18 (94)	3.64 (94)	5.99 (97)	

Taplin, Canida, Habacht switched from core to core plus effective 10/01/2010.

* Custom Benchmark is Credit Suisse US Leveraged Loan Index and the Credit Suisse Western European Leveraged Loan Index, weighted by the portfolio's market value to each sector.

** Custom Benchmark is 50% JPM GBI-EM Index, 25% JPM EMBI Global Index and 25% JPM Corporate EMBI Diversified Index.

	Market Value \$	Performance (%)							
		1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
BlackRock US Debt I	1,854,376,292	0.66 (83)	6.92 (68)	7.12 (68)	5.34 (81)	4.28 (84)		4.10 (81)	10/1/2013
BlackRock US Debt I - Net		0.66 (83)	6.92 (68)	7.11 (68)	5.33 (82)	4.28 (85)		4.09 (81)	
Blmbg. Barc. U.S. Aggregate		0.62 (86)	6.79 (75)	6.98 (79)	5.24 (93)	4.18 (94)		3.97 (94)	
NTGI Blmbg Agg.	1,932,771,883	0.60 (89)	6.83 (74)	7.01 (79)	5.28 (89)	4.20 (92)	3.66 (91)	6.06 (96)	2/1/1990
NTGI Blmbg Agg. - Net		0.60 (90)	6.83 (74)	7.00 (79)	5.27 (91)	4.19 (93)	3.66 (92)		
Blmbg. Barc. U.S. Aggregate		0.62 (86)	6.79 (75)	6.98 (79)	5.24 (93)	4.18 (94)	3.64 (94)	6.05 (96)	
Core Plus Fixed Income	2,954,042,528	1.62 (57)	7.27 (45)	8.02 (34)	5.68 (53)	5.14 (44)	4.65 (49)	8.09 (100)	1/1/1982
Core Plus Fixed Income - Net		1.59 (59)	7.12 (48)	7.82 (40)	5.48 (62)	4.95 (58)	4.47 (62)		
Blmbg. Barc. U.S. Aggregate		0.62 (100)	6.79 (52)	6.98 (64)	5.24 (75)	4.18 (91)	3.64 (95)	7.70 (100)	
LM Capital Group FI	974,155,367	2.00 (27)	8.35 (9)	8.93 (7)	5.62 (58)	4.92 (60)	4.42 (68)	5.19 (60)	5/1/2005
LM Capital Group FI - Net		1.96 (30)	8.23 (11)	8.76 (10)	5.45 (64)	4.75 (71)	4.25 (78)	5.02 (72)	
Blmbg. Barc. U.S. Aggregate		0.62 (100)	6.79 (52)	6.98 (64)	5.24 (75)	4.18 (91)	3.64 (95)	4.42 (97)	
Progress Inv. FI	3,700								
Progress Inv. FI - Net									
BMO - TCH	663,844,479	1.00 (87)	6.74 (52)	7.46 (49)	5.42 (67)	5.51 (28)	4.90 (33)	5.23 (59)	5/1/2005
BMO - TCH - Net		0.96 (89)	6.63 (57)	7.32 (53)	5.28 (74)	5.37 (34)	4.76 (45)	5.10 (71)	
Blmbg. Barc. U.S. Aggregate		0.62 (100)	6.79 (52)	6.98 (64)	5.24 (75)	4.18 (91)	3.64 (95)	4.42 (97)	
Western Asset	1,133,291,450	1.81 (44)	6.56 (59)	7.79 (41)	5.88 (40)	5.66 (22)	5.12 (24)	5.69 (37)	11/1/2001
Western Asset - Net		1.77 (46)	6.46 (62)	7.65 (46)	5.76 (47)	5.53 (26)	4.99 (30)		
Blmbg. Barc. U.S. Aggregate		0.62 (100)	6.79 (52)	6.98 (64)	5.24 (75)	4.18 (91)	3.64 (95)	4.52 (98)	
Longfellow Core Plus	182,747,532	1.62 (57)						3.67 (73)	5/1/2020
Longfellow Core Plus - Net		1.59 (59)						3.63 (73)	
Blmbg. Barc. U.S. Aggregate		0.62 (100)						1.72 (100)	
Bank Loans	541,293,227	4.11 (22)	-2.51 (90)	-0.64 (87)	2.59 (79)	4.15 (42)		3.69 (39)	8/1/2014
Bank Loans - Net		4.11 (22)	-2.51 (90)	-0.64 (87)	2.30 (91)	3.74 (69)		3.24 (80)	
Barings Custom Benchmark		3.88 (38)	-0.65 (45)	0.97 (47)	3.37 (40)	4.21 (35)		3.63 (40)	

Taplin, Canada, Habacht switched from core to core plus effective 10/01/2010.

* Custom Benchmark is Credit Suisse US Leveraged Loan Index and the Credit Suisse Western European Leveraged Loan Index, weighted by the portfolio's market value to each sector.

** Custom Benchmark is 50% JPM GBI-EM Index, 25% JPM EMBI Global Index and 25% JPM Corporate EMBI Diversified Index.

	Market Value \$	Performance (%)							
		1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Barings Global Loan Fund	541,293,227	4.11 (22)	-2.51 (90)	-0.64 (87)	2.59 (79)	4.15 (42)		3.69 (39)	8/1/2014
Barings Global Loan Fund - Net		4.11 (22)	-2.51 (90)	-0.64 (87)	2.30 (91)	3.74 (69)		3.24 (80)	
Barings Custom Benchmark*		3.88 (38)	-0.65 (45)	0.97 (47)	3.37 (40)	4.21 (35)		3.63 (40)	
Emerging Markets Debt	216,885,366	1.63 (79)	-3.87 (72)	0.27 (66)	1.38 (71)	5.83 (62)		2.44 (62)	8/1/2014
Emerging Markets Debt - Net		1.46 (85)	-4.11 (72)	-0.08 (70)	1.03 (76)	5.47 (76)		2.10 (66)	
Custom Benchmark (EMD)		1.44 (85)	-2.38 (59)	1.17 (57)	2.23 (63)	5.67 (70)		2.11 (66)	
Standish-Mellon EMD	216,885,366	1.63 (79)	-3.87 (72)	0.27 (66)	1.38 (71)	5.83 (62)		2.44 (62)	8/1/2014
Standish EM MRK - Net		1.46 (85)	-4.11 (72)	-0.08 (70)	1.03 (76)	5.47 (76)		2.10 (66)	
Custom Benchmark**		1.44 (85)	-2.38 (59)	1.17 (57)	2.23 (63)	5.67 (70)		2.11 (66)	
High Yield	786,125,560	4.63 (55)	2.58 (11)	5.46 (8)	5.56 (6)	7.47 (6)	7.10 (13)	9.43 (1)	4/1/1986
High Yield - Net		4.47 (64)	2.33 (12)	5.03 (10)	5.21 (8)	7.11 (11)	6.72 (31)		
ICE BofAML US High Yield, Cash Pay Index		4.72 (50)	-0.23 (62)	2.35 (63)	3.84 (65)	6.61 (38)	6.26 (64)	8.12 (53)	
MacKay Shields	786,097,017	4.65 (54)	2.59 (11)	5.47 (8)	5.57 (6)	7.68 (5)	7.27 (7)	8.68 (5)	11/1/2000
MacKay Shields - Net		4.48 (63)	2.35 (12)	5.05 (10)	5.22 (8)	7.31 (7)	6.90 (22)		
ICE BofAML US High Yield, Cash Pay Index		4.72 (50)	-0.23 (62)	2.35 (63)	3.84 (65)	6.61 (38)	6.26 (64)	7.30 (64)	

Taplin, Canida, Habacht switched from core to core plus effective 10/01/2010.

* Custom Benchmark is Credit Suisse US Leveraged Loan Index and the Credit Suisse Western European Leveraged Loan Index, weighted by the portfolio's market value to each sector.

** Custom Benchmark is 50% JPM GBI-EM Index, 25% JPM EMBI Global Index and 25% JPM Corporate EMBI Diversified Index.

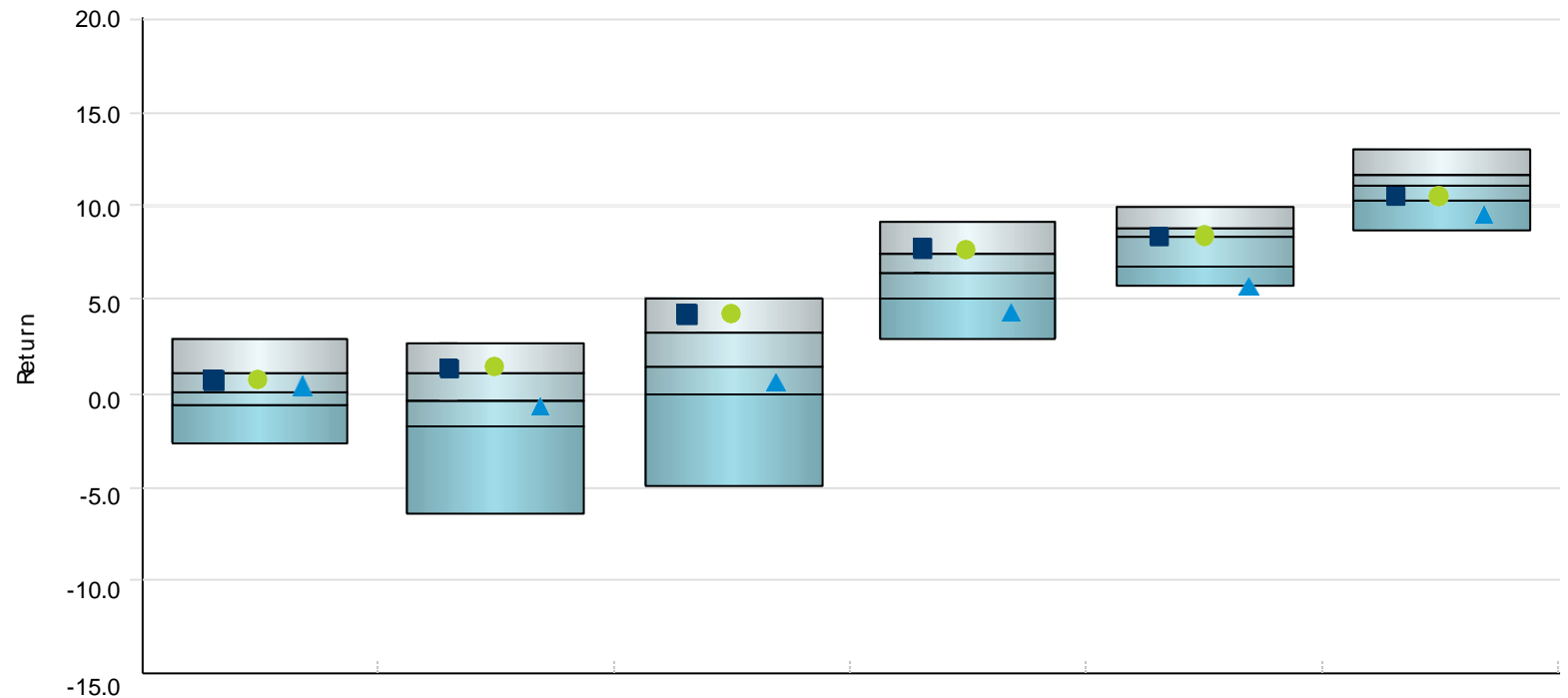


Real Estate

Plan Sponsor Peer Group Analysis

Real Estate vs All Public Plans > \$1B-Real Estate Segment(Gross)

Periods Ended September 30, 2020



	QTD	YTD	1 Year	3 Years	5 Years	10 Years
■ Real Estate	0.65 (35)	1.30 (24)	4.19 (9)	7.65 (22)	8.34 (50)	10.50 (75)
● Real Estate - Net	0.63 (35)	1.28 (24)	4.17 (9)	7.62 (22)	8.31 (51)	10.48 (75)
▲ Blended Benchmark (Real Estate)	0.27 (41)	-0.74 (55)	0.52 (67)	4.25 (89)	5.69 (96)	9.47 (81)
5th Percentile	2.89	2.62	4.98	9.18	9.90	13.09
1st Quartile	1.03	1.09	3.16	7.45	8.92	11.66
Median	0.05	-0.49	1.33	6.42	8.33	11.13
3rd Quartile	-0.66	-1.72	-0.07	5.11	6.86	10.41
95th Percentile	-2.71	-6.43	-4.99	2.92	5.72	8.77
Population	43	38	35	26	21	12

Asset Allocation & Performance

Real Estate

Periods Ended September 30, 2020

	Market Value \$	Performance (%)							Inception Date
		1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	
Real Estate	2,931,690,651	0.65	1.30	4.19	7.65	8.34	10.50	5.48	5/1/1985
Real Estate - Net		0.63	1.28	4.17	7.62	8.31	10.48		
Blended Benchmark (Real Estate)		0.27	-0.74	0.52	4.25	5.69	9.47	7.50	
Real Estate Core Cmp	1,560,907,617	0.84	3.77	7.39	8.98	8.81	10.51	7.37	4/1/1999
TA Assoc. Buckhead	586,042,640	2.56	6.61	11.44	12.75	11.86	12.03	10.74	8/1/1995
Blended Benchmark (Real Estate)		0.27	-0.74	0.52	4.25	5.69	9.47	7.14	
Barings Euro Core Property	134,213,306	2.79	5.71	11.78	16.24			16.54	3/1/2017
Blended Benchmark (Real Estate)		0.27	-0.74	0.52	4.25			4.59	
Blackstone Property Euro	141,602,089	4.20	8.35	14.49				6.37	12/1/2017
Blended Benchmark (Real Estate)		0.27	-0.74	0.52				4.05	
INVESCO Core Real Estate	203,018,548	-4.58	-2.06	-0.29	4.39	5.52		8.37	4/1/2011
Blended Benchmark (Real Estate)		0.27	-0.74	0.52	4.25	5.69		9.04	
INVESCO European real estate	58,327,483	1.70	2.47	6.58				-0.83	4/1/2018
Blended Benchmark (Real Estate)		0.27	-0.74	0.52				3.54	
AEW Core Property Tr	232,592,669	-0.14	-0.23	1.31	4.86	5.95		7.43	10/1/2013
Blended Benchmark (Real Estate)		0.27	-0.74	0.52	4.25	5.69		7.62	
CBRE Core Partners	205,110,882	-1.23	2.18	3.89	7.34	7.30		8.89	12/1/2013
Blended Benchmark (Real Estate)		0.27	-0.74	0.52	4.25	5.69		7.51	
RE Non-Core Cmp	1,370,783,034	0.43	-1.41	0.70	6.15	7.85	10.66	10.74	1/1/2010
Artemis MWBE Spruce	220,088,526	1.98	7.83	8.37	6.82			3.94	6/1/2016
Blended Benchmark (Real Estate)		0.27	-0.74	0.52	4.25			5.06	
Franklin T. EMREFF	5,378,057								

Returns are time-weighted and are reported net of fee for all real estate managers.

The Blended Benchmark (Real Estate) is currently the NCREIF ODCE VW Net Index. Prior to January 1, 2013, it was the NCREIF Property Index + 1%. Returns prior to January, 2007, reflect those of the Consumer Price Index + 5%.

Asset Allocation & Performance



Real Estate

Periods Ended September 30, 2020

	Market Value \$	Performance (%)							Inception Date
		1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	
Security Capital	53,065,585	7.75	-3.68	0.00	7.10	5.88	6.47	10.73	11/1/1997
Blended Benchmark (Real Estate)		0.27	-0.74	0.52	4.25	5.69	9.47	7.10	
Dune II	19,935,889	-2.55	-9.31	-10.23	0.63	5.41	11.90	5.17	2/1/2009
Blended Benchmark (Real Estate)		0.27	-0.74	0.52	4.25	5.69	9.47	7.48	
Non-Core Real Estate Funds	921,381,607	-0.15	-3.21	-1.39	6.65	8.64		9.76	10/1/2011
Blended Benchmark (Real Estate)		0.27	-0.74	0.52	4.25	5.69		8.65	
Rockwood Fund VIII	61,273								
Almanac ARS V	132,586								
Non-Core Intl Real Estate	150,739,511	1.65	1.21	6.98	2.22	-0.24		-2.24	8/1/2014
Blended Benchmark (Real Estate)		0.27	-0.74	0.52	4.25	5.69		7.15	

Returns are time-weighted and are reported net of fee for all real estate managers.

The Blended Benchmark (Real Estate) is currently the NCREIF ODCE VW Net Index. Prior to January 1, 2013, it was the NCREIF Property Index + 1%. Returns prior to January, 2007, reflect those of the Consumer Price Index + 5%.



Alternative Investments

Asset Allocation & Performance

Alternatives Investments

Periods Ended September 30, 2020



	Allocation	Performance (%)							
	Market Value \$	1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Alternatives Investments	2,813,944,850	4.87	3.09	5.74	11.16	9.74	9.36	10.71	2/1/1986
Alternatives Custom Benchmark		2.18	6.68	9.00	9.00	9.00	9.00	12.57	
Absolute Return	262,168	-19.31	-43.99	-44.39	-22.67	-8.12	-2.31	1.07	1/1/2002
Aurora Investment	262,168	-19.31							11/1/2001
Private Equity	2,327,565,327	5.25	4.16	7.69	13.87	12.10	12.07	12.91	2/1/1986
Alternatives Custom Benchmark		2.18	6.68	9.00	9.00	9.00	9.00	12.57	
Abbott S/A Comp.	382,260,962	8.20	7.82	15.09	14.47	12.73	12.57	13.77	6/1/1987
Muller Monroe MPEFF	4,707,209	-5.23	-2.40	-2.53	1.59	3.67	8.78	4.88	5/1/2008
Pantheon S/A Comp.	247,341,852	-8.05	-2.83	3.70	11.19	10.37	11.33	9.51	10/1/2000
Private Equity Fund - Domestic	1,324,410,427	7.18	7.93	8.38	16.52	14.16		11.63	6/1/2012
Private Equity Fund - International	348,049,166	6.33	-5.67	0.85	8.44	4.73		-9.99	7/1/2015
Oakbrook Opportunities Fund	20,795,710	-0.05	-7.62	-17.81				-13.68	6/1/2019
Private Credit	143,598,103	11.94	-11.05	-9.16				-9.16	10/1/2019
Private Credit Fund - Domestic	143,598,103	11.94	-11.05	-9.16				-9.16	10/1/2019
Agriculture	210,733,027	-2.58	1.51	-2.08	-1.46	0.83	8.70	6.80	10/1/1997
NCREIF Farmland Index		0.96	1.47	3.84	5.33	6.13	10.85	11.48	
Premiere Partners IV	210,733,027	-2.58	1.51	-2.08	-1.46	0.83		1.65	3/1/2015
Timberland	76,694,130	1.03	5.21	5.78	1.75	0.40	3.11	7.33	10/1/1992
Blended Benchmark (Real Estate)		0.27	-0.74	0.52	4.25	5.69	9.47	7.19	

Returns are time-weighted and are reported net of fee for all real estate managers. The Alternatives Custom Benchmark is based on an annualized return of 9%. Prior to July 1, 2010, it was based on an annual return of 12%. Prior to 2004, it was based on an annualized return of 13%. Prior to 2003, it was based on an annual return of 15%.

Asset Allocation & Performance

Alternatives Investments

Periods Ended September 30, 2020

	Allocation	Performance (%)							
	Market Value \$	1 Quarter	YTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Forest Investment Alternatives Custom Benchmark (Timberland)	76,694,130	1.03	5.21	5.78	1.75	0.40	3.49	7.49	10/1/1992
Unlisted Infrastructure Alternatives Custom Benchmark	55,092,095	8.44	6.89	9.73				9.94	4/1/2018
Unlisted Infrastructure Funds Alternatives Custom Benchmark	55,092,095	8.44	6.89	9.73				9.94	4/1/2018

Returns are time-weighted and are reported net of fee for all real estate managers. The Alternatives Custom Benchmark is based on an annualized return of 9%. Prior to July 1, 2010, it was based on an annual return of 12%. Prior to 2004, it was based on an annualized return of 13%. Prior to 2003, it was based on an annual return of 15%.

Wilshire Consulting

Manager Watch List

Period Ending September 30, 2020



There are currently no investment managers on the
Manager Watch List as of September 30, 2020

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