PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

PERIOD ENDING: SEPTEMBER 30,2022

Total Fund Review

Alameda County Employees' Retirement Association

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U.S. economics summary

— U.S. real GDP fell in Q2 for a second consecutive quarter, down -0.6% annualized (+1.6% over the past full year). Forecasts suggest a potential growth turnaround in the third quarter; the Atlanta Fed GDPNow forecast indicated a growth rate of 2.8% and economists expected 0.9% as of October 14th.

— U.S. core CPI remained elevated in September, rising 0.6% during the month to a new 40-year high of 6.6% year-over-year. Headline inflation continued to show another more moderate monthly print of 0.4% but remained high at 8.2% year-over-year.

— Unemployment fell slightly from 3.6% in June to 3.5% in September, which did not reflect an increase in employment but rather the departure of some Americans from the job market altogether. Weekly initial jobless claims—a measure of the number of workers who filed for unemployment during any given week—moved higher during Q2 to 244,000 in early July but has since fallen to 193,000 in late September.

— The U.S. dollar has appreciated roughly 15% relative to major currencies. A stronger dollar may result in slowing U.S. exports as domestic goods become more expensive to foreign buyers, and lower inflation as American businesses and households are able to purchase foreign goods at cheaper prices.

— Coverage of COVID-19 has tended to focus on the health impacts in a binary way: either the infected individual recovers (and lives) or does not recover (and is deceased). There is a growing body of research by medical experts that suggests a significant portion of survivors face longer-term, often severe, health problems. These issues are known as “long COVID” and may be the primary cause for a severe shrinking of the U.S. labor force.

	Most Recent	**12 Months Prior**
Real GDP *(YoY)*	1.6% *9/30/22*	12.5% *6/30/21*
Inflation *(CPI YoY, Core)*	6.6% *9/30/22*	4.0% *9/30/21*
Inflation *(CPI YoY, Headline)*	8.2% *9/30/22*	5.4% *9/30/21*
Expected Inflation *(5yr-5yr forward)*	2.1% *9/30/22*	2.2% *9/30/21*
Fed Funds Target Range	3.00% – 3.25% *9/30/22*	0.00% – 0.25% *9/30/21*
10-Year Rate	3.83% *9/30/22*	1.49% *9/30/21*
U-3 Unemployment	3.5% *9/30/22*	4.7% *9/30/21*
U-6 Unemployment	6.7% *9/30/22*	8.5% *9/30/21*

International economics summary

— Economic growth expectations continue to weaken around the world, and recession appears possible in some developed countries. High inflation has placed central banks in a corner, requiring a choice between tightening (lower inflation with possible recession) or accommodation (stronger economic activity with possibly continued high inflation).

— Multi-decade high inflation continues to spread across Europe, as consumer prices in September rose 10% from the prior year. Food and energy were major drivers, although the core inflation number is also elevated at 4.8%. Inflation remains a challenge in Europe and the U.S., as prices have been relatively stable in the Asia-pacific region.

— Unemployment rates have been stable and tight in most markets, though this may now be seen as a problem as central bankers work to slow economies and weaken labor markets in order to fight inflation.

— The Russia Ukraine war may be taking a turn, as Ukraine's counteroffensive gains steam. In a rare admission, Russia's Defense Ministry spokesman Igor Konashenkov acknowledged recent defeats: "With numerically superior tank units in the direction of Zolata Balka and Oleksandrivka, the enemy managed to forge deep into our defenses."

— Still dealing with the highest inflation seen in four-decades, the U.K. economy continues to struggle, especially as the Bank of England tightens economic conditions in the face of a recession. The situation worsened following newly elected Prime Minister Liz Truss' new growth plan announcement, which introduced a large tax cut initiatives without additional funding sources secured.

Area	**GDP (Real, YoY)**	**Inflation (CPI, YoY)**	**Unemployment**
United States	1.8% *6/30/22*	8.2% *9/30/22*	3.5% *9/30/22*
Eurozone	4.1% *6/30/22*	10.0% *9/30/22*	6.6% *8/31/22*
Japan	1.6% *6/30/22*	2.8% *9/30/22*	2.5% *8/31/22*
BRICS Nations	1.9% *6/30/22*	4.5% *9/30/22*	5.2% *12/31/21*
Brazil	3.2% *6/30/22*	7.2% *9/30/22*	8.9% *8/31/22*
Russia	(4.1)% *6/30/22*	13.7% *9/30/22*	3.8% *8/31/22*
India	13.5% *6/30/22*	7.4% *9/30/22*	6.4% *9/30/22*
China	0.4% *6/30/22*	2.8% *9/30/22*	5.3% *8/31/22*

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

Equity environment

— Equity markets saw further losses during Q3, extending the selloff deeper into bear market territory. Emerging market equities (MSCI Emerging Markets -11.6%) experienced the greatest drawdown, on an unhedged currency basis, followed by international developed (MSCI EAFE -9.4%) and domestic equities (S&P 500 -4.9%).

— Many markets now trade at valuation levels below their historical average. According to FactSet, the S&P 500 sat at a forward price/earnings of 15.4 as of September 30th, below the five-year average of 18.6 and 10-year average of 17.1. Interestingly, earnings expectations have been fairly resilient at 7.4% for calendar year 2022 and 7.9% for 2023.

— Investors with unhedged foreign currency exposure have seen extreme losses recently. A U.S. investor with an international developed equity investment (MSCI EAFE) suffered a loss of -15.7% over the past year from currency movements. Investors in non-US equity (MSCI ACWI ex-US) saw a -12.0% loss. Currency risk is typically the second largest risk in institutional portfolios and is not expected to be compensated over the long term. We continue to believe that more forward-thinking currency solutions can materially improve portfolio outcomes.

— Value stocks underperformed growth stocks mildly during the quarter (Russell 1000 Value -5.6% vs Russell 1000 Growth -3.6%), and small capitalization stocks outperformed large capitalization stocks (Russell 2000 -2.2%, Russell 1000 -4.7%).

— Volatility remained elevated as the Cboe VIX Index rose further from 28.7% to 31.6%. Risk assets sold-off on concerns of Federal Reserve tightening and liquidity being broadly removed from the global financial system.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
U.S. Large Cap (S&P 500)	(4.9%)		(15.5%)	
U.S. Small Cap (Russell 2000)	(2.2%)		(23.5%)	
U.S. Equity (Russell 3000)	(4.5%)		(17.6%)	
U.S. Large Value (Russell 1000 Value)	(5.6%)		(11.4%)	
US Large Growth (Russell 1000 Growth)	(3.6%)		(22.6%)	
Global Equity (MSCI ACWI)	(6.8%)	(4.6%)	(20.7%)	(15.9%)
International Large (MSCI EAFE)	(9.4%)	(2.8%)	(25.1%)	(9.4%)
China (MSCI China)	(22.5%)	(22.5)%	(35.3%)	(35.3%)
Emerging Markets (MSCI Emerging Markets)	(11.6%)	(8.2%)	(28.1%)	(22.5%)

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 9/30/22

Fixed income environment

— The 10-year U.S. Treasury yield rose materially from 2.89% to 3.83% as the Federal Reserve reaffirmed its aggressive stance and markets questioned whether interest rates might be held at higher levels for longer than previously anticipated.

— Credit performance was mixed over Q3 with lower duration exposures faring better than higher duration exposures. Fears of a looming recession remained as the Fed's 75 basis point rate hikes in July and September reinforced its intention to fight inflation until the "job is done." Leveraged loans performed the best, returning 1.2%, followed by high yield credit and investment grade credit which returned -0.6% and -4.9%, respectively.

— Default activity continued to pick up in the third quarter with seven companies defaulting on loans and bonds totaling $16.5 billion. This was the highest quarterly total seen since the second quarter of 2020. Activity represented a significant jump from the $1.6 billion and $10.4 billion shown in Q1 and Q2, respectively.

— The U.S. Yield Curve inverted during the quarter, with the 10-year 2-year spread falling from 0.1% to -0.4%. An inverted curve has historically suggested recession within two years or so.

— Throughout the third quarter, the Federal Reserve continued its path to reduce the balance sheet, beginning in June with the paced redemption of maturing securities. The initial June monthly redemption caps of $30 billion for Treasuries and $17.5 billion for agency MBS were increased to $60 billion and $35 billion in September. Markets have seemingly digested the reduction well, although the total drawdown has been relatively small so far, around $200 billion against the peak size of $8.97 trillion in April 2022.

	QTD Total Return	1 Year Total Return
Core Fixed Income (Bloomberg U.S. Aggregate)	(4.8%)	(14.6%)
Core Plus Fixed Income (Bloomberg U.S. Universal)	(4.5%)	(14.9%)
U.S. Treasuries (Bloomberg U.S. Treasury)	(4.3%)	(12.9%)
U.S. Long Treasuries (Bloomberg U.S. Treasury)	(9.6%)	(26.7%)
U.S. High Yield (Bloomberg U.S. Corporate HY)	(0.6%)	(14.1%)
Bank Loans (S&P/LSTA Leveraged Loan)	(1.4%)	(2.5%)
Emerging Market Debt Local (JPM GBI-EM Global Diversified)	(4.7%)	(20.6%)
Emerging Market Debt Hard (JPM EMBI Global Diversified)	(4.6%)	(24.3%)
Mortgage-Backed Securities (Bloomberg MBS)	(5.3%)	(9.0%)
T-Bills (FTSE 3-Month T-Bill)	0.5%	0.6%

Source: Bloomberg, as of 9/30/22

Public real assets environment

— <u>REITs</u> - REITs declined 11.6% during the 3rd quarter, reflecting continued global economic risk, an increased possibility of a recession on the horizon, and central banks globally pursuing higher rates in an effort to tame extremely high inflation. Investment activity, has declined due to the the impact of higher interest rates and increased construction costs.

— <u>Listed Infrastructure</u> – Listed infrastructure returned -6.0% YOY, and has recently accelerated underperformance, with QTD returns of -9.6%. This is reflective of continued risk-off sentiment in the space. Increasing rates, and the probability of a recession have weighed on pricing and returns, as has a strong dollar in terms of global returns. Ongoing concerns about gas supplies and energy prices also weighed on performance.

— <u>Commodities</u> – Despite a YOY gain of 10.7%, commodities fell 4.8% in Q3-2022, reflecting the impacts of increased recession risk, global central banks raising interest rates, and a stronger US dollar. Natural gas gained the most while lumber and gasoline futures declined significantly over the quarter.

— <u>TIPS</u> - The Bloomberg U.S. TIPS index returned -5.5% in the most recent quarter and is down 11.6% year-over-year. This is reflective of not only the Federal Reserve's dramatic rate increases, but their continued messaging that they will continue to fight inflation with the tools at their disposal, and that, with a robust labor market, their key focus is the second part of their mandate, price stability.

	QTD Total Return	**1 Year Total Return**
REITs (FTSE EPRA/NAREIT Global)	(11.6%)	(22.4%)
Listed Infrastructure (S&P Global Infrastructure)	(9.6%)	(6.0)%
Commodities (Bloomberg Commodity Index)	(4.8%)	10.7%
TIPS (Bloomberg US TIPS)	(5.5%)	(11.6%)

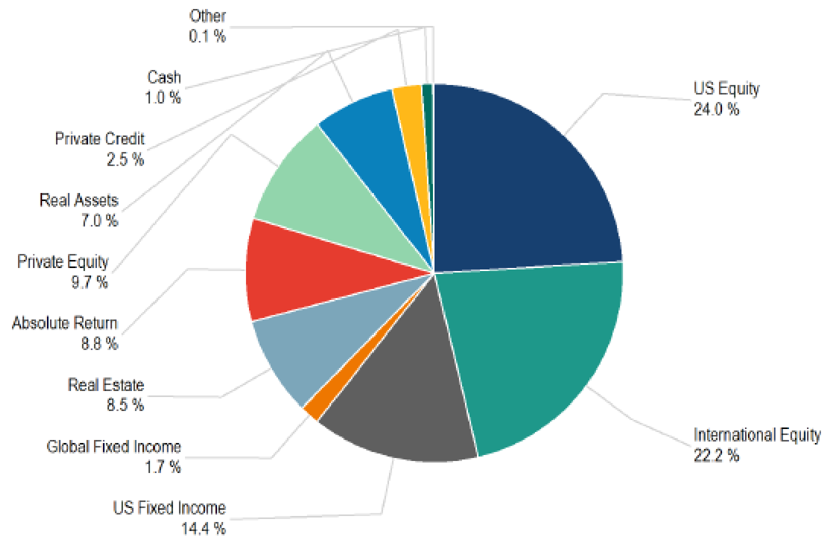
Economic environment updated (Q4-2022)

ECONOMIC INDICATOR	QTD TOTAL RETURN	1 YEAR TOTAL RETURN
Real GDP	2.8%[1]	1.8%[2]
Inflation	5.4%[3]	7.7%[4]
Fed Funds Target Range	3.75% – 4.00%	0.00% – 0.25%
10-Year Rate	3.55%	1.45%
Unemployment	3.5%[5]	4.2%
MARKETS	**YTD TOTAL RETURN[6]**	
S&P 500	(13.1%)	
Russell 3000	(14.2%)	
MSCI ACWI ex-US	(15.4%)	
Bloomberg US Aggregate	(12.6%)	
REITS	(21.7%)	
Commodities	27.7%	

1 – Annualized, Advance Estimate for Q4-2022
2 – Annualized, Estimate for Q4-2021 – Q4-2022
3 - Annualized, Advance Estimate for Q4-2022
4 – Annualized, Estimate YOY
5 - Estimated
6 – As of 11/30/22

Total Fund review

Asset allocation

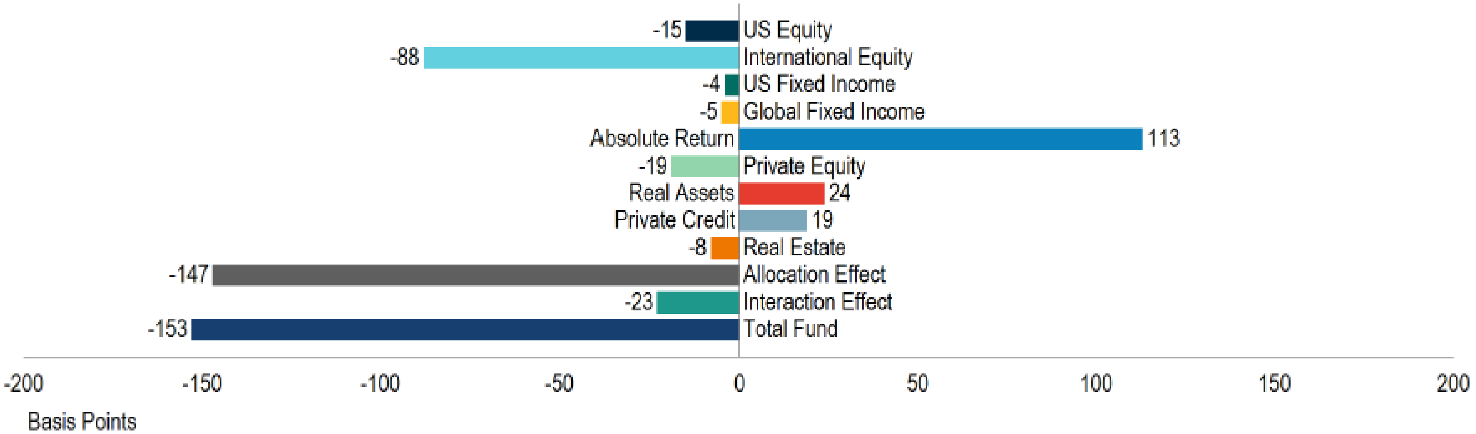


	Current Balance ($)	Current Allocation (%)	Policy (%)	Difference (%)	Within IPS Range?
US Equity	2,351,095,125	24.0	24.0	0.0	Yes
International Equity	2,176,731,971	22.2	24.0	-1.8	Yes
US Fixed Income	1,406,849,406	14.4	12.0	2.4	Yes
Global Fixed Income	165,167,013	1.7	2.0	-0.3	Yes
Real Estate	837,238,409	8.5	9.0	-0.5	Yes
Absolute Return	858,324,394	8.8	8.0	0.8	Yes
Private Equity	950,964,884	9.7	11.0	-1.3	Yes
Real Assets	690,435,112	7.0	6.0	1.0	Yes
Private Credit	243,538,139	2.5	4.0	-1.5	Yes
Cash	102,167,050	1.0	0.0	1.0	Yes
Other	11,142,995	0.1	0.0	0.1	Yes
Total	**9,793,654,498**	**100.0**	**100.0**		

- Public markets comprise 78% of ACERA's assets
- Majority of public markets assets are invested in equities (54%)

Total Fund attribution

One Year as of 9/30/22



- Main source of value-add was Absolute Return
- Selection effect in International Equity was material detractor

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	-18.22%	-17.63%	-0.59%	-0.15%	-0.21%	-0.02%	-0.38%
International Equity	-28.50%	-25.34%	-3.16%	-0.88%	-0.12%	-0.06%	-1.07%
US Fixed Income	-14.93%	-14.60%	-0.33%	-0.04%	-0.17%	-0.01%	-0.23%
Global Fixed Income	-24.72%	-22.14%	-2.57%	-0.05%	0.01%	0.01%	-0.03%
Absolute Return	9.82%	-6.35%	16.17%	1.13%	0.03%	-0.13%	1.04%
Private Equity	1.04%	3.47%	-2.43%	-0.19%	-0.34%	-0.01%	-0.54%
Real Assets	5.70%	0.12%	5.58%	0.24%	0.05%	0.06%	0.35%
Private Credit	4.64%	-0.82%	5.46%	0.19%	-0.17%	-0.09%	-0.07%
Real Estate	20.98%	22.09%	-1.11%	-0.08%	-0.54%	0.03%	-0.59%
Total	**-12.78%**	**-11.25%**	**-1.53%**	**0.17%**	**-1.47%**	**-0.23%**	**-1.53%**

Total Fund and composite performance

	Market Value ($)	% of Portfolio	3 Mo (%)	6 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fund	**9,793,654,498**	**100.00**	**-4.97**	**-13.37**	**-12.85**	**5.24**	**5.47**	**7.49**	**7.60**	**9.18**	**Sep-85**
Policy Index			*-4.90*	*-13.65*	*-11.41*	*5.49*	*5.65*	*7.87*	*7.92*	*9.47*	*Sep-85*
Total Fund w/o Overlay	**9,782,511,503**	**99.89**	**-4.89**	**-13.23**	**-12.68**	**5.31**	**5.51**	**7.52**	**7.62**	**9.18**	**Sep-85**
US Equity	**2,351,095,125**	**24.01**	**-4.30**	**-20.36**	**-18.22**	**7.60**	**8.85**	**10.85**	**11.48**	**11.27**	**Sep-85**
Russell 3000			*-4.46*	*-20.42*	*-17.63*	*7.70*	*8.62*	*10.90*	*11.38*	*10.84*	*Sep-85*
International Equity	**2,176,731,971**	**22.23**	**-10.80**	**-22.37**	**-28.50**	**-0.88**	**0.11**	**4.63**	**4.48**	**7.18**	**Dec-90**
MSCI ACWI ex USA IMI Gross			*-9.58*	*-22.33*	*-25.34*	*-0.83*	*-0.32*	*3.86*	*3.66*	*5.46*	*Dec-90*
Total Fixed Income	**1,572,016,419**	**16.05**	**-4.80**	**-10.77**	**-16.04**	**-1.73**	**0.29**	**2.08**	**2.26**	**6.53**	**Sep-86**
Fixed Income Blend			*-5.14*	*-11.21*	*-16.72*	*-3.97*	*-0.80*	*0.47*	*0.61*	*5.54*	*Sep-86*
US Fixed Income	**1,406,849,406**	**14.36**	**-4.29**	**-9.39**	**-14.93**	**-1.67**	**0.82**	**2.11**	**2.65**	**6.48**	**Sep-86**
Bloomberg US Aggregate TR			*-4.75*	*-9.22*	*-14.60*	*-3.26*	*-0.27*	*0.54*	*0.89*	*5.40*	*Sep-86*
Global Fixed Income	**165,167,013**	**1.69**	**-8.93**	**-21.38**	**-24.72**	**-4.97**	**-3.15**	**0.58**	**0.11**	**5.30**	**Nov-01**
FTSE WGBI TR			*-7.61*	*-15.84*	*-22.14*	*-7.03*	*-3.07*	*-1.29*	*-1.76*	*2.81*	*Nov-01*

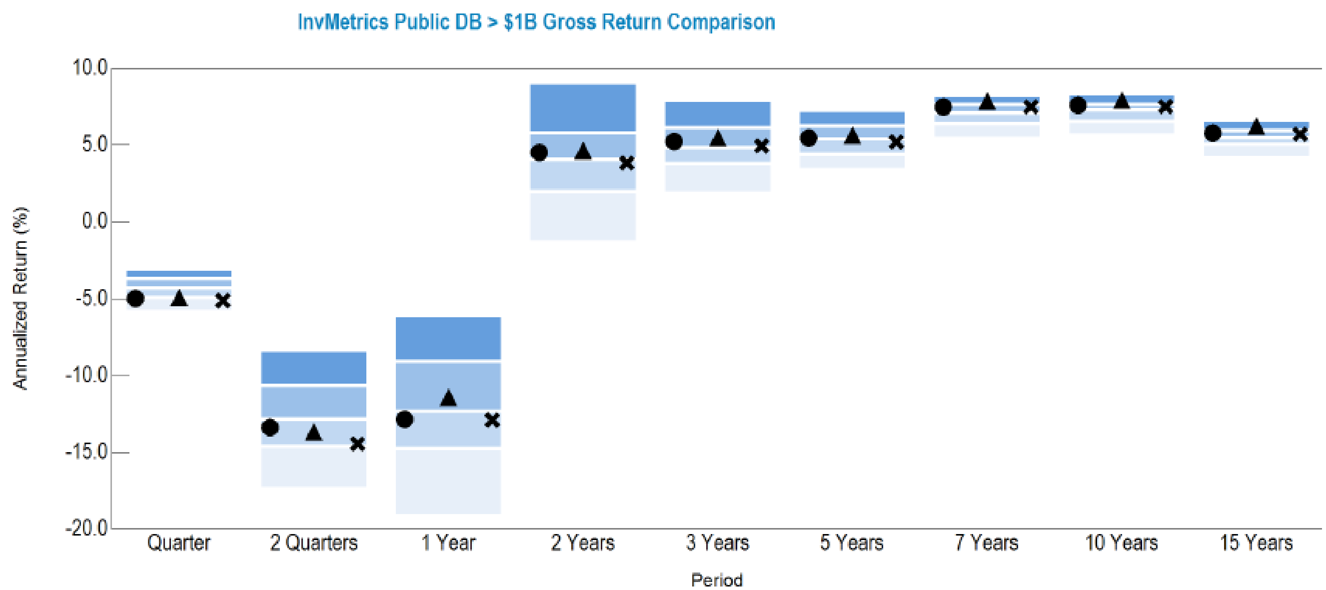
- ACERA has added value in fixed income markets over both short term (i.e., < 3yrs) and longer term periods
- In short term, international public equities have lagged respective benchmarks, but compare favorably in longer term periods

Total Fund and composite performance (continued)

	Market Value ($)	% of Portfolio	3 Mo (%)	6 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	7 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Absolute Return	858,324,394	8.76	2.73	4.82	9.82	6.69	4.15	4.02	4.77	4.15	Sep-11
Absolute Return Blend			-0.17	-4.10	-6.35	4.21	3.11	3.57	3.75	3.80	Sep-11
Private Equity	950,964,884	9.71	-5.89	-6.62	1.04	18.40	17.13	14.93	16.31	7.10	Nov-08
Private Equity Blend			-5.46	-6.89	3.47	20.52	18.17	18.61	17.61	18.09	Nov-08
Real Assets	690,435,112	7.05	-4.37	-10.15	5.70	7.99	3.61	2.61	-2.30	-1.74	Sep-11
Real Asset Blend			-6.55	-15.95	0.12	5.48	4.44	5.87	5.38	5.35	Sep-11
Private Credit	243,538,139	2.49	1.91	1.92	4.64	--	--	--	--	5.71	Oct-19
S&P/LSTA Leveraged Loan Index +1.75%			1.80	-2.30	-0.82	4.00	4.78	5.47	5.34	4.22	Oct-19
Cash	102,167,050	1.04	0.24	0.35	0.35	0.60	1.01	0.92	0.66	2.94	Sep-85
91 Day T-Bills			0.46	0.57	0.62	0.49	1.08	0.90	0.64	3.03	Sep-85
Real Estate	837,238,409	8.55	1.22	5.57	20.98	12.52	10.59	10.48	11.69	7.54	Mar-86
Real Estate Blend			0.52	5.32	22.09	12.37	10.24	9.85	10.91	8.24	Mar-86
Overlay	11,142,995	0.11									

- ACERA has added value in private markets and Absolute Return over last 10 years and in shorter term periods as well.
- Real Assets have lagged their benchmark since inception, but performance has rebounded in more recent time periods

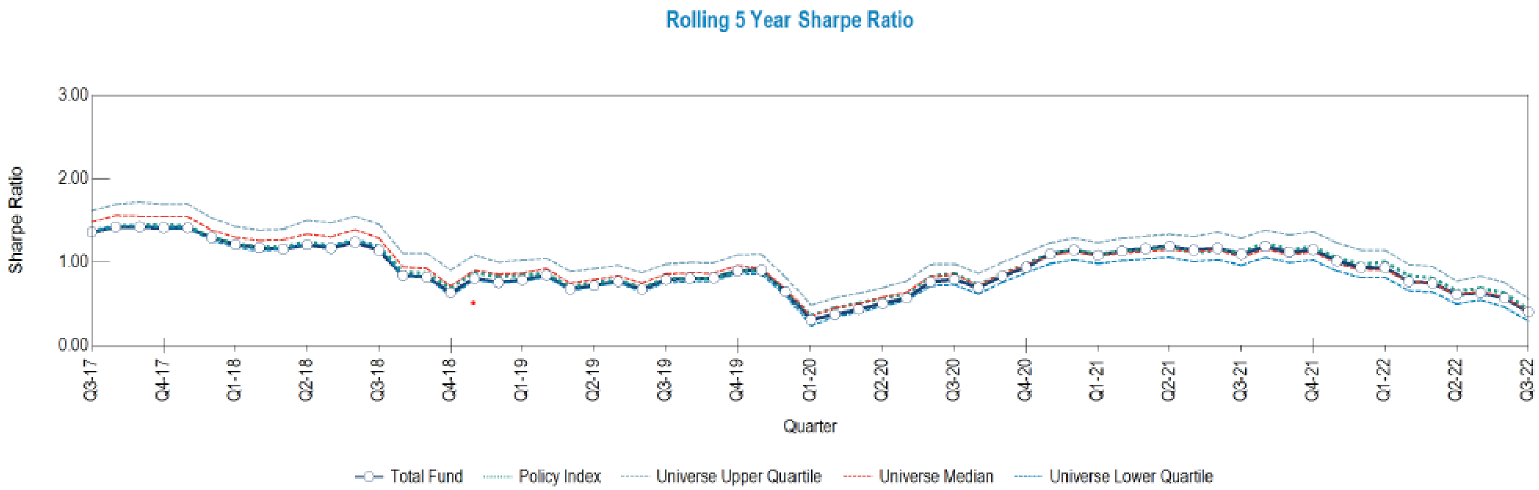
Peer universe comparison

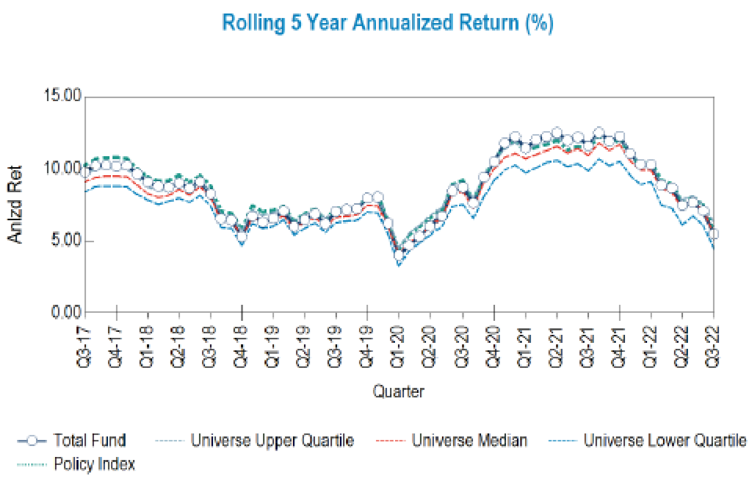


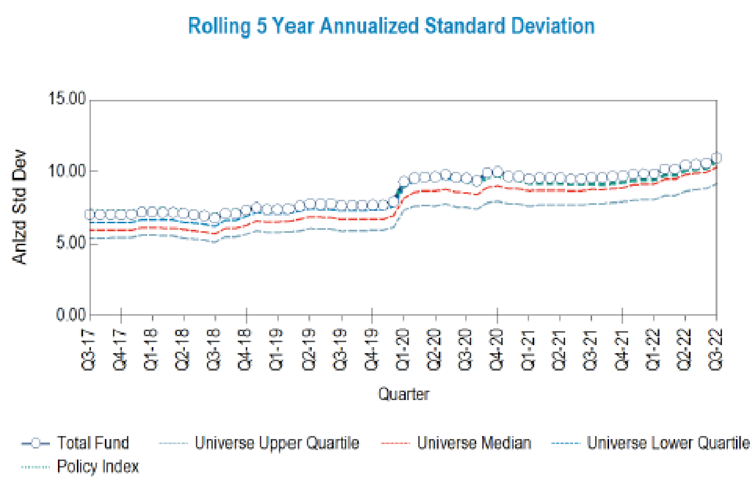
Return (Rank)	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years		15 Years	
5th Percentile	-3.09		-8.37		-6.11		9.04		7.89		7.24		8.22		8.31		6.62	
25th Percentile	-3.67		-10.63		-9.05		5.82		6.17		6.27		7.70		7.69		5.98	
Median	-4.28		-12.80		-12.27		4.08		4.86		5.41		7.11		7.32		5.50	
75th Percentile	-4.90		-14.59		-14.75		2.01		3.84		4.44		6.41		6.57		5.10	
95th Percentile	-5.82		-17.33		-19.11		-1.29		1.91		3.44		5.46		5.69		4.21	
# of Portfolios	75		75		75		74		73		73		72		69		65	
● Total Fund	-4.97	(79)	-13.37	(56)	-12.85	(54)	4.53	(44)	5.24	(42)	5.47	(47)	7.49	(35)	7.60	(32)	5.78	(31)
▲ Policy Index	-4.90	(76)	-13.65	(62)	-11.41	(46)	4.66	(42)	5.49	(39)	5.65	(40)	7.87	(19)	7.92	(11)	6.22	(10)
✕ Allocation Index	-5.11	(81)	-14.44	(74)	-12.89	(55)	3.84	(52)	4.95	(48)	5.21	(57)	7.49	(35)	7.51	(38)	5.70	(38)

- In most periods, ACERA compares well vs. peers (i.e., above median)

Risk-adjusted trend vs. peers



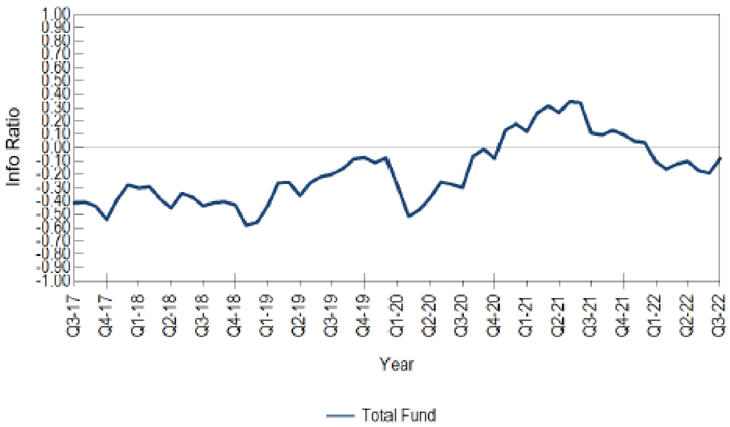




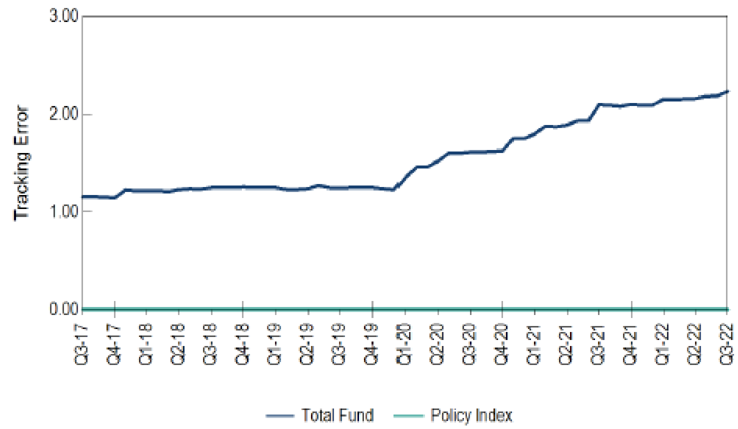
- ACERA's risk-adjusted return ratio (Sharpe) has been consistently at peer median.
- Long-term returns have ranked in top quartile
- However, total fund volatility has also been higher vs. peers

Trend in risk-adjusted metrics

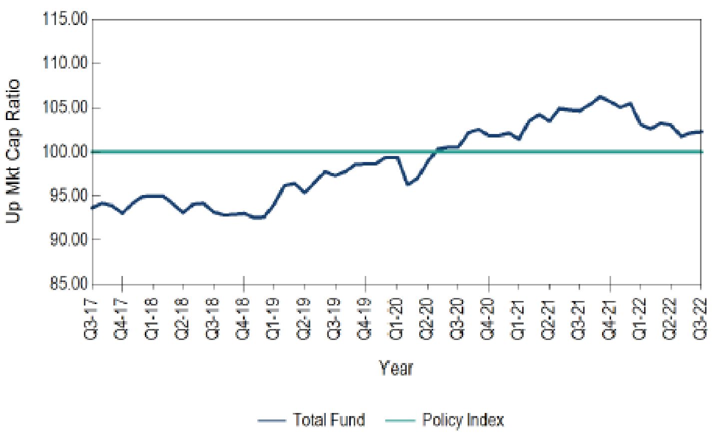
Rolling 5 Year Information Ratio



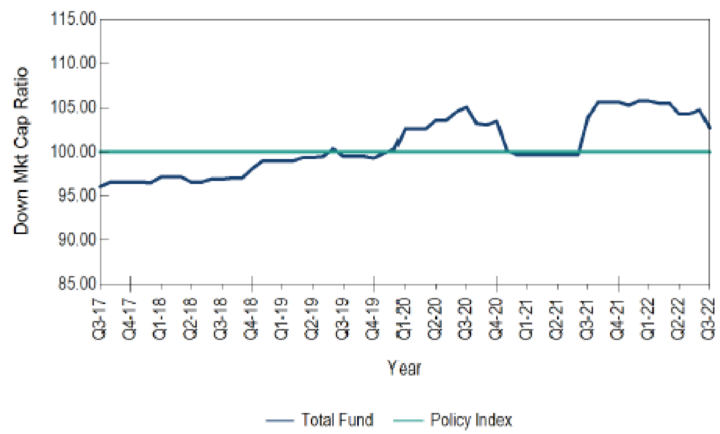
Rolling 5 Year Tracking Error



Rolling 5 Year Up Market Capture Ratio (%)



Rolling 5 Year Down Market Capture Ratio (%)



- Risk-adjusted active returns have been increasing over last several years at modestly higher levels of active risk, trailing off slightly after Q2-21.
- Up market capture has been mixed vs. down market capture.

Watch List

Manager	Date on Watchlist	Reason	Product Inception Date
Mondrian	9/30/22	Since inception return of 4.77% vs. benchmark (MSCI ACWI ex-US) return of 5.37% and MSCI ex-US Value return of 4.98%; 10-year gross-off-fees return (2.53%) places Mondrian in 86th percentile of ACWI ex-US Large Cap Value Equity Universe. Firm has consistently been in bottom 2 deciles of that universe over cumulative time series.	November, 2003
Templeton	9/30/22	Since inception return of 2.69% vs benchmark (MSCI ACWI ex-US Small Cap) return of 2.93% and MSCI ACWI ex-US Value return of 2.74%.; 10-year return gross-of fees return (4.13%) places Templeton in the 97th percentile of ACWI ex US Small Cap managers.	April, 2011

- Verus and staff recommend placement of Mondrian and Franklin Templeton on watchlist per the following criteria from the Board's General Investment Guidelines, Policies, and Procedures: *Insufficient net of fee, longer-term returns (i.e. greater than 5-years) versus the benchmark and/or peer group*

Appendix

Glossary

Active Return (aka Excess Return) – The difference between the active manager's return and the return on the manager's benchmark index.

Active Risk (aka Tracking Error) – the volatility (standard deviation) of active return.

Attribution – A process by which sources of excess/active return (e.g. active decisions by investment management professionals) are decomposed into the following effects:

- **Allocation** – The amount of excess returns attributable to allocation decisions amongst various asset classes.
- **Selection** – The amount of excess return attributable to selection of individual investments/managers within asset classes.
- **Interaction** – The amount of excess return attributable to both allocation and selection decisions acting in concert with one another.

Sharpe Ratio - A measure of that explains the return of an investment compared to its risk. The Sharpe Ratio indicates excess portfolio return for each unit of risk over the risk free rate (usually short-term Treasuries or LIBOR) per unit of volatility. The higher the Sharpe Ratio, the greater its risk-adjusted return.

Standard Deviation - A measure of volatility, or risk. Measures risk by indicating how far from the average, or mean, return one is likely to fall in any given time period. The rules of statistics dictate that you will fall within 1 standard deviation of the mean 2/3 of the time and within 2 standard deviations 95% of the time. 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%.

Time Weighted Return – A measure of the compound rate of growth in a portfolio, which eliminates the distorting effects of growth rates created by inflows and outflows of money.

Glossary (cont.)

Upside Market Capture – A measure of the manager's performance in up markets relative to the market itself. A value of 110 suggests the manager performs ten percent better than the market when the market is up during the selected time period. The return for the market for each quarter is considered an up market if it is greater than or equal to zero. The Upside Capture Ratio is calculated by dividing the return of the manager during the up market periods by the return of the market for the same period. Generally, the higher the UMC Ratio, the better (If the manager's UMC Ratio is negative, it means that during that specific time period, the manager's return for that period was actually negative).[1]

Downside Market Capture - A measure of the manager's performance in down markets relative to the market itself. A value of 90 suggests the manager's loss is only nine tenths of the market's loss during the selected time period. A market is considered down if the return for the benchmark is less than zero. The Downside Capture Ratio is calculated by dividing the return of the manager during the down market periods by the return of the market during the same periods. Generally, the lower the DMC Ratio, the better (If the manager's DMC Ratio is negative, it means that during that specific time period, the manager's return for that period was actually positive).[1]

1 – Source: eVestment

Glossary (cont.)

Information Ratio – the ratio of active return to active risk, i.e., how much excess return an active manager delivers per unit of tracking error. A common basis of comparison in manager searches.

$$Active\ Return = (R_P - R_B)$$

The return difference between the portfolio return and the benchmark return

$$Active\ Risk = \sigma(R_P - R_B)$$

The volatility of the Active Return

$$Information\ Ratio = \frac{Active\ Return}{Active\ Risk}$$

Rearranging the formula…

$$(Information\ Ratio)\ x\ (Active\ Risk) = Active\ Return$$

Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

PERIOD ENDING: SEPTEMBER 30, 2022

Investment Performance Review for

Alameda County Employees’ Retirement Association

Non-Confidential

U.S. economics summary

— U.S. real GDP fell in Q2 for a second consecutive quarter, down -0.6% annualized (+1.6% over the past full year). Forecasts suggest a potential growth turnaround in the third quarter; the Atlanta Fed GDPNow forecast indicated a growth rate of 2.8% and economists expected 0.9% as of October 14th.

— U.S. core CPI remained elevated in September, rising 0.6% during the month to a new 40-year high of 6.6% year-over-year. Headline inflation continued to show another more moderate monthly print of 0.4% but remained high at 8.2% year-over-year.

— Unemployment fell slightly from 3.6% in June to 3.5% in September, which did not reflect an increase in employment but rather the departure of some Americans from the job market altogether. Weekly initial jobless claims—a measure of the number of workers who filed for unemployment during any given week—moved higher during Q2 to 244,000 in early July but has since fallen to 193,000 in late September.

— The U.S. dollar has appreciated roughly 15% relative to major currencies. A stronger dollar may result in slowing U.S. exports as domestic goods become more expensive to foreign buyers, and lower inflation as American businesses and households are able to purchase foreign goods at cheaper prices.

— Coverage of COVID-19 has tended to focus on the health impacts in a binary way: either the infected individual recovers (and lives) or does not recover (and is deceased). There is a growing body of research by medical experts that suggests a significant portion of survivors face longer-term, often severe, health problems. These issues are known as “long COVID” and may be the primary cause for a severe shrinking of the U.S. labor force.

	Most Recent	12 Months Prior
Real GDP *(YoY)*	1.6% *9/30/22*	12.5% *6/30/21*
Inflation *(CPI YoY, Core)*	6.6% *9/30/22*	4.0% *9/30/21*
Inflation *(CPI YoY, Headline)*	8.2% *9/30/22*	5.4% *9/30/21*
Expected Inflation *(5yr-5yr forward)*	2.1% *9/30/22*	2.2% *9/30/21*
Fed Funds Target Range	3.00% – 3.25% *9/30/22*	0.00% – 0.25% *9/30/21*
10-Year Rate	3.83% *9/30/22*	1.49% *9/30/21*
U-3 Unemployment	3.5% *9/30/22*	4.7% *9/30/21*
U-6 Unemployment	6.7% *9/30/22*	8.5% *9/30/21*

International economics summary

— Economic growth expectations continue to weaken around the world, and recession appears possible in some developed countries. High inflation has placed central banks in a corner, requiring a choice between tightening (lower inflation with possible recession) or accommodation (stronger economic activity with possibly continued high inflation).

— Multi-decade high inflation continues to spread across Europe, as consumer prices in September rose 10% from the prior year. Food and energy were major drivers, although the core inflation number is also elevated at 4.8%. Inflation remains a challenge in Europe and the U.S., as prices have been relatively stable in the Asia-pacific region.

— Unemployment rates have been stable and tight in most markets, though this may now be seen as a problem as central bankers work to slow economies and weaken labor markets in order to fight inflation.

— The Russia Ukraine war may be taking a turn, as Ukraine's counteroffensive gains steam. In a rare admission, Russia's Defense Ministry spokesman Igor Konashenkov acknowledged recent defeats: "With numerically superior tank units in the direction of Zolata Balka and Oleksandrivka, the enemy managed to forge deep into our defenses."

— Still dealing with the highest inflation seen in four-decades, the U.K. economy continues to struggle, especially as the Bank of England tightens economic conditions in the face of a recession. The situation worsened following newly elected Prime Minister Liz Truss' new growth plan announcement, which introduced a large tax cut initiatives without additional funding sources secured.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	1.8% *6/30/22*	8.2% *9/30/22*	3.5% *9/30/22*
Eurozone	4.1% *6/30/22*	10.0% *9/30/22*	6.6% *8/31/22*
Japan	1.6% *6/30/22*	2.8% *9/30/22*	2.5% *8/31/22*
BRICS Nations	1.9% *6/30/22*	4.5% *9/30/22*	5.2% *12/31/21*
Brazil	3.2% *6/30/22*	7.2% *9/30/22*	8.9% *8/31/22*
Russia	(4.1)% *6/30/22*	13.7% *9/30/22*	3.8% *8/31/22*
India	13.5% *6/30/22*	7.4% *9/30/22*	6.4% *9/30/22*
China	0.4% *6/30/22*	2.8% *9/30/22*	5.3% *8/31/22*

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

Equity environment

— Equity markets saw further losses during Q3, extending the selloff deeper into bear market territory. Emerging market equities (MSCI Emerging Markets -11.6%) experienced the greatest drawdown, on an unhedged currency basis, followed by international developed (MSCI EAFE -9.4%) and domestic equities (S&P 500 -4.9%).

— Many markets now trade at valuation levels below their historical average. According to FactSet, the S&P 500 sat at a forward price/earnings of 15.4 as of September 30th, below the five-year average of 18.6 and 10-year average of 17.1. Interestingly, earnings expectations have been fairly resilient at 7.4% for calendar year 2022 and 7.9% for 2023.

— Investors with unhedged foreign currency exposure have seen extreme losses recently. A U.S. investor with an international developed equity investment (MSCI EAFE) suffered a loss of -15.7% over the past year from currency movements. Investors in non-US equity (MSCI ACWI ex-US) saw a -12.0% loss. Currency risk is typically the second largest risk in institutional portfolios and is not expected to be compensated over the long term. We continue to believe that more forward-thinking currency solutions can materially improve portfolio outcomes.

— Value stocks underperformed growth stocks mildly during the quarter (Russell 1000 Value -5.6% vs Russell 1000 Growth -3.6%), and small capitalization stocks outperformed large capitalization stocks (Russell 2000 -2.2%, Russell 1000 -4.7%).

— Volatility remained elevated as the Cboe VIX Index rose further from 28.7% to 31.6%. Risk assets sold-off on concerns of Federal Reserve tightening and liquidity being broadly removed from the global financial system.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
U.S. Large Cap (S&P 500)	(4.9%)		(15.5%)	
U.S. Small Cap (Russell 2000)	(2.2%)		(23.5%)	
U.S. Equity (Russell 3000)	(4.5%)		(17.6%)	
U.S. Large Value (Russell 1000 Value)	(5.6%)		(11.4%)	
US Large Growth (Russell 1000 Growth)	(3.6%)		(22.6%)	
Global Equity (MSCI ACWI)	(6.8%)	(4.6%)	(20.7%)	(15.9%)
International Large (MSCI EAFE)	(9.4%)	(2.8%)	(25.1%)	(9.4%)
China (MSCI China)	(22.5%)	(22.5)%	(35.3%)	(35.3%)
Emerging Markets (MSCI Emerging Markets)	(11.6%)	(8.2%)	(28.1%)	(22.5%)

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 9/30/22

Fixed income environment

— The 10-year U.S. Treasury yield rose materially from 2.89% to 3.83% as the Federal Reserve reaffirmed its aggressive stance and markets questioned whether interest rates might be held at higher levels for longer than previously anticipated.

— Credit performance was mixed over Q3 with lower duration exposures faring better than higher duration exposures. Fears of a looming recession remained as the Fed's 75 basis point rate hikes in July and September reinforced its intention to fight inflation until the "job is done." Leveraged loans performed the best, returning 1.2%, followed by high yield credit and investment grade credit which returned -0.6% and -4.9%, respectively.

— Default activity continued to pick up in the third quarter with seven companies defaulting on loans and bonds totaling $16.5 billion. This was the highest quarterly total seen since the second quarter of 2020. Activity represented a significant jump from the $1.6 billion and $10.4 billion shown in Q1 and Q2, respectively.

— The U.S. Yield Curve inverted during the quarter, with the 10-year 2-year spread falling from 0.1% to -0.4%. An inverted curve has historically suggested recession within two years or so.

— Throughout the third quarter, the Federal Reserve continued its path to reduce the balance sheet, beginning in June with the paced redemption of maturing securities. The initial June monthly redemption caps of $30 billion for Treasuries and $17.5 billion for agency MBS were increased to $60 billion and $35 billion in September. Markets have seemingly digested the reduction well, although the total drawdown has been relatively small so far, around $200 billion against the peak size of $8.97 trillion in April 2022.

	QTD Total Return	1 Year Total Return
Core Fixed Income (Bloomberg U.S. Aggregate)	(4.8%)	(14.6%)
Core Plus Fixed Income (Bloomberg U.S. Universal)	(4.5%)	(14.9%)
U.S. Treasuries (Bloomberg U.S. Treasury)	(4.3%)	(12.9%)
U.S. Long Treasuries (Bloomberg U.S. Treasury)	(9.6%)	(26.7%)
U.S. High Yield (Bloomberg U.S. Corporate HY)	(0.6%)	(14.1%)
Bank Loans (S&P/LSTA Leveraged Loan)	(1.4%)	(2.5%)
Emerging Market Debt Local (JPM GBI-EM Global Diversified)	(4.7%)	(20.6%)
Emerging Market Debt Hard (JPM EMBI Global Diversified)	(4.6%)	(24.3%)
Mortgage-Backed Securities (Bloomberg MBS)	(5.3%)	(9.0%)
T-Bills (FTSE 3-Month T-Bill)	0.5%	0.6%

Source: Bloomberg, as of 9/30/22

Public real assets environment

— REITs - REITs declined 11.6% during the 3rd quarter, reflecting continued global economic risk, an increased possibility of a recession on the horizon, and central banks globally pursuing higher rates in an effort to tame extremely high inflation. Investment activity, has declined due to the the impact of higher interest rates and increased construction costs.

— Listed Infrastructure – Listed infrastructure returned -6.0% YOY, and has recently accelerated underperformance, with QTD returns of -9.6%. This is reflective of continued risk-off sentiment in the space. Increasing rates, and the probability of a recession have weighed on pricing and returns, as has a strong dollar in terms of global returns. Ongoing concerns about gas supplies and energy prices also weighed on performance.

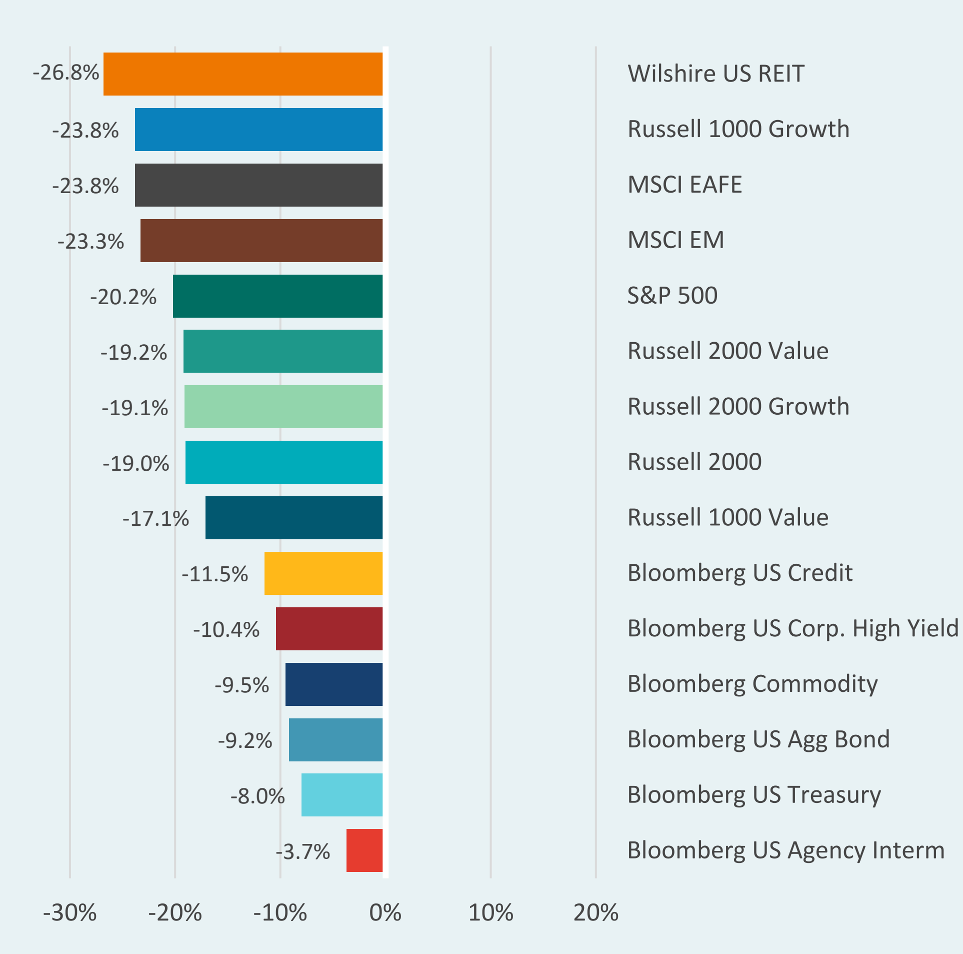
— Commodities – Despite a YOY gain of 10.7%, commodities fell 4.8% in Q3-2022, reflecting the impacts of increased recession risk, global central banks raising interest rates, and a stronger US dollar. Natural gas gained the most while lumber and gasoline futures declined significantly over the quarter.

— TIPS - The Bloomberg U.S. TIPS index returned -5.5% in the most recent quarter and is down 11.6% year-over-year. This is reflective of not only the Federal Reserve's dramatic rate increases, but their continued messaging that they will continue to fight inflation with the tools at their disposal, and that, with a robust labor market, their key focus is the second part of their mandate, price stability.

	QTD Total Return	1 Year Total Return
REITs (FTSE EPRA/NAREIT Global)	(11.6%)	(22.4%)
Listed Infrastructure (S&P Global Infrastructure)	(9.6%)	(6.0)%
Commodities (Bloomberg Commodity Index)	(4.8%)	10.7%
TIPS (Bloomberg US TIPS)	(5.5%)	(11.6%)

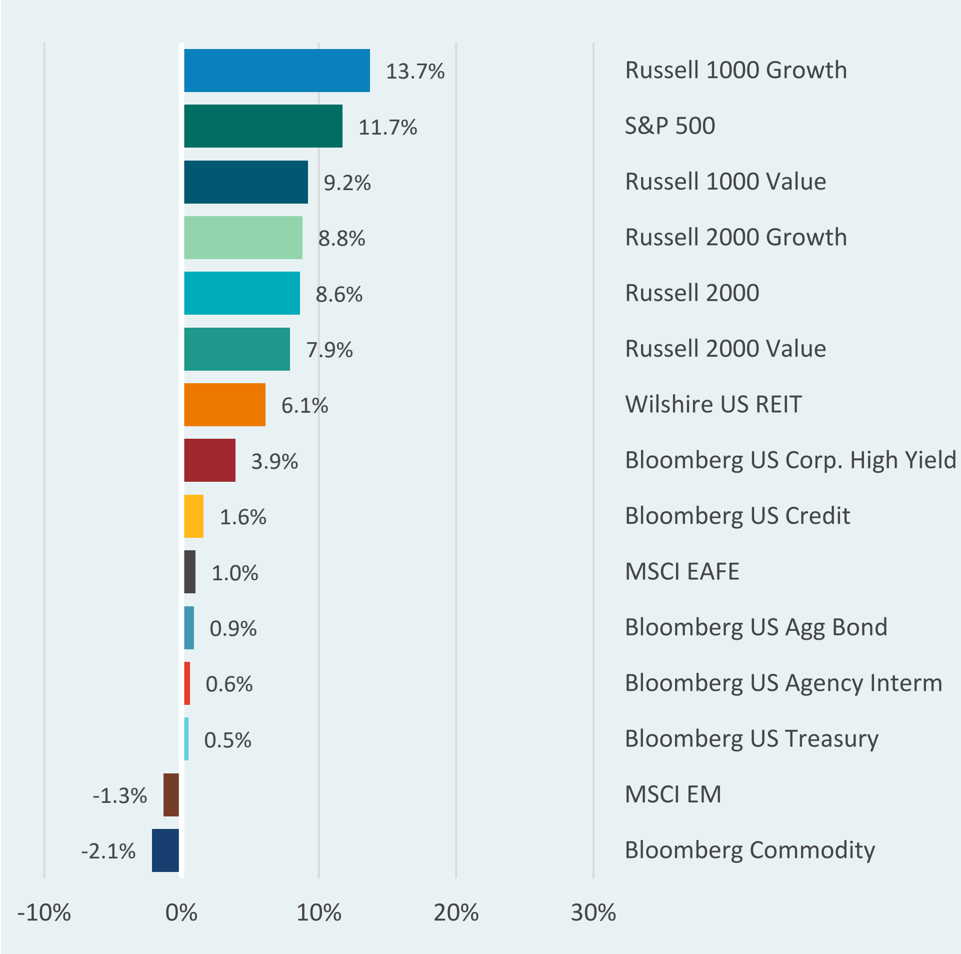
Major asset class returns

SIX MONTHS ENDING SEPTEMBER



Source: Bloomberg, as of 9/30/22

TEN YEARS ENDING SEPTEMBER



Source: Bloomberg, as of 9/30/22. Annualized returns

- The composite fund returned -5.0% for the third quarter of 2022 and ranked in the 79th percentile among public funds greater than $1 billion (median of -4.3%). The fund lagged its policy index return of -4.9% during this time period. Longer term, the five (5.3%), and ten-year (7.3%) returns ranked in the 54th and 48th percentile of large public plans respectively.

- Third quarter results were enhanced by the following factors:

  1. The absolute return portfolio produced strong diversified alpha during the quarter gaining 2.7% as a composite versus -0.2% for the HFRI FoF Composite.

  2. Loomis Sayles lost -3.3% but beat the Bloomberg US Credit BAA by 160 bps. Loomis maintained a shorter-than-benchmark duration throughout the quarter which boosted performance as yields rose. High yield credit and the securitized allocation also helped produce excess returns for the quarter.

- Third quarter results were hindered by the following factors:

  1. TCW trailed the Russell 1000 Growth for a second quarter in a row losing -6.4% versus -3.6% for the index. Relative underperformance was primarily due to negative security selection within the information technology, consumer discretionary, and healthcare sectors.

  2. Mondrian lost -14.2% trailing the MSCI ACWI ex US Value (-10.3%) and ranked in the bottom decile of its peers. An overweight to China hurt relative returns as Chinese markets fell by over 22% during the quarter on lockdown and rising interest rate concerns.

Total Fund
Manager Allocation Analysis (One Quarter)

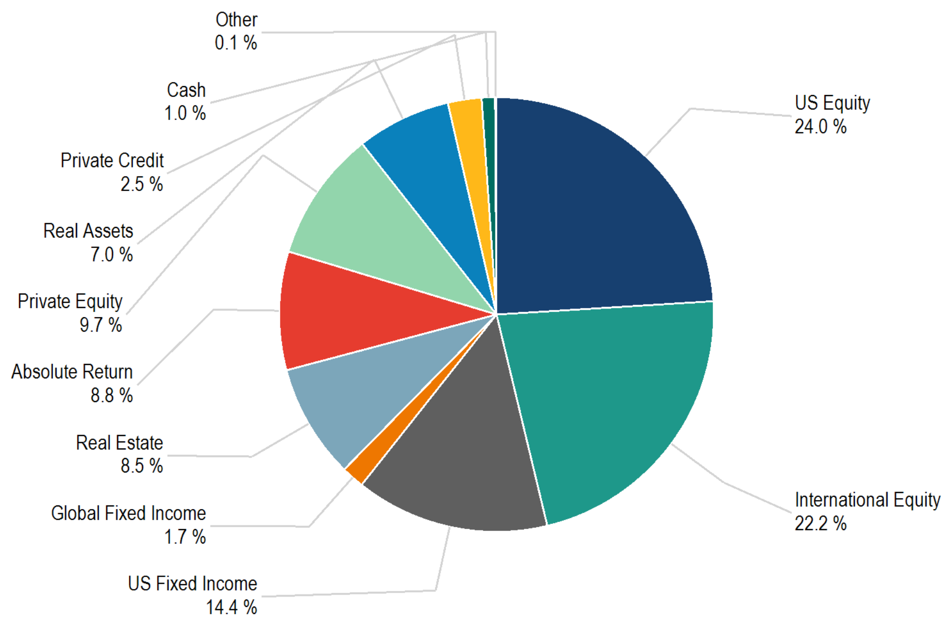
Period Ending: September 30, 2022

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Absolute Return[1]	$767,404,956	$69,831,882	$21,087,557	$858,324,394
Alta	$5,249	$0	$0	$5,249
Applied Research Investments	$23,700	$0	-$1,033	$22,667
AQR	$1,338,587	$0	-$76,329	$1,262,258
Arga Investment Management	$25,763,311	$0	-$2,774,481	$22,988,831
Aristotle	$140,312,108	-$148,258	-$7,383,876	$132,779,973
Baird Advisors	$1,208,410,255	-$205,703	-$54,932,603	$1,153,271,949
Bivium Cash	$240	$0	$1	$241
BlackRock MSCI World ex-US Index Fd A	$648,547,866	$0	-$58,992,278	$589,555,588
BlackRock Russell 1000 Index Fund	$2,027,496,480	-$80,000,000	-$85,041,192	$1,862,455,289
Brandywine	$181,514,668	-$145,339	-$16,202,315	$165,167,013
Capital Group	$540,783,945	-$377,254	-$52,026,429	$488,380,262
Cash Account	$55,581,463	$46,354,372	$231,215	$102,167,050
Denali Advisors	$23,907,879	$0	-$2,741,482	$21,166,397
Dundas Partners	$24,359,787	$0	-$1,975,415	$22,384,373
Global Alpha Capital Management	$9,463,869	$0	-$1,021,185	$8,442,684
Huber	$1,651	$0	$0	$1,651
Kennedy	$139,448,096	-$305,975	-$5,700,290	$133,441,831
Loomis Sayles	$332,135,533	-$70,296,324	-$8,261,751	$253,577,457
Mondrian	$653,520,865	-$620,538	-$92,263,353	$560,636,974
Newton Emerging Mkt	$232,705,104	$0	-$19,684,214	$213,020,890
Next Century-SCG	$16	-$16	$0	$0
OakBrook	$87	$27	$1	$115
Overlay	$11,406,799	$10,000,000	-$10,263,804	$11,142,995
Promethos Capital	$20,705,427	$0	-$1,792,063	$18,913,364
Private Credit[1]	$233,317,144	$5,638,113	$4,582,882	$243,538,139
Private Equity	$999,013,294	$10,747,700	-$58,796,110	$950,964,884
Radin Capital Partners	$9,522,347	$0	-$1,317,244	$8,205,103
Redwood	$5,530,229	$0	-$458,848	$5,071,382
RVX Asset Management	$6,100,099	$0	-$631,083	$5,469,016
Real Assets[1]	$768,925,947	-$47,700,389	-$30,790,447	$690,435,112
Real Estate	$833,543,670	-$6,457,065	$10,151,803	$837,238,409
Sec. Lending	$0	-$159,790	$159,790	$0
TCW	$115,174,734	-$142,133	-$7,229,560	$107,803,041
Templeton	$239,057,307	$0	-$27,858,201	$211,199,105
Intl Transition	$13,898	$0	-$820	$13,078
Willliam Blair Small Cap Growth	$113,841,863	-$246,792	$1,012,665	$114,607,736
Total	**$10,368,878,473**	**-$64,233,482**	**-$510,990,491**	**$9,793,654,498**

1 Preliminary ending market value

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Alta	$5,249	$0	$0	$5,249
Bivium Cash	$240	$0	$1	$241
Huber	$1,651	$0	$0	$1,651
OakBrook	$87	$27	$1	$115
Total	**$7,227**	**$27**	**$2**	**$7,256**

	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Applied Research Investments	$23,700	$0	-$1,033	$22,667
Arga Investment Management	$25,763,311	$0	-$2,774,481	$22,988,831
Denali Advisors	$23,907,879	$0	-$2,741,482	$21,166,397
Dundas Partners	$24,359,787	$0	-$1,975,415	$22,384,373
Global Alpha Capital Management	$9,463,869	$0	-$1,021,185	$8,442,684
Promethos Capital	$20,705,427	$0	-$1,792,063	$18,913,364
Radin Capital Partners	$9,522,347	$0	-$1,317,244	$8,205,103
Redwood	$5,530,229	$0	-$458,848	$5,071,382
RVX Asset Management	$6,100,099	$0	-$631,083	$5,469,016
Total	**$125,376,650**	**$0**	**-$12,712,833**	**$112,663,817**



	Current Balance ($)	Current Allocation (%)	Policy (%)	Difference (%)	Within IPS Range?
US Equity	2,351,095,125	24.0	24.0	0.0	Yes
International Equity	2,176,731,971	22.2	24.0	-1.8	Yes
US Fixed Income	1,406,849,406	14.4	12.0	2.4	Yes
Global Fixed Income	165,167,013	1.7	2.0	-0.3	Yes
Real Estate	837,238,409	8.5	9.0	-0.5	Yes
Absolute Return	858,324,394	8.8	8.0	0.8	Yes
Private Equity	950,964,884	9.7	11.0	-1.3	Yes
Real Assets	690,435,112	7.0	6.0	1.0	Yes
Private Credit	243,538,139	2.5	4.0	-1.5	Yes
Cash	102,167,050	1.0	0.0	1.0	Yes
Other	11,142,995	0.1	0.0	0.1	Yes
Total	**9,793,654,498**	**100.0**	**100.0**		

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Total Fund (Gross)	**-4.97**	**79**	**-13.37**	**56**	**-12.85**	**54**	**5.24**	**42**	**5.47**	**47**	**7.49**	**35**	**7.60**	**32**	**9.18**	**Sep-85**
Total Fund (Net)	**-5.01**	**79**	**-13.43**	**57**	**-12.98**	**55**	**5.08**	**45**	**5.29**	**54**	**7.28**	**43**	**7.34**	**48**	**8.98**	
Policy Index[1]	*-4.90*	*76*	*-13.65*	*62*	*-11.41*	*46*	*5.49*	*39*	*5.65*	*40*	*7.87*	*19*	*7.92*	*11*	*9.47*	*Sep-85*
Allocation Index	*-5.11*	*81*	*-14.44*	*74*	*-12.89*	*55*	*4.95*	*48*	*5.21*	*57*	*7.49*	*35*	*7.51*	*38*	*--*	*Sep-85*
InvMetrics Public DB > $1B Gross Median	*-4.28*		*-12.80*		*-12.27*		*4.86*		*5.41*		*7.11*		*7.32*		*8.13*	*Sep-85*
Total Fund w/o Overlay (Gross)	**-4.89**	**--**	**-13.23**	**--**	**-12.68**	**--**	**5.31**	**--**	**5.51**	**--**	**7.52**	**--**	**7.62**	**--**	**9.18**	**Sep-85**
Total Fund w/o Overlay (Net)	**-4.93**	**--**	**-13.29**	**--**	**-12.81**	**--**	**5.15**	**--**	**5.34**	**--**	**7.31**	**--**	**7.36**	**--**	**8.99**	
US Equity (Gross)	**-4.30**	**33**	**-20.36**	**73**	**-18.22**	**69**	**7.60**	**36**	**8.85**	**18**	**10.85**	**30**	**11.48**	**27**	**11.27**	**Sep-85**
US Equity (Net)	**-4.33**	**35**	**-20.43**	**78**	**-18.34**	**70**	**7.45**	**43**	**8.67**	**25**	**10.62**	**46**	**11.21**	**43**	**--**	
Russell 3000	*-4.46*	*50*	*-20.42*	*77*	*-17.63*	*56*	*7.70*	*33*	*8.62*	*28*	*10.90*	*28*	*11.38*	*33*	*10.84*	*Sep-85*
InvMetrics All DB US Eq Gross Median	*-4.47*		*-19.91*		*-17.42*		*7.28*		*8.20*		*10.55*		*11.07*		*10.26*	*Sep-85*
BlackRock Russell 1000 Index Fund (Gross)	-4.60	42	-20.50	82	-17.20	77	7.97	45	--	--	--	--	--	--	8.79	Apr-18
BlackRock Russell 1000 Index Fund (Net)	-4.61	42	-20.51	82	-17.21	77	7.96	46	--	--	--	--	--	--	8.78	
Russell 1000	*-4.61*	*42*	*-20.51*	*82*	*-17.22*	*77*	*7.94*	*46*	*9.00*	*50*	*11.15*	*47*	*11.60*	*48*	*8.75*	*Apr-18*
Large Cap Active Equity (Gross)	**-5.73**	**--**	**-21.78**	**--**	**-24.94**	**--**	**2.97**	**--**	**5.25**	**--**	**8.29**	**--**	**9.76**	**--**	**7.10**	**Mar-00**
Large Cap Active Equity (Net)	**-5.83**	**--**	**-22.01**	**--**	**-25.32**	**--**	**2.51**	**--**	**4.75**	**--**	**7.81**	**--**	**9.31**	**--**	**6.66**	
Russell 1000	*-4.61*	*--*	*-20.51*	*--*	*-17.22*	*--*	*7.94*	*--*	*9.00*	*--*	*11.15*	*--*	*11.60*	*--*	*6.05*	*Mar-00*
Aristotle (Gross)	-5.27	47	-16.69	59	-16.39	93	--	--	--	--	--	--	--	--	6.76	Oct-20
Aristotle (Net)	-5.37	49	-16.94	65	-16.82	94	--	--	--	--	--	--	--	--	6.29	
Russell 1000 Value	*-5.62*	*55*	*-17.14*	*69*	*-11.36*	*69*	*4.36*	*84*	*5.29*	*80*	*8.15*	*79*	*9.17*	*81*	*10.58*	*Oct-20*
TCW (Gross)	-6.28	91	-27.27	86	-33.34	86	6.56	75	10.29	58	11.12	76	11.80	79	7.42	Jun-99
TCW (Net)	-6.40	92	-27.47	86	-33.67	87	6.09	79	9.79	68	10.67	84	11.39	86	--	
Russell 1000 Growth	*-3.60*	*37*	*-23.77*	*50*	*-22.59*	*41*	*10.67*	*19*	*12.16*	*19*	*13.74*	*16*	*13.70*	*19*	*6.21*	*Jun-99*

Total Fund and asset class composites are ranked against InvestorForce universes. Managers are ranked against eVestment Alliance style universes.
Ranking of 1 is a top ranking and a ranking of 100 is a bottom ranking. The InvestorForce Public DB> $1B Gross universe consists of 46 members with a total market value of $364.5 Billion.
Effective 1/1/2017, only traditional asset class (public equity, public fixed income, public real estate) investment management fees will be included in the gross of fee return calculation.
1. See Policy Index and Benchmark History.

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Small Cap Equity (Gross)	**-1.85**	**--**	**-19.02**	**--**	**-20.33**	**--**	**8.54**	**--**	**8.39**	**--**	**10.21**	**--**	**11.16**	**--**	**12.95**	**Jul-85**
Small Cap Equity (Net)	**-2.07**	**--**	**-19.38**	**--**	**-21.01**	**--**	**7.69**	**--**	**7.48**	**--**	**9.29**	**--**	**10.23**	**--**	**--**	
Russell 2000	*-2.19*	*--*	*-19.01*	*--*	*-23.50*	*--*	*4.29*	*--*	*3.55*	*--*	*7.51*	*--*	*8.55*	*--*	*8.89*	*Jul-85*
Kennedy (Gross)	-4.09	43	-18.81	67	-14.25	53	7.71	33	4.11	57	8.14	52	10.17	33	10.45	Sep-10
Kennedy (Net)	-4.31	47	-19.16	72	-14.96	61	6.88	41	3.24	75	7.25	74	9.26	53	9.57	
Russell 2000 Value	*-4.61*	*50*	*-19.18*	*72*	*-17.69*	*76*	*4.72*	*70*	*2.87*	*81*	*7.42*	*70*	*7.94*	*85*	*8.55*	*Sep-10*
Willliam Blair Small Cap Growth (Gross)	0.89	27	-19.28	38	-26.41	30	--	--	--	--	--	--	--	--	8.07	Oct-19
Willliam Blair Small Cap Growth (Net)	0.67	32	-19.64	43	-27.06	34	--	--	--	--	--	--	--	--	7.27	
Russell 2000 Growth	*0.24*	*36*	*-19.06*	*36*	*-29.27*	*54*	*2.93*	*90*	*3.60*	*96*	*7.12*	*96*	*8.81*	*94*	*2.03*	*Oct-19*
International Equity (Gross)	**-10.80**	**89**	**-22.37**	**71**	**-28.50**	**81**	**-0.88**	**52**	**0.11**	**30**	**4.63**	**20**	**4.48**	**30**	**7.18**	**Dec-90**
International Equity (Net)	**-10.88**	**90**	**-22.47**	**75**	**-28.74**	**83**	**-1.19**	**64**	**-0.21**	**41**	**4.28**	**28**	**4.11**	**44**	**--**	
MSCI ACWI ex USA IMI Gross[1]	*-9.58*	*35*	*-22.33*	*69*	*-25.34*	*40*	*-0.83*	*52*	*-0.32*	*43*	*3.86*	*49*	*3.66*	*63*	*5.46*	*Dec-90*
InvMetrics All DB ex-US Eq Gross Median	*-9.93*		*-22.01*		*-26.10*		*-0.79*		*-0.48*		*3.81*		*3.97*		*5.90*	*Dec-90*
Bivium Intl Equity (Gross)	-10.14	75	-22.69	61	-27.24	62	0.02	58	--	--	--	--	--	--	1.92	Oct-18
Bivium Intl Equity (Net)	-10.23	77	-22.77	63	-28.51	72	-0.86	78	--	--	--	--	--	--	1.18	
MSCI ACWI ex USA Gross	*-9.80*	*65*	*-22.02*	*48*	*-24.79*	*38*	*-1.07*	*83*	*-0.34*	*73*	*3.78*	*71*	*3.48*	*88*	*1.16*	*Oct-18*
BlackRock MSCI World ex-US Index Fd A (Gross)	-9.10	33	-22.24	43	-23.51	29	-0.76	51	--	--	--	--	--	--	0.79	May-19
BlackRock MSCI World ex-US Index Fd A (Net)	-9.10	33	-22.25	43	-23.53	29	-0.78	51	--	--	--	--	--	--	0.78	
MSCI World ex US Gross	*-9.11*	*33*	*-22.24*	*43*	*-23.50*	*29*	*-0.72*	*50*	*0.11*	*40*	*3.73*	*48*	*4.14*	*69*	*0.84*	*May-19*
Capital Group (Gross)	-9.63	83	-23.94	57	-35.41	83	-2.08	79	0.88	58	6.10	41	5.05	66	7.46	Dec-90
Capital Group (Net)	-9.69	83	-23.99	58	-35.50	83	-2.28	80	0.67	63	5.86	43	4.77	73	--	
MSCI ACWI ex USA Gross	*-9.80*	*84*	*-22.02*	*40*	*-24.79*	*16*	*-1.07*	*66*	*-0.34*	*82*	*3.78*	*88*	*3.48*	*99*	*5.44*	*Dec-90*
MSCI ACWI ex USA Growth Gross	*-9.30*	*81*	*-23.45*	*51*	*-30.00*	*46*	*-1.08*	*66*	*0.51*	*68*	*4.44*	*83*	*4.31*	*96*	*--*	*Dec-90*

1. See Policy Index and Benchmark History.

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Mondrian (Gross)	-14.12	96	-22.51	85	-24.22	81	-3.13	96	-2.09	90	2.05	90	2.53	86	5.09	Nov-03
Mondrian (Net)	-14.21	96	-22.66	87	-24.51	84	-3.50	98	-2.48	92	1.66	93	2.15	95	4.77	
MSCI ACWI ex USA Gross	*-9.80*	*17*	*-22.02*	*72*	*-24.79*	*86*	*-1.07*	*71*	*-0.34*	*33*	*3.78*	*45*	*3.48*	*60*	*5.37*	*Nov-03*
MSCI ACWI ex USA Value Gross	*-10.29*	*33*	*-20.75*	*40*	*-19.46*	*27*	*-1.54*	*76*	*-1.51*	*80*	*2.87*	*66*	*2.47*	*87*	*4.98*	*Nov-03*
Newton Emerging Mkt (Gross)	-8.45	34	-17.70	14	-31.45	77	7.90	5	--	--	--	--	--	--	7.91	May-19
Newton Emerging Mkt (Net)	-8.70	37	-17.93	16	-31.73	79	7.51	6	--	--	--	--	--	--	7.55	
MSCI Emerging Markets Gross	*-11.42*	*72*	*-21.46*	*54*	*-27.80*	*54*	*-1.71*	*65*	*-1.44*	*64*	*4.26*	*68*	*1.42*	*82*	*-0.97*	*May-19*
Templeton (Gross)	-11.64	95	-22.95	28	-32.01	50	-2.95	87	-2.12	86	2.44	92	4.13	97	3.36	Apr-11
Templeton (Net)	-11.81	95	-23.22	31	-32.47	51	-3.53	89	-2.73	89	1.80	95	3.43	99	2.69	
MSCI ACWI ex US Small Cap Gross	*-8.25*	*40*	*-24.19*	*46*	*-28.57*	*41*	*0.80*	*55*	*-0.16*	*65*	*4.39*	*71*	*4.83*	*85*	*2.93*	*Apr-11*
MSCI ACWI ex US Small Cap Value GD	*-8.61*	*49*	*-22.46*	*26*	*-23.93*	*18*	*0.43*	*58*	*-0.75*	*69*	*4.22*	*75*	*4.75*	*86*	*2.74*	*Apr-11*
Total Fixed Income (Gross)	**-4.80**	**82**	**-10.77**	**80**	**-16.04**	**81**	**-1.73**	**41**	**0.29**	**51**	**2.08**	**24**	**2.26**	**21**	**6.53**	**Sep-86**
Total Fixed Income (Net)	**-4.84**	**82**	**-10.84**	**81**	**-16.17**	**82**	**-1.90**	**47**	**0.11**	**65**	**1.90**	**30**	**2.06**	**29**	**--**	
Fixed Income Blend[1]	*-5.14*	*83*	*-11.21*	*83*	*-16.72*	*85*	*-3.97*	*85*	*-0.80*	*91*	*0.47*	*91*	*0.61*	*92*	*5.54*	*Sep-86*
InvMetrics All DB Total Fix Inc Gross Median	*-3.65*		*-8.87*		*-13.43*		*-2.05*		*0.31*		*1.43*		*1.58*		*5.94*	*Sep-86*
US Fixed Income (Gross)	**-4.29**	**56**	**-9.39**	**59**	**-14.93**	**66**	**-1.67**	**42**	**0.82**	**35**	**2.11**	**26**	**2.65**	**11**	**6.48**	**Sep-86**
US Fixed Income (Net)	**-4.32**	**56**	**-9.45**	**62**	**-15.04**	**68**	**-1.82**	**47**	**0.67**	**44**	**1.95**	**31**	**2.48**	**15**	**--**	
Bloomberg US Aggregate TR	*-4.75*	*72*	*-9.22*	*54*	*-14.60*	*60*	*-3.26*	*77*	*-0.27*	*81*	*0.54*	*91*	*0.89*	*90*	*5.40*	*Sep-86*
InvMetrics All DB US Fix Inc Gross Median	*-4.14*		*-9.07*		*-13.99*		*-2.11*		*0.53*		*1.45*		*1.61*		*--*	*Sep-86*
Baird Advisors (Gross)	-4.55	55	-9.16	53	-14.79	71	-2.59	39	0.30	40	1.35	18	1.89	10	4.07	Oct-01
Baird Advisors (Net)	-4.56	59	-9.19	56	-14.85	75	-2.66	44	0.22	50	1.27	28	1.81	12	3.98	
Bloomberg US Aggregate TR	*-4.75*	*82*	*-9.22*	*58*	*-14.60*	*63*	*-3.26*	*93*	*-0.27*	*95*	*0.54*	*97*	*0.89*	*96*	*3.25*	*Oct-01*
Loomis Sayles (Gross)	-3.16	11	-10.01	68	-15.27	66	0.20	5	1.89	8	3.60	1	4.11	1	7.08	Dec-00
Loomis Sayles (Net)	-3.28	11	-10.20	75	-15.59	74	-0.13	7	1.56	12	3.27	1	3.77	1	6.73	
Bloomberg US Credit BAA TR	*-4.85*	*90*	*-12.41*	*99*	*-19.05*	*99*	*-3.66*	*98*	*0.13*	*90*	*1.90*	*31*	*1.92*	*46*	*5.05*	*Dec-00*

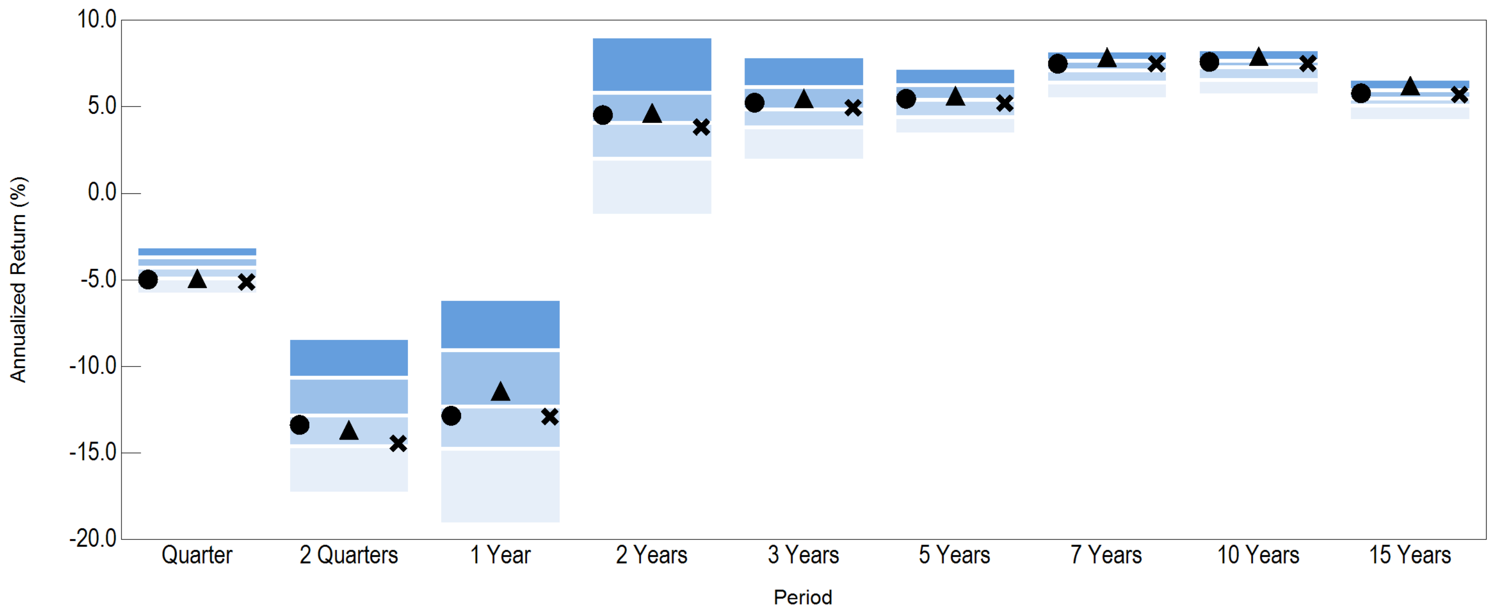
1. See Policy Index and Benchmark History.

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Global Fixed Income (Gross)	**-8.93**	**--**	**-21.38**	**--**	**-24.72**	**--**	**-4.97**	**--**	**-3.15**	**--**	**0.58**	**--**	**0.11**	**--**	**5.30**	**Nov-01**
Global Fixed Income (Net)	**-9.01**	**--**	**-21.51**	**--**	**-24.96**	**--**	**-5.27**	**--**	**-3.44**	**--**	**0.28**	**--**	**-0.19**	**--**	**4.99**	
FTSE WGBI TR	*-7.61*	--	*-15.84*	--	*-22.14*	--	*-7.03*	--	*-3.07*	--	*-1.29*	--	*-1.76*	--	*2.81*	*Nov-01*
Brandywine (Gross)	-8.93	91	-21.38	94	-24.72	90	-4.97	75	-3.15	89	0.58	63	0.11	66	5.30	Nov-01
Brandywine (Net)	-9.01	91	-21.51	94	-24.96	90	-5.27	78	-3.44	89	0.28	68	-0.19	71	4.99	
Bloomberg Global Aggregate TR	*-6.94*	*73*	*-14.63*	*66*	*-20.43*	*68*	*-5.74*	*83*	*-2.32*	*77*	*-0.65*	*83*	*-0.93*	*83*	*3.04*	*Nov-01*
FTSE WGBI TR	*-7.61*	*83*	*-15.84*	*77*	*-22.14*	*81*	*-7.03*	*94*	*-3.07*	*87*	*-1.29*	*92*	*-1.76*	*93*	*2.81*	*Nov-01*
Absolute Return (Gross)*	**2.73**	**8**	**4.82**	**7**	**9.82**	**3**	**6.69**	**19**	**4.15**	**47**	**4.02**	**50**	**4.77**	**47**	**4.15**	**Sep-11**
Absolute Return (Net)*	**2.73**	**8**	**4.82**	**7**	**9.82**	**3**	**6.69**	**19**	**4.15**	**47**	**4.02**	**50**	**4.77**	**47**	**4.15**	
Absolute Return Blend[1]	*-0.17*	*50*	*-4.10*	*42*	*-6.35*	*48*	*4.21*	*49*	*3.11*	*66*	*3.57*	*59*	*3.75*	*68*	*3.80*	*Sep-11*
HFRI Fund of Funds Composite Index	*-0.17*	*50*	*-4.10*	*42*	*-6.35*	*48*	*4.21*	*49*	*3.11*	*66*	*3.19*	*67*	*3.48*	*72*	*3.43*	*Sep-11*
InvMetrics All DB Hedge Funds Gross Median	*-0.24*		*-5.90*		*-6.76*		*4.09*		*3.88*		*3.96*		*4.56*		*4.55*	*Sep-11*
Private Equity (Gross)**	**-5.89**	**--**	**-6.62**	**--**	**1.04**	**--**	**18.40**	**--**	**17.13**	**--**	**14.93**	**--**	**16.31**	**--**	**7.10**	**Nov-08**
Private Equity (Net)**	**-5.89**	**--**	**-6.62**	**--**	**1.04**	**--**	**18.40**	**--**	**17.13**	**--**	**14.93**	**--**	**16.31**	**--**	**7.10**	
Private Equity Blend[1]	*-5.46*	--	*-6.89*	--	*3.47*	--	*20.52*	--	*18.17*	--	*18.61*	--	*17.61*	--	*18.09*	*Nov-08*
Refinitiv C|A Global All Private Equity 1Q Lagged	*-5.46*	--	*-6.89*	--	*3.47*	--	*20.52*	--	*18.17*	--	*15.70*	--	*15.73*	--	*12.48*	*Nov-08*
Real Assets (Gross)***	**-4.37**	**--**	**-10.15**	**--**	**5.70**	**--**	**7.99**	**--**	**3.61**	**--**	**2.61**	**--**	**-2.30**	**--**	**-1.74**	**Sep-11**
Real Assets (Net)***	**-4.40**	**--**	**-10.21**	**--**	**5.56**	**--**	**7.87**	**--**	**3.54**	**--**	**2.56**	**--**	**-2.33**	**--**	**-1.77**	
Real Asset Blend[1]	*-6.55*	--	*-15.95*	--	*0.12*	--	*5.48*	--	*4.44*	--	*5.87*	--	*5.38*	--	*5.35*	*Sep-11*
Private Credit (Gross)****	**1.91**	**--**	**1.92**	**--**	**4.64**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**5.71**	**Oct-19**
Private Credit (Net)****	**1.91**	**--**	**1.92**	**--**	**4.64**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**5.71**	
S&P/LSTA Leveraged Loan Index +1.75%	*1.80*	--	*-2.30*	--	*-0.82*	--	*4.00*	--	*4.78*	--	*5.47*	--	*5.34*	--	*4.22*	*Oct-19*

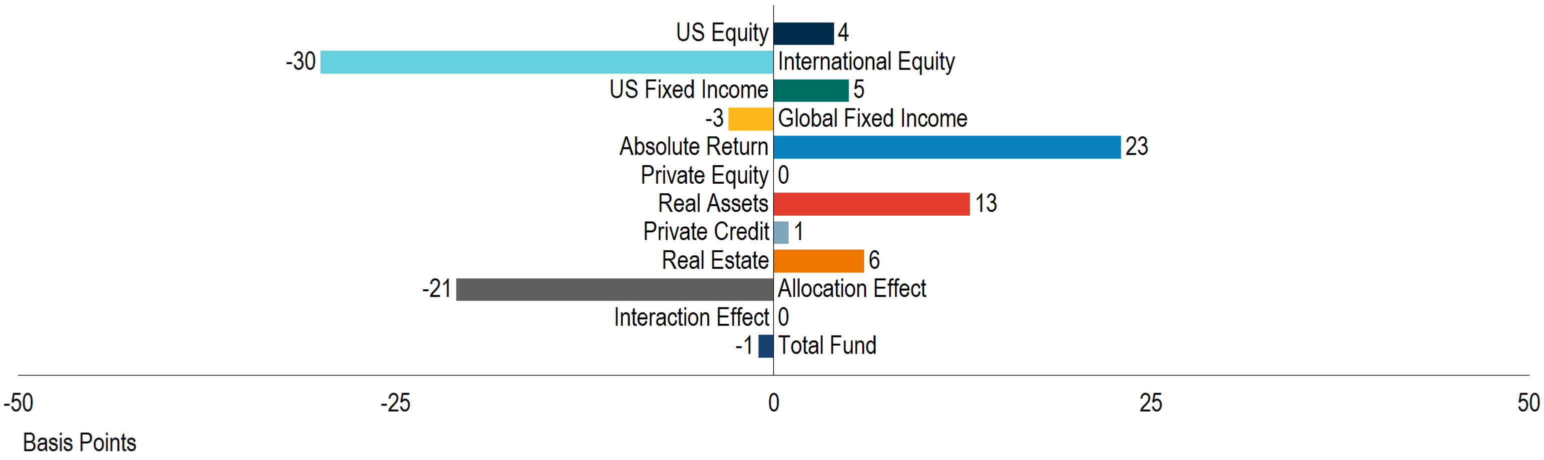
1. See Policy Index and Benchmark History.
** As of 9/30 with the exception of Dyal and AG OWL. Dyal 6/30 market value rolled forward and includes any cash flows from Q3 to derive 9/30 market value. AG OWL is preliminary.*
*** Private Equity is one quarter lagged. 6/30 market values rolled forward and includes any cash flows from Q3 to derive 9/30 market value.*
**** As of 9/30 with the exception of CIM Infrastructure II and Private Real Assets. CIM and Private Real Assets market values rolled forward and includes any cash flows from Q3 to derive 9/30 market value.*
***** As of 9/30 with the exception of ARES Senior DL II. ARES Senior DL II market value rolled forward and includes any cash flows from Q3 to derive 9/30 market value.*

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Cash (Gross)	**0.24**	**--**	**0.35**	**--**	**0.35**	**--**	**0.60**	**--**	**1.01**	**--**	**0.92**	**--**	**0.66**	**--**	**2.94**	**Sep-85**
Cash (Net)	**0.24**	**--**	**0.35**	**--**	**0.35**	**--**	**0.60**	**--**	**1.01**	**--**	**0.92**	**--**	**0.66**	**--**	**2.94**	
91 Day T-Bills	*0.46*	*--*	*0.57*	*--*	*0.62*	*--*	*0.49*	*--*	*1.08*	*--*	*0.90*	*--*	*0.64*	*--*	*3.03*	*Sep-85*
Real Estate (Gross)	**1.22**	**23**	**5.57**	**45**	**20.98**	**37**	**12.52**	**26**	**10.59**	**25**	**10.48**	**19**	**11.69**	**15**	**7.54**	**Mar-86**
Real Estate (Net)	**1.22**	**23**	**5.57**	**45**	**20.98**	**37**	**12.52**	**26**	**10.59**	**25**	**10.31**	**20**	**11.24**	**20**	**6.57**	
Real Estate Blend[1]	*0.52*	*49*	*5.32*	*47*	*22.09*	*29*	*12.37*	*29*	*10.24*	*30*	*9.85*	*29*	*10.91*	*26*	*8.24*	*Mar-86*
NCREIF-ODCE	*0.52*	*49*	*5.32*	*47*	*22.09*	*29*	*12.37*	*29*	*10.24*	*30*	*9.85*	*29*	*10.92*	*25*	*7.69*	*Mar-86*
InvMetrics All DB Real Estate Pub+Priv Gross Median	*0.45*		*4.98*		*19.39*		*11.26*		*9.42*		*9.28*		*10.22*		*--*	*Mar-86*

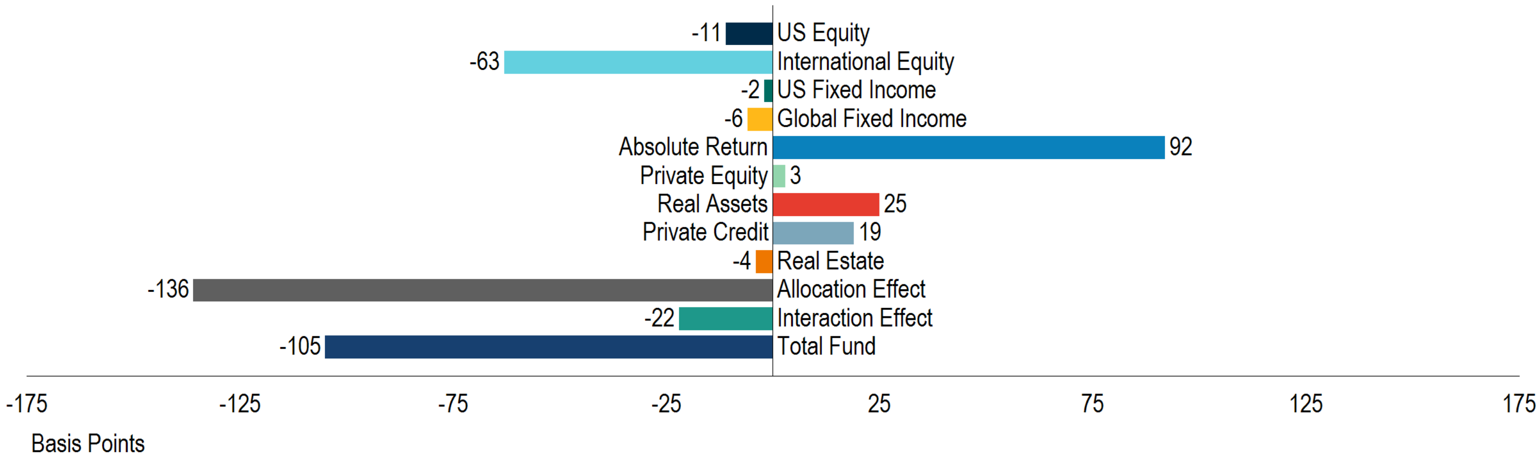
1. See Policy Index and Benchmark History.



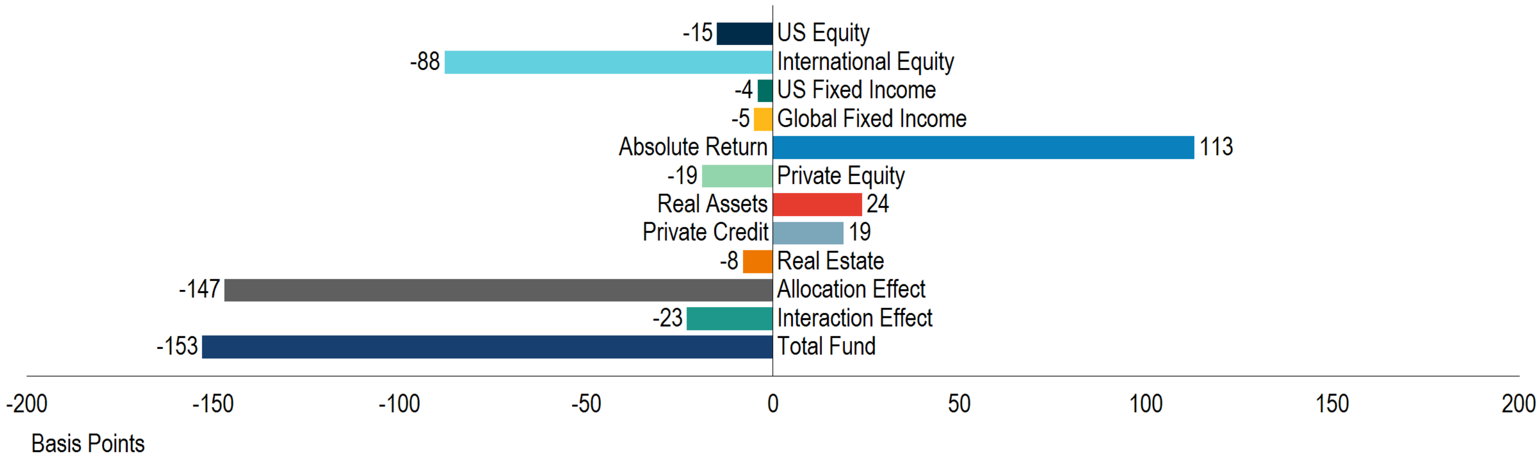
Return (Rank)	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years		15 Years	
5th Percentile	-3.09		-8.37		-6.11		9.04		7.89		7.24		8.22		8.31		6.62	
25th Percentile	-3.67		-10.63		-9.05		5.82		6.17		6.27		7.70		7.69		5.98	
Median	-4.28		-12.80		-12.27		4.08		4.86		5.41		7.11		7.32		5.50	
75th Percentile	-4.90		-14.59		-14.75		2.01		3.84		4.44		6.41		6.57		5.10	
95th Percentile	-5.82		-17.33		-19.11		-1.29		1.91		3.44		5.46		5.69		4.21	
# of Portfolios	75		75		75		74		73		73		72		69		65	
● Total Fund	-4.97	(79)	-13.37	(56)	-12.85	(54)	4.53	(44)	5.24	(42)	5.47	(47)	7.49	(35)	7.60	(32)	5.78	(31)
▲ Policy Index	-4.90	(76)	-13.65	(62)	-11.41	(46)	4.66	(42)	5.49	(39)	5.65	(40)	7.87	(19)	7.92	(11)	6.22	(10)
✖ Allocation Index	-5.11	(81)	-14.44	(74)	-12.89	(55)	3.84	(52)	4.95	(48)	5.21	(57)	7.49	(35)	7.51	(38)	5.70	(38)



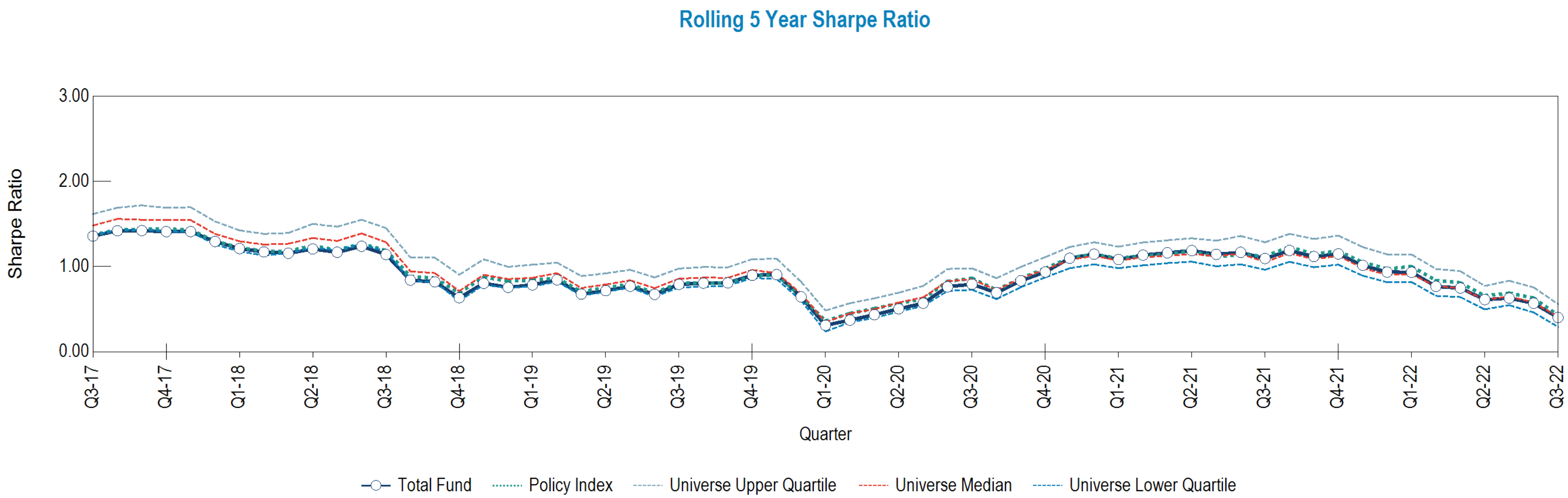
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	-4.30%	-4.46%	0.17%	0.04%	-0.06%	0.00%	-0.01%
International Equity	-10.80%	-9.58%	-1.22%	-0.30%	0.02%	0.00%	-0.28%
US Fixed Income	-4.29%	-4.75%	0.46%	0.05%	-0.01%	0.01%	0.06%
Global Fixed Income	-8.93%	-7.61%	-1.32%	-0.03%	0.01%	0.00%	-0.02%
Absolute Return	2.73%	-0.17%	2.90%	0.23%	0.02%	0.01%	0.26%
Private Equity	-5.89%	-5.46%	-0.42%	0.00%	-0.01%	-0.03%	-0.04%
Real Assets	-4.37%	-6.55%	2.19%	0.13%	-0.02%	0.02%	0.12%
Private Credit	1.91%	1.80%	0.11%	0.01%	-0.11%	-0.01%	-0.10%
Real Estate	1.22%	0.52%	0.70%	0.06%	-0.06%	-0.01%	0.00%
Total	**-4.91%**	**-4.90%**	**-0.01%**	**0.21%**	**-0.21%**	**0.00%**	**-0.01%**

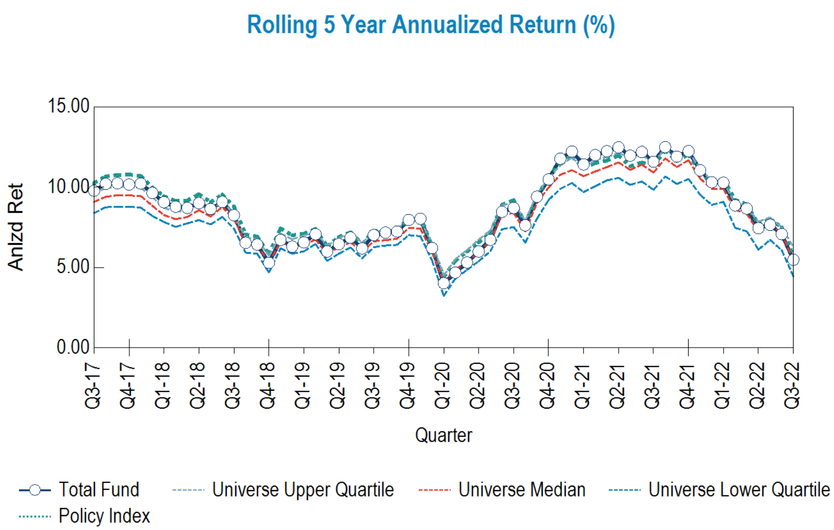


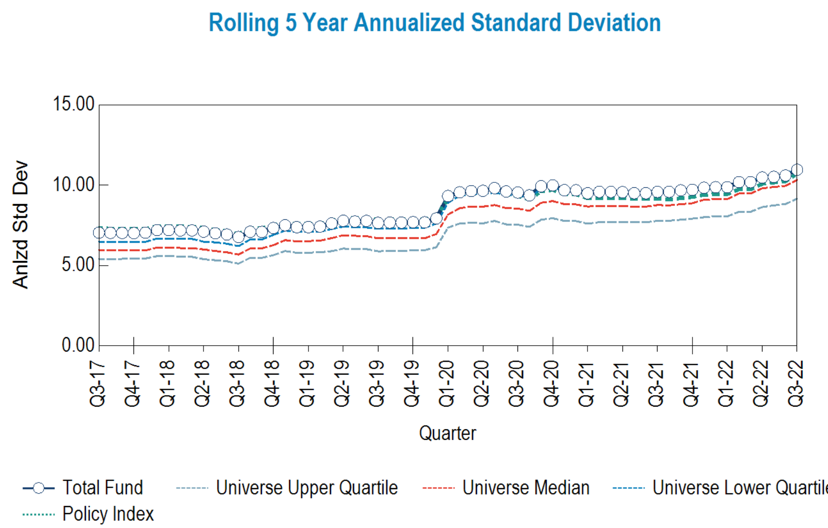
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	-25.04%	-24.62%	-0.42%	-0.11%	-0.34%	-0.02%	-0.46%
International Equity	-28.90%	-26.60%	-2.31%	-0.63%	-0.06%	-0.04%	-0.72%
US Fixed Income	-14.77%	-14.61%	-0.16%	-0.02%	-0.02%	-0.01%	-0.05%
Global Fixed Income	-24.08%	-21.27%	-2.80%	-0.06%	0.01%	0.01%	-0.04%
Absolute Return	6.50%	-6.74%	13.24%	0.92%	-0.01%	-0.09%	0.81%
Private Equity	-2.10%	-1.95%	-0.15%	0.03%	-0.30%	-0.06%	-0.33%
Real Assets	0.21%	-5.11%	5.31%	0.25%	0.04%	0.05%	0.34%
Private Credit	3.31%	-1.98%	5.29%	0.19%	-0.24%	-0.08%	-0.14%
Real Estate	12.62%	13.08%	-0.46%	-0.04%	-0.43%	0.01%	-0.45%
Total	**-16.02%**	**-14.97%**	**-1.05%**	**0.53%**	**-1.36%**	**-0.22%**	**-1.05%**



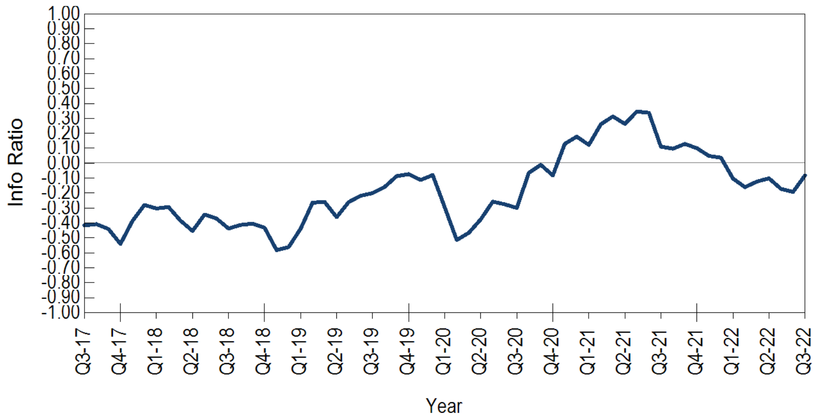
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	-18.22%	-17.63%	-0.59%	-0.15%	-0.21%	-0.02%	-0.38%
International Equity	-28.50%	-25.34%	-3.16%	-0.88%	-0.12%	-0.06%	-1.07%
US Fixed Income	-14.93%	-14.60%	-0.33%	-0.04%	-0.17%	-0.01%	-0.23%
Global Fixed Income	-24.72%	-22.14%	-2.57%	-0.05%	0.01%	0.01%	-0.03%
Absolute Return	9.82%	-6.35%	16.17%	1.13%	0.03%	-0.13%	1.04%
Private Equity	1.04%	3.47%	-2.43%	-0.19%	-0.34%	-0.01%	-0.54%
Real Assets	5.70%	0.12%	5.58%	0.24%	0.05%	0.06%	0.35%
Private Credit	4.64%	-0.82%	5.46%	0.19%	-0.17%	-0.09%	-0.07%
Real Estate	20.98%	22.09%	-1.11%	-0.08%	-0.54%	0.03%	-0.59%
Total	**-12.78%**	**-11.25%**	**-1.53%**	**0.17%**	**-1.47%**	**-0.23%**	**-1.53%**


Rolling 5 Year Sharpe Ratio
Sharpe Ratio
3.00
2.00
1.00
0.00
Q3-17
Q4-17
Q1-18
Q2-18
Q3-18
Q4-18
Q1-19
Q2-19
Q3-19
Q4-19
Q1-20
Q2-20
Q3-20
Q4-20
Q1-21
Q2-21
Q3-21
Q4-21
Q1-22
Q2-22
Q3-22
Quarter
Total Fund
Policy Index
Universe Upper Quartile
Universe Median
Universe Lower Quartile

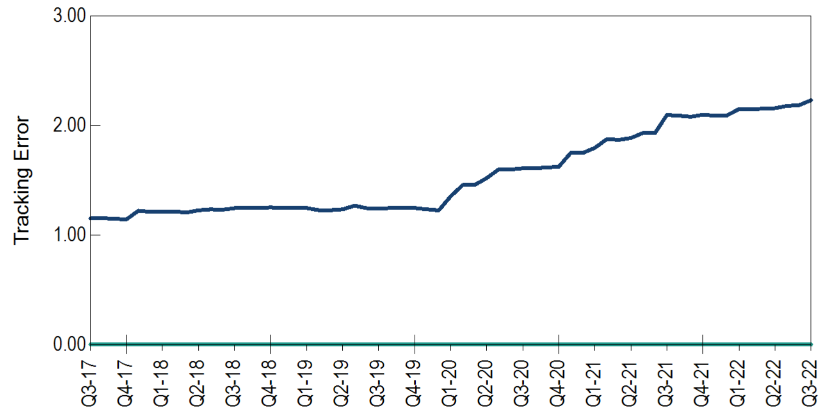

Rolling 5 Year Annualized Return (%)
Anlzd Ret
15.00
10.00
5.00
0.00
Quarter
Total Fund
Universe Upper Quartile
Universe Median
Universe Lower Quartile
Policy Index


Rolling 5 Year Annualized Standard Deviation
Anlzd Std Dev
15.00
10.00
5.00
0.00
Quarter
Total Fund
Universe Upper Quartile
Universe Median
Universe Lower Quartile
Policy Index

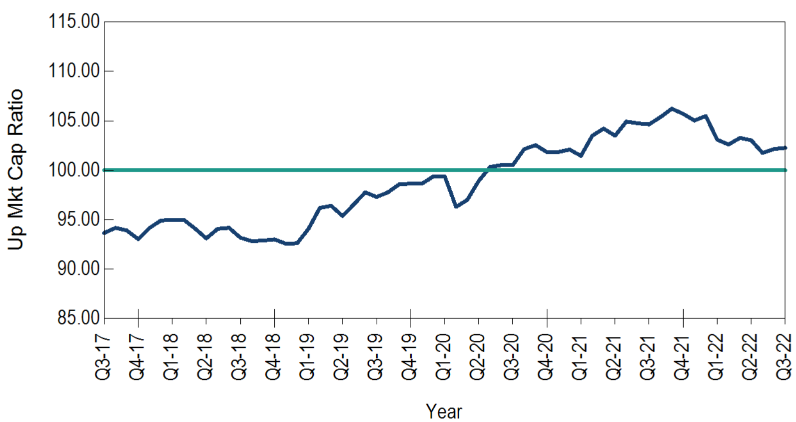
Rolling 5 Year Information Ratio



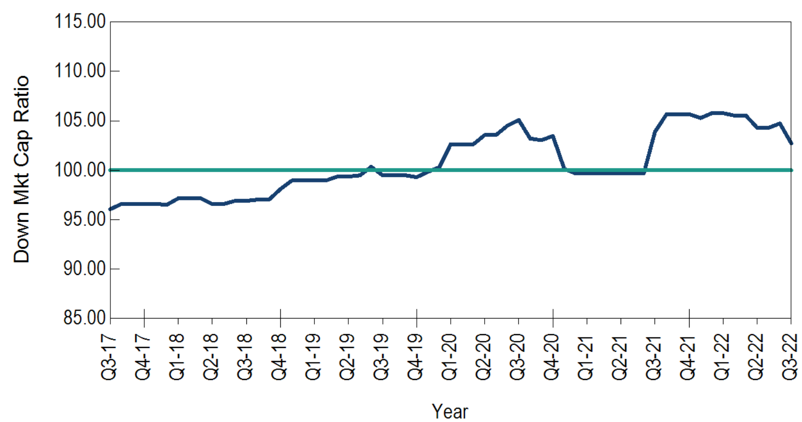
Rolling 5 Year Tracking Error



Rolling 5 Year Up Market Capture Ratio (%)



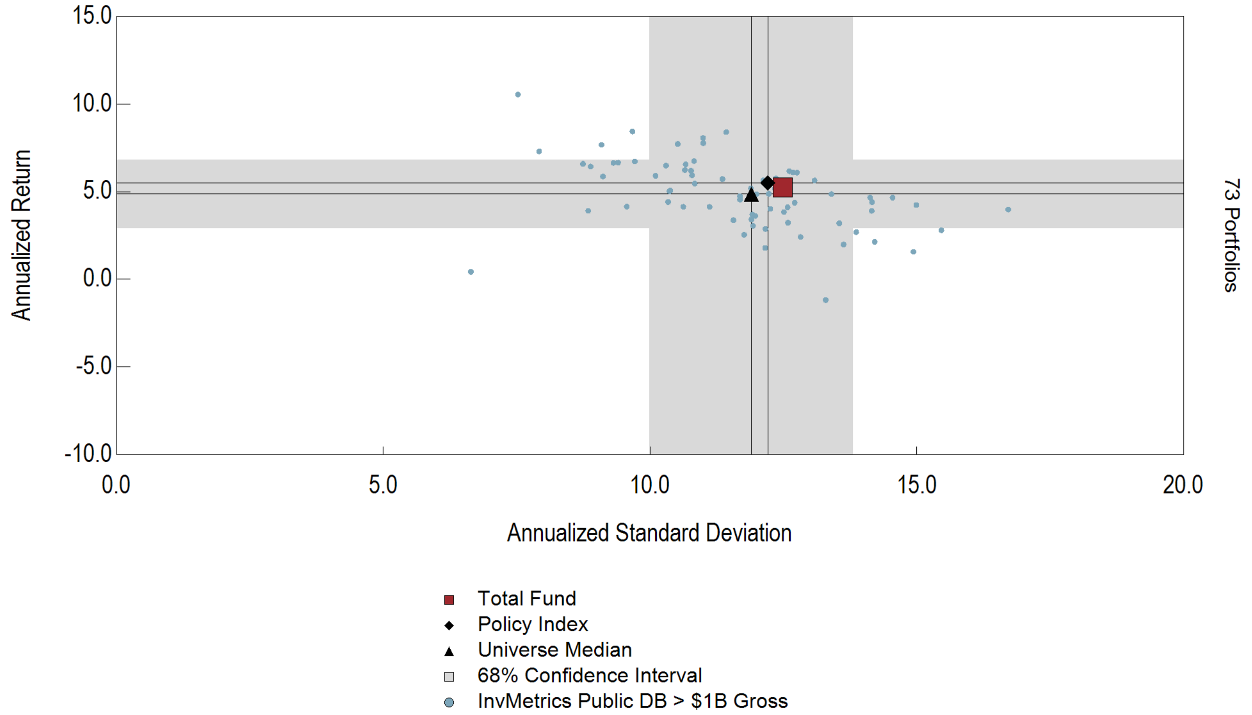
Rolling 5 Year Down Market Capture Ratio (%)



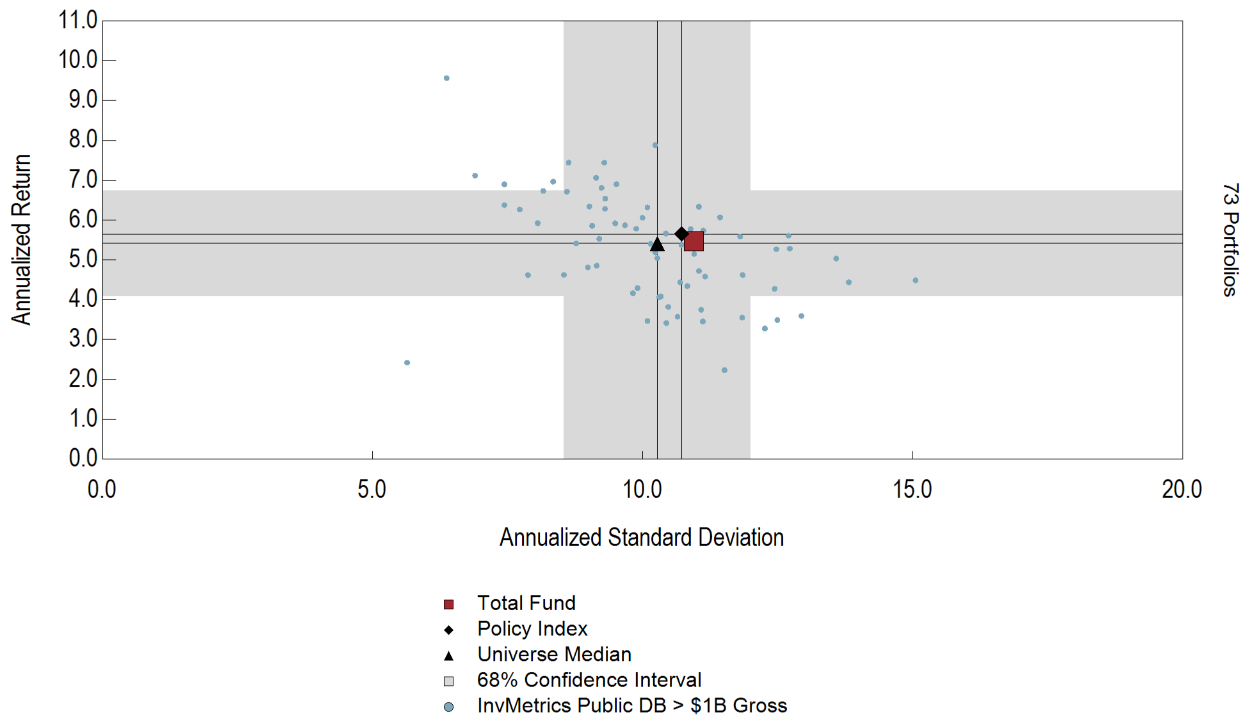
Total Fund

Risk vs. Return (3 Years)

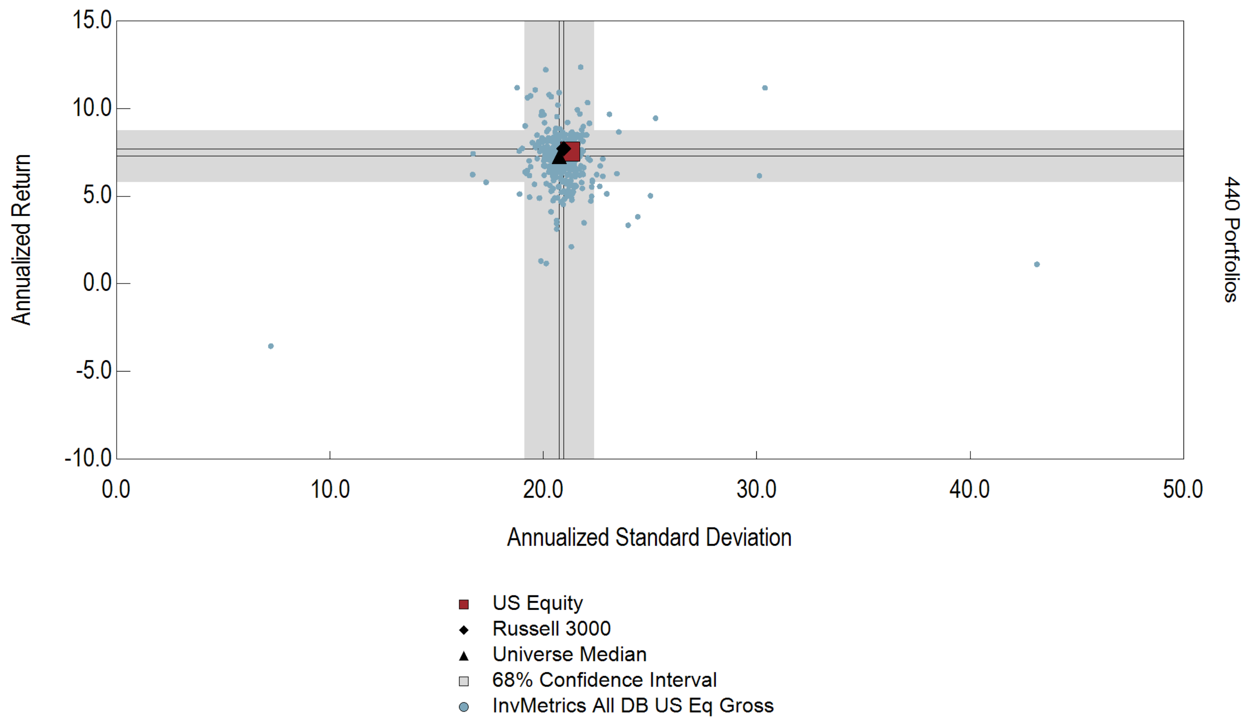
Period Ending: September 30, 2022



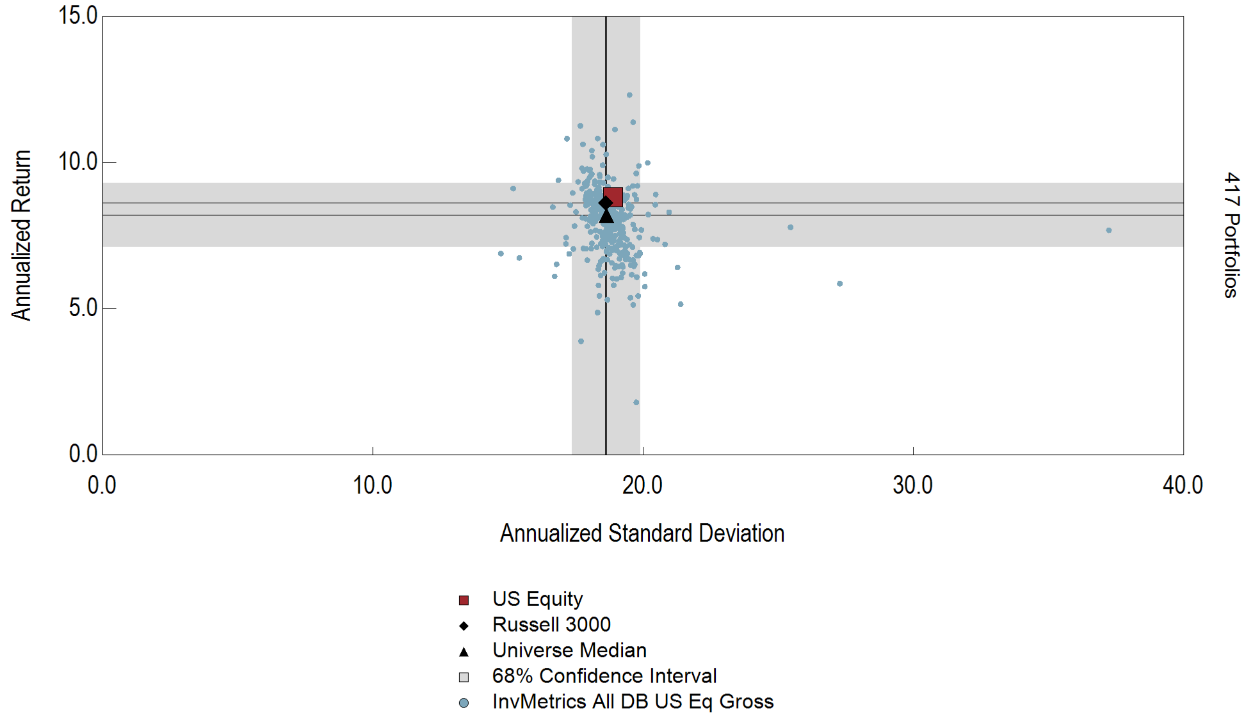
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	5.24%	42	12.48%	67	0.38	48	-0.09	94	2.70%	61
Policy Index	5.49%	39	12.21%	61	0.41	42	--	--	0.00%	1
Allocation Index	4.95%	48	12.72%	77	0.35	57	-0.64	99	0.84%	4
InvMetrics Public DB > $1B Gross Median	4.86%	--	11.90%	--	0.38	--	0.42	--	2.31%	--



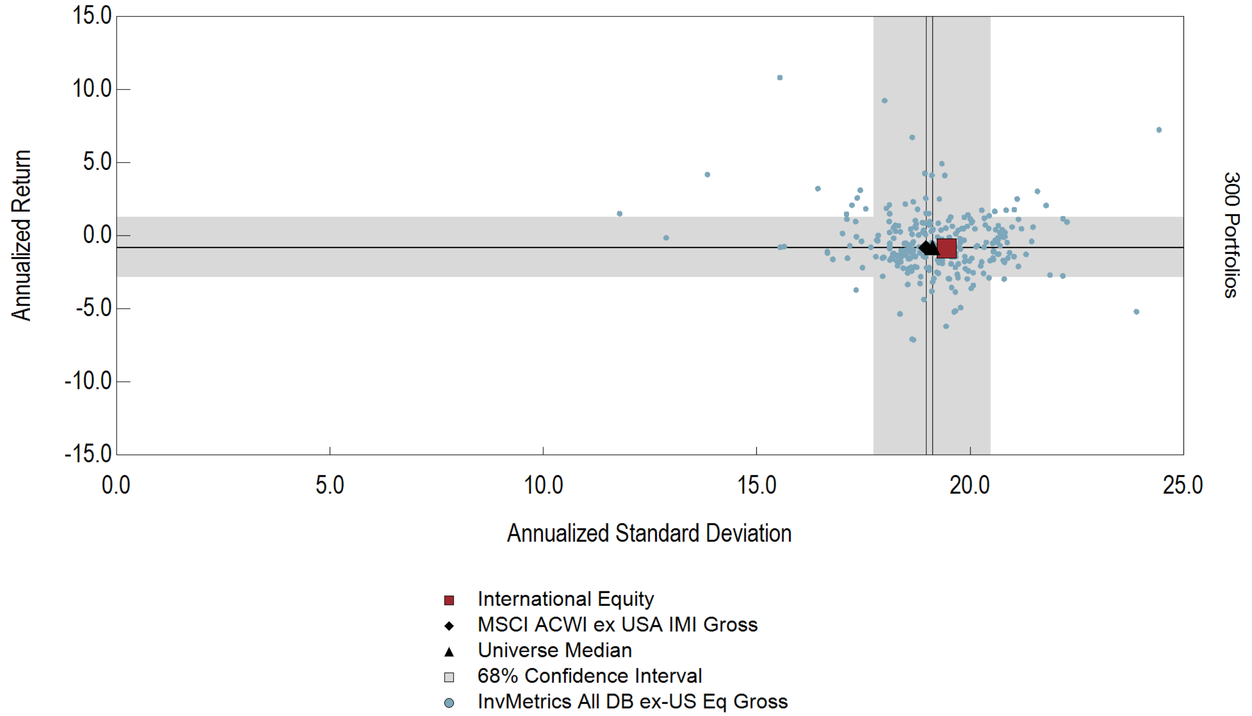
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	5.47%	47	10.95%	68	0.40	54	-0.08	89	2.23%	64
Policy Index	5.65%	40	10.72%	62	0.43	43	--	--	0.00%	1
Allocation Index	5.21%	57	11.19%	80	0.37	62	-0.58	99	0.75%	5
InvMetrics Public DB > $1B Gross Median	5.41%	--	10.27%	--	0.41	--	0.29	--	1.92%	--



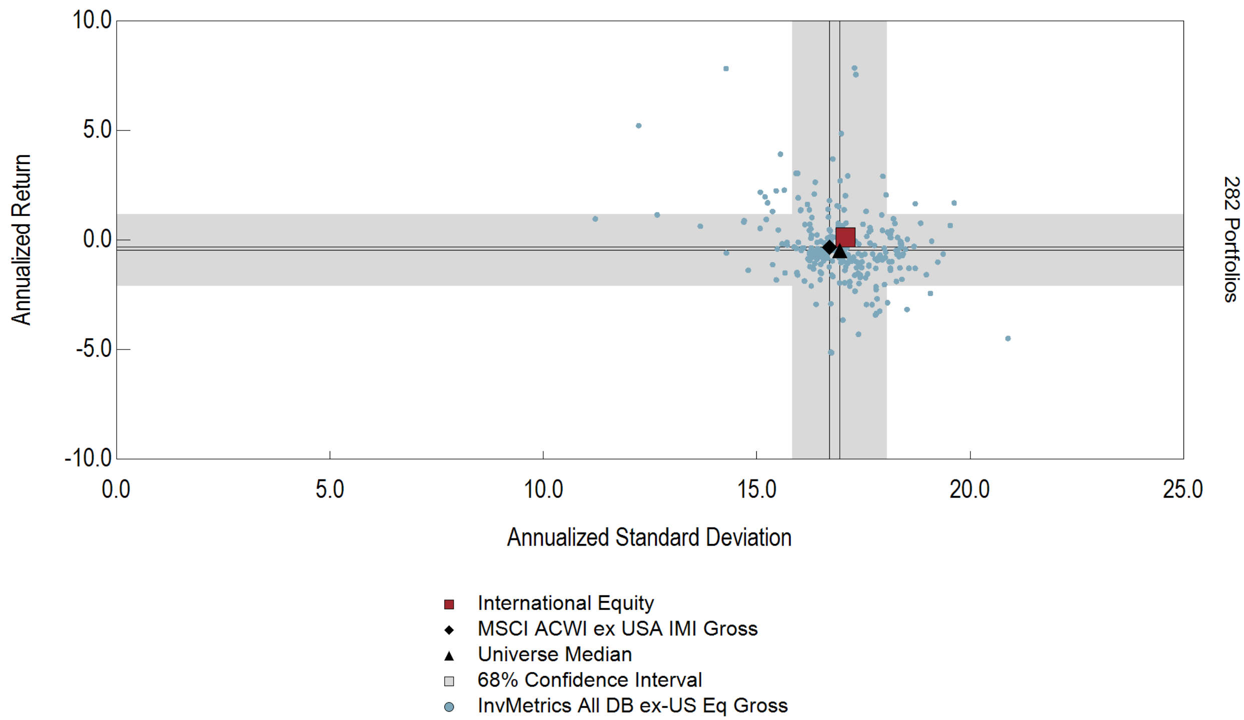
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
US Equity	7.54%	39	21.26%	76	0.33	48	-0.18	41	0.86%	10
Russell 3000	7.70%	33	20.96%	64	0.34	37	--	--	0.00%	1
InvMetrics All DB US Eq Gross Median	7.28%	--	20.74%	--	0.33	--	-0.27	--	2.49%	--



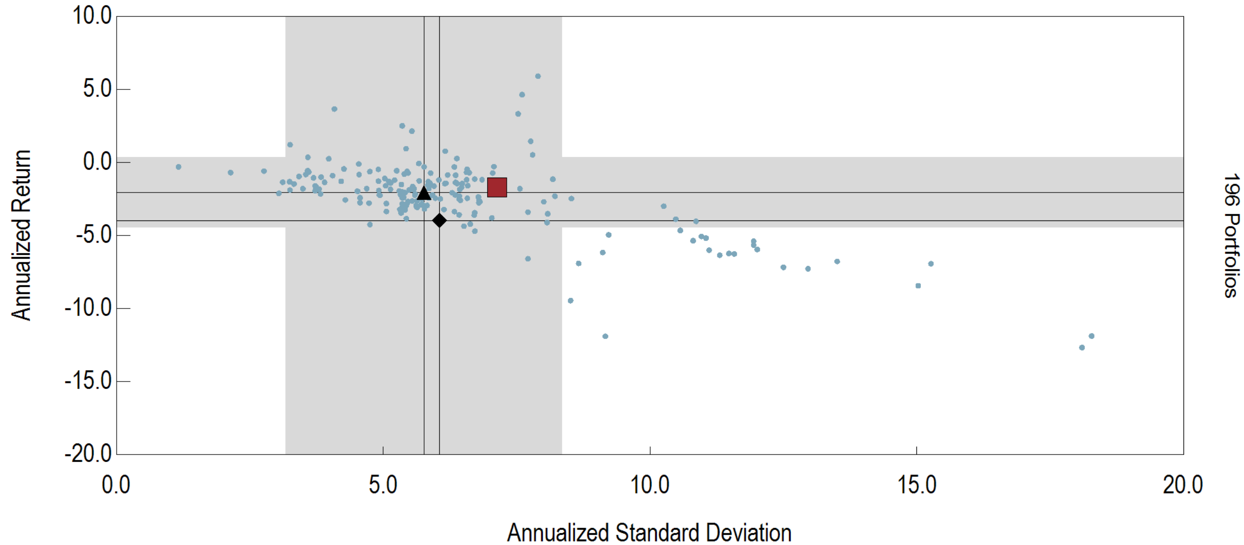
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
US Equity	8.81%	20	18.89%	66	0.41	26	0.20	10	1.00%	11
Russell 3000	8.62%	28	18.62%	48	0.40	29	--	--	0.00%	1
InvMetrics All DB US Eq Gross Median	8.20%	--	18.64%	--	0.38	--	-0.34	--	2.18%	--



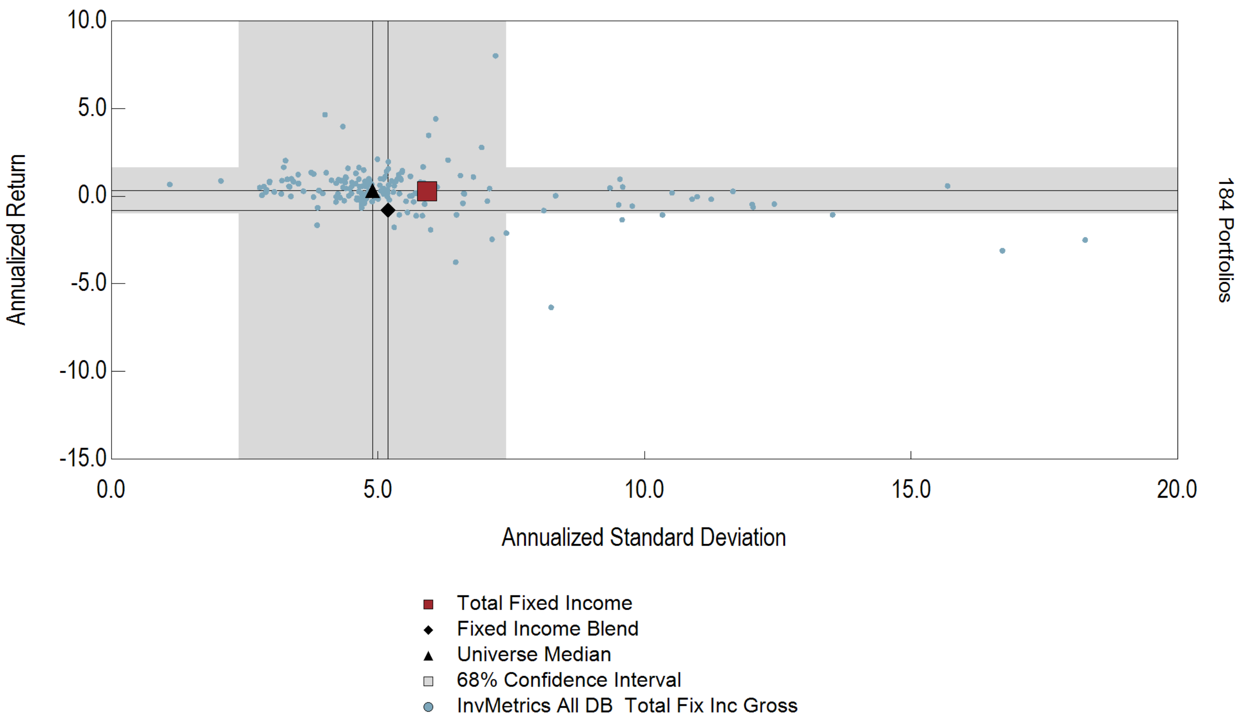
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
International Equity	-0.88%	52	19.45%	62	-0.07	51	-0.03	71	2.02%	9
MSCI ACWI ex USA IMI Gross	-0.83%	52	18.97%	44	-0.07	51	--	--	0.00%	1
InvMetrics All DB ex-US Eq Gross Median	-0.79%	--	19.11%	--	-0.07	--	0.15	--	3.27%	--



	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
International Equity	0.11%	30	17.08%	58	-0.06	30	0.24	24	1.79%	11
MSCI ACWI ex USA IMI Gross	-0.32%	43	16.70%	39	-0.08	44	--	--	0.00%	1
InvMetrics All DB ex-US Eq Gross Median	-0.48%	--	16.95%	--	-0.09	--	0.03	--	2.90%	--

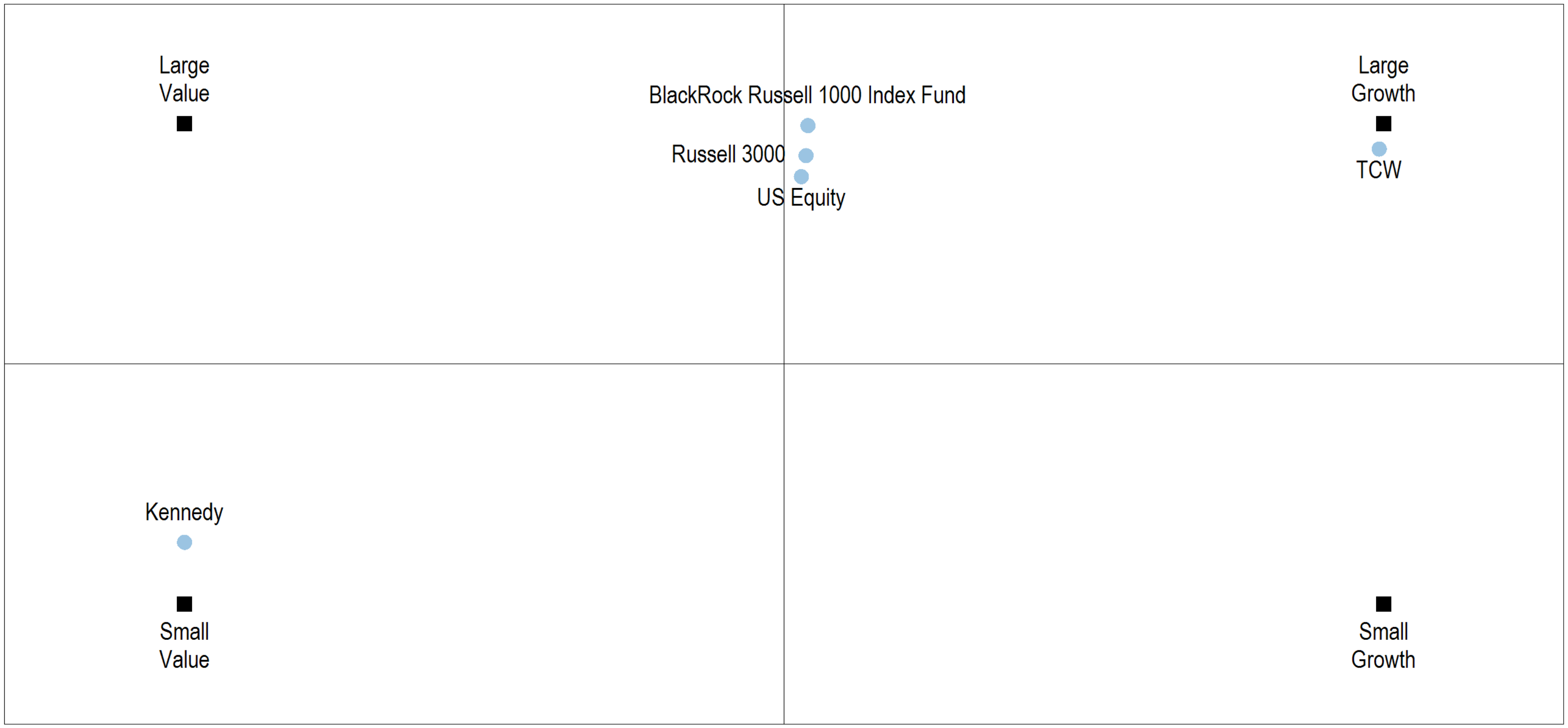


	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fixed Income	-1.73%	41	7.13%	80	-0.31	25	0.92	16	2.44%	51
Fixed Income Blend	-3.97%	85	6.05%	58	-0.74	95	--	--	0.00%	1
InvMetrics All DB Total Fix Inc Gross Median	-2.05%	--	5.76%	--	-0.47	--	0.47	--	2.43%	--

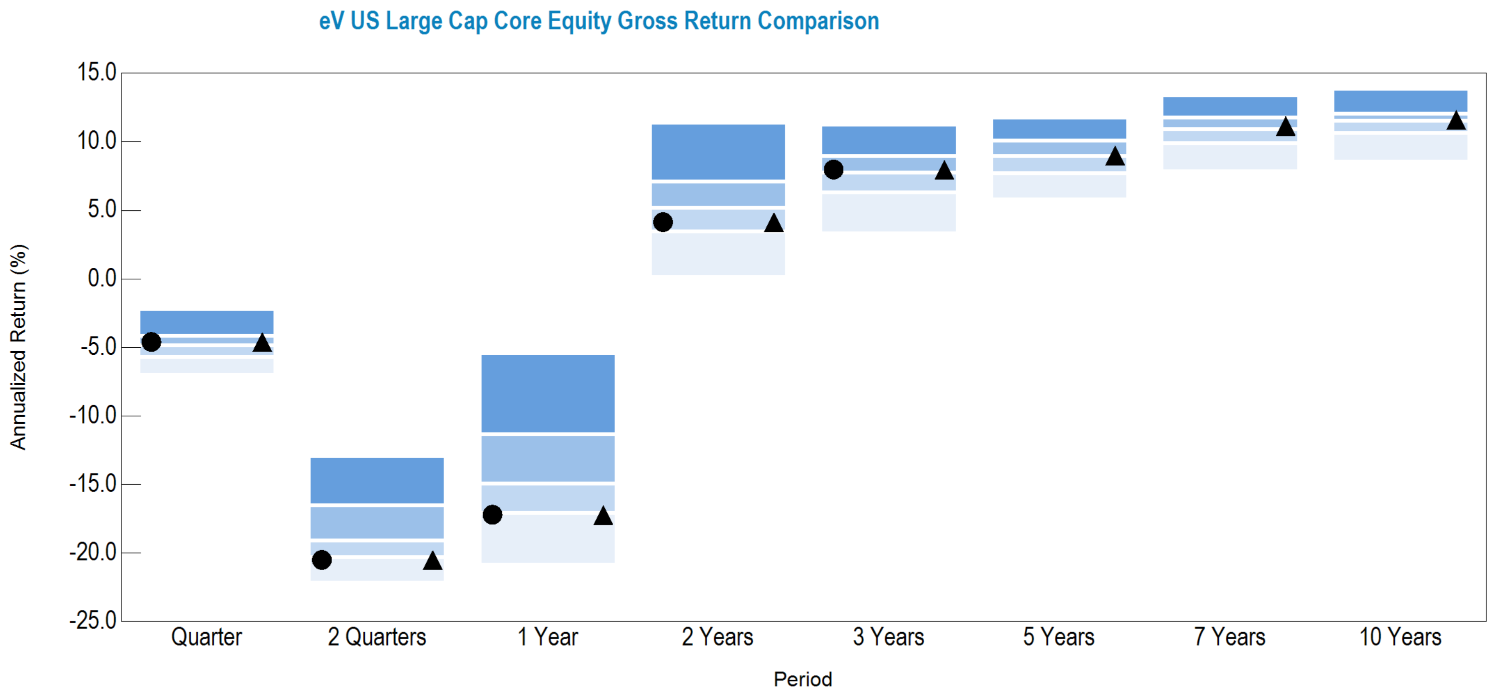


	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fixed Income	0.29%	51	5.91%	79	-0.13	49	0.49	29	2.22%	56
Fixed Income Blend	-0.80%	91	5.19%	62	-0.36	93	--	--	0.00%	1
InvMetrics All DB Total Fix Inc Gross Median	0.31%	--	4.90%	--	-0.14	--	0.32	--	2.09%	--

US Effective Style Map



	US Equity	BlackRock Russell 1000 Index Fund	TCW	Kennedy	Russell 3000
Risk Free	0.00	0.00	0.01	0.00	0.00
Large Growth	0.47	0.52	0.94	0.00	0.49
Large Value	0.42	0.48	0.00	0.13	0.45
Small Growth	0.04	0.00	0.05	0.00	0.03
Small Value	0.07	0.00	0.00	0.87	0.04



	Return (Rank)															
5th Percentile	-2.21		-12.94		-5.43		11.36		11.21		11.76		13.36		13.84	
25th Percentile	-4.14		-16.48		-11.30		7.14		8.98		10.09		11.80		12.06	
Median	-4.81		-19.04		-14.91		5.19		7.77		8.98		10.95		11.56	
75th Percentile	-5.65		-20.27		-17.04		3.47		6.31		7.73		9.92		10.67	
95th Percentile	-6.95		-22.13		-20.85		0.19		3.33		5.81		7.89		8.56	
# of Portfolios	333		333		333		330		324		310		282		243	
● BlackRock Russell 1000 Index Fund	-4.60	(42)	-20.50	(82)	-17.20	(77)	4.14	(64)	7.97	(45)	--	(--)	--	(--)	--	(--)
▲ Russell 1000	-4.61	(42)	-20.51	(82)	-17.22	(77)	4.12	(65)	7.94	(46)	9.00	(50)	11.15	(47)	11.60	(48)

Characteristics

	Portfolio	Russell 1000
Number of Holdings	1,017	1,016
Weighted Avg. Market Cap. ($B)	425.1	425.7
Median Market Cap. ($B)	12.4	12.4
Price To Earnings	17.8	18.0
Price To Book	3.7	3.7
Price To Sales	1.9	1.9
Return on Equity (%)	28.6	28.6
Yield (%)	1.8	1.8
Beta	1.0	1.0

Top Holdings

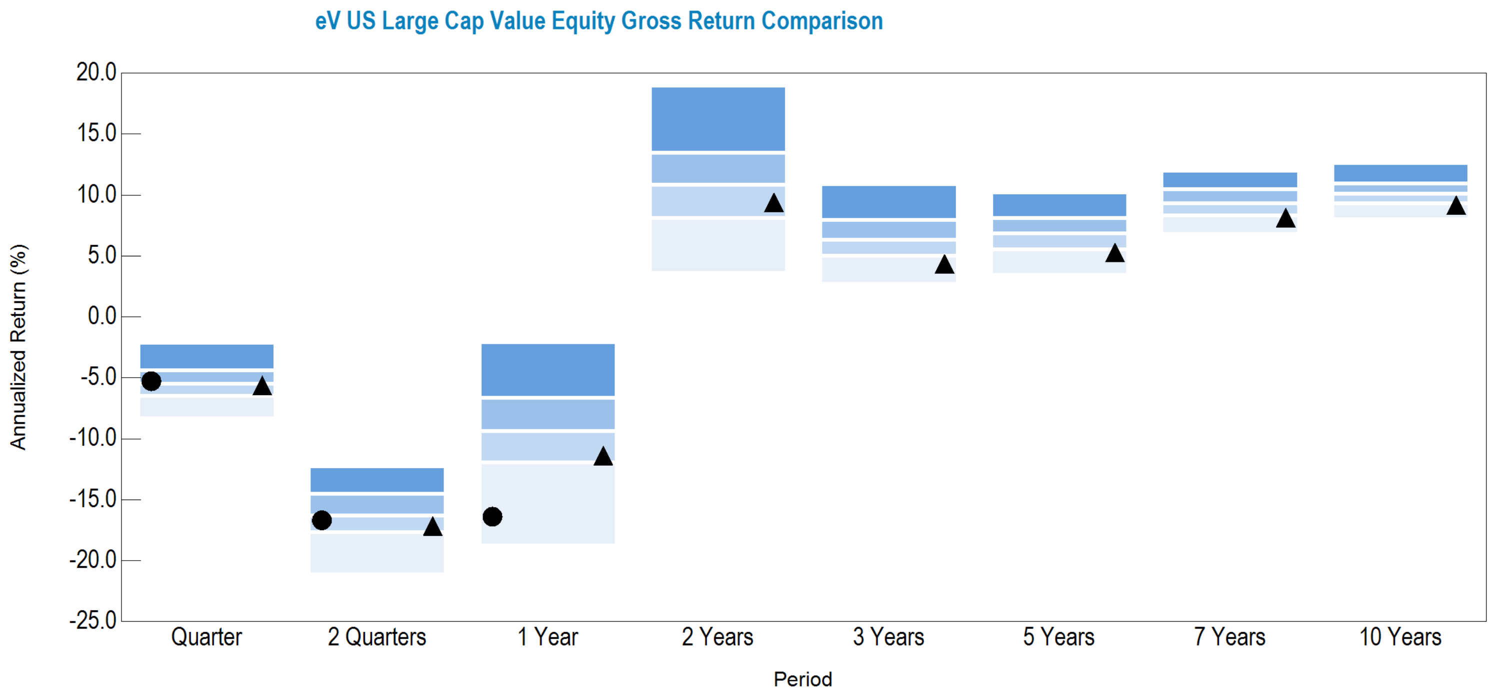
APPLE INC	6.3%
MICROSOFT CORP	5.2%
AMAZON.COM INC	3.0%
TESLA INC	2.0%
ALPHABET INC	1.7%
ALPHABET INC	1.6%
BERKSHIRE HATHAWAY INC	1.4%
UNITEDHEALTH GROUP INC	1.4%
JOHNSON & JOHNSON	1.3%
EXXON MOBIL CORP	1.1%

Best Performers

	Return %
SIGNIFY HEALTH INC CL A CL A (SGFY)	111.2%
FIRST SOLAR INC (FSLR)	94.1%
WOLFSPEED INC (WOLF)	62.9%
PENUMBRA INC (PEN)	52.3%
OAK STREET HEALTH INC (OSH)	49.1%
SAREPTA THERAPEUTICS INC (SRPT)	47.5%
TRADE DESK INC (THE) (TTD)	42.6%
NUTANIX INC (NTNX)	42.4%
ENPHASE ENERGY INC (ENPH)	42.1%
DICK'S SPORTING GOODS INC. (DKS)	39.4%

Worst Performers

	Return %
SOTERA HEALTH CO (SHC)	-65.2%
NOVAVAX INC (NVAX)	-64.6%
SPECTRUM BRANDS HOLDINGS INC (SPB)	-52.1%
WeWork Inc (WE)	-47.2%
SCOTTS MIRACLE-GRO CO (THE) (SMG)	-45.4%
APPLOVIN CORP	-43.4%
AZENTA INC (AZTA)	-40.6%
NCR CORP (NCR)	-38.9%
ENHABIT INC COM	-38.9%
HAYWARD HOLDINGS INC	-38.4%



	Return (Rank)															
5th Percentile	-2.17		-12.27		-2.08		18.98		10.87		10.20		11.97		12.63	
25th Percentile	-4.37		-14.46		-6.61		13.48		8.00		8.14		10.49		10.96	
Median	-5.44		-16.24		-9.35		10.89		6.36		6.90		9.37		10.14	
75th Percentile	-6.44		-17.63		-11.92		8.13		5.05		5.55		8.37		9.37	
95th Percentile	-8.27		-21.11		-18.75		3.61		2.71		3.48		6.85		8.06	
# of Portfolios	340		340		340		335		330		319		305		290	
● **Aristotle**	-5.27	(47)	-16.69	(59)	-16.39	(93)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)
▲ **Russell 1000 Value**	-5.62	(55)	-17.14	(69)	-11.36	(69)	9.39	(64)	4.36	(84)	5.29	(80)	8.15	(79)	9.17	(81)

Characteristics

	Portfolio	Russell 1000 Value
Number of Holdings	43	855
Weighted Avg. Market Cap. ($B)	137.2	135.4
Median Market Cap. ($B)	39.6	11.5
Price To Earnings	15.8	14.1
Price To Book	3.1	2.3
Price To Sales	2.4	1.6
Return on Equity (%)	25.9	17.0
Yield (%)	2.2	2.5
Beta		1.0

Top Holdings

MICROSOFT CORP	4.2%
CORTEVA INC	4.2%
DANAHER CORP	3.5%
COTERRA ENERGY INC	2.9%
AMGEN INC	2.9%
AMERIPRISE FINANCIAL INC	2.9%
XCEL ENERGY INC.	2.8%
MICROCHIP TECHNOLOGY INC	2.7%
COCA-COLA CO (THE)	2.7%
LENNAR CORP	2.7%

Best Performers

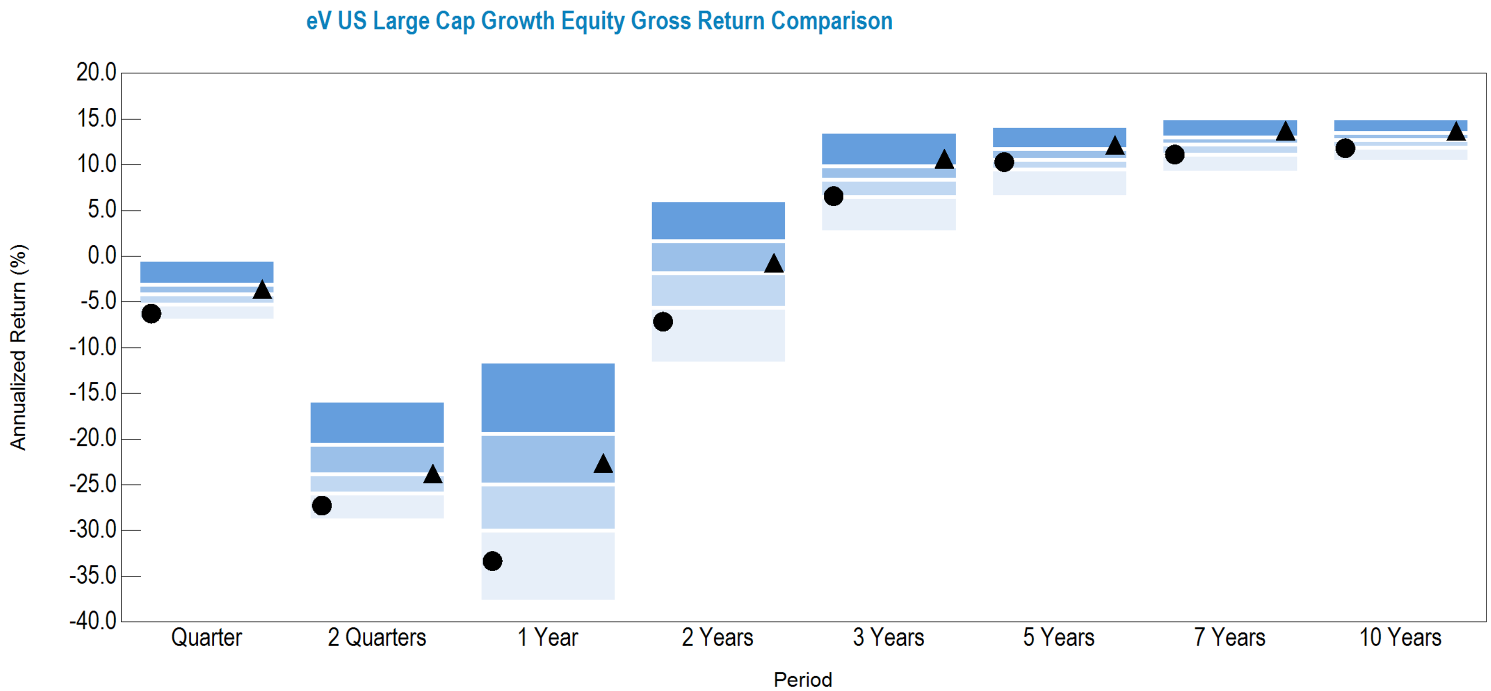
	Return %
PAYPAL HOLDINGS INC (PYPL)	23.2%
CULLEN/FROST BANKERS INC (CFR)	14.3%
XYLEM INC (XYL)	12.1%
AUTODESK INC (ADSK)	8.6%
MARTIN MARIETTA MATERIALS INC. (MLM)	7.8%
AMERIPRISE FINANCIAL INC (AMP)	6.5%
RPM INTERNATIONAL INC (RPM)	6.4%
LENNAR CORP (LEN)	6.2%
CORTEVA INC (CTVA)	5.8%
MICROCHIP TECHNOLOGY INC (MCHP)	5.5%

Worst Performers

	Return %
ELANCO ANIMAL HEALTH INC (ELAN)	-36.8%
ADOBE INC (ADBE)	-24.8%
CINCINNATI FINANCIAL CORP (CINF)	-24.2%
TYSON FOODS INC. (TSN)	-22.9%
SONY GROUP CORPORATION (SONY)	-21.7%
ALCON INC (ALC)	-16.8%
CIE GENERALE DES ETABLISSEMENTS MICHELIN SA, CLERMONT-FERRAND (MGDDY)	-16.5%
MITSUBISHI UFJ FINANCIAL GROUP (MUFG)	-15.7%
SUN COMMUNITIES INC. (SUI)	-14.5%
OSHKOSH CORP (OSK)	-14.1%

Aristotle Performance Attribution vs. Russell 1000 Value

	Attribution Effects					Returns		Sector Weights	
	Total Effects		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	-0.12%		0.03%	-0.14%	-0.01%	1.85%	1.79%	4.69%	6.48%
Materials	1.03%		0.48%	-0.09%	0.64%	4.00%	-7.79%	9.68%	4.28%
Industrials	0.26%		0.25%	0.00%	0.00%	-1.93%	-4.55%	10.16%	10.02%
Consumer Discretionary	-0.52%		-0.47%	0.05%	-0.10%	-11.23%	-3.16%	7.07%	5.53%
Consumer Staples	-0.51%		-0.40%	-0.02%	-0.09%	-11.63%	-6.23%	9.21%	7.32%
Health Care	-0.11%		-0.22%	0.07%	0.04%	-7.16%	-5.67%	11.34%	17.44%
Financials	-0.42%		-0.40%	-0.08%	0.05%	-5.35%	-3.36%	17.07%	19.75%
Information Technology	0.14%		0.20%	-0.23%	0.17%	-6.36%	-8.20%	17.52%	9.14%
Communication Services	0.65%		--	0.65%	--	--	-13.44%	0.00%	8.86%
Utilities	-0.17%		-0.19%	0.00%	0.02%	-8.81%	-5.71%	5.48%	6.03%
Real Estate	-0.08%		-0.13%	0.05%	0.00%	-13.00%	-10.52%	5.08%	5.15%
Cash	0.15%		0.00%	0.15%	0.00%	0.46%	--	2.69%	0.00%
Portfolio	**0.30%**	**=**	**-0.86%**	**+ 0.43%**	**+ 0.74%**	**-5.49%**	**-5.78%**	**100.00%**	**100.00%**



	Return (Rank)															
5th Percentile	-0.43		-15.83		-11.54		6.06		13.58		14.22		15.03		15.07	
25th Percentile	-3.07		-20.57		-19.37		1.71		9.87		11.75		13.03		13.52	
Median	-4.15		-23.78		-24.90		-1.80		8.40		10.59		12.22		12.71	
75th Percentile	-5.28		-25.89		-29.97		-5.61		6.53		9.51		11.15		11.92	
95th Percentile	-6.98		-28.84		-37.73		-11.66		2.63		6.52		9.14		10.37	
# of Portfolios	259		259		259		257		253		241		222		207	
● TCW	-6.28	(91)	-27.27	(86)	-33.34	(86)	-7.16	(83)	6.56	(75)	10.29	(58)	11.12	(76)	11.80	(79)
▲ Russell 1000 Growth	-3.60	(37)	-23.77	(50)	-22.59	(41)	-0.72	(43)	10.67	(19)	12.16	(19)	13.74	(16)	13.70	(19)

Characteristics

	Portfolio	Russell 1000 Growth
Number of Holdings	32	518
Weighted Avg. Market Cap. ($B)	348.2	708.7
Median Market Cap. ($B)	100.9	14.7
Price To Earnings	36.6	25.0
Price To Book	7.2	9.1
Price To Sales	3.6	2.6
Return on Equity (%)	32.5	44.2
Yield (%)	0.6	1.1
Beta	1.0	1.0

Top Holdings

ALPHABET INC	7.2%
AMAZON.COM INC	6.7%
SERVICENOW INC	5.6%
VISA INC	5.1%
AMERICAN TOWER CORP	4.7%
MICROSOFT CORP	4.6%
S&P GLOBAL INC	4.4%
NVIDIA CORPORATION	4.1%
COSTCO WHOLESALE CORP	3.7%
SALESFORCE INC	3.6%

Best Performers

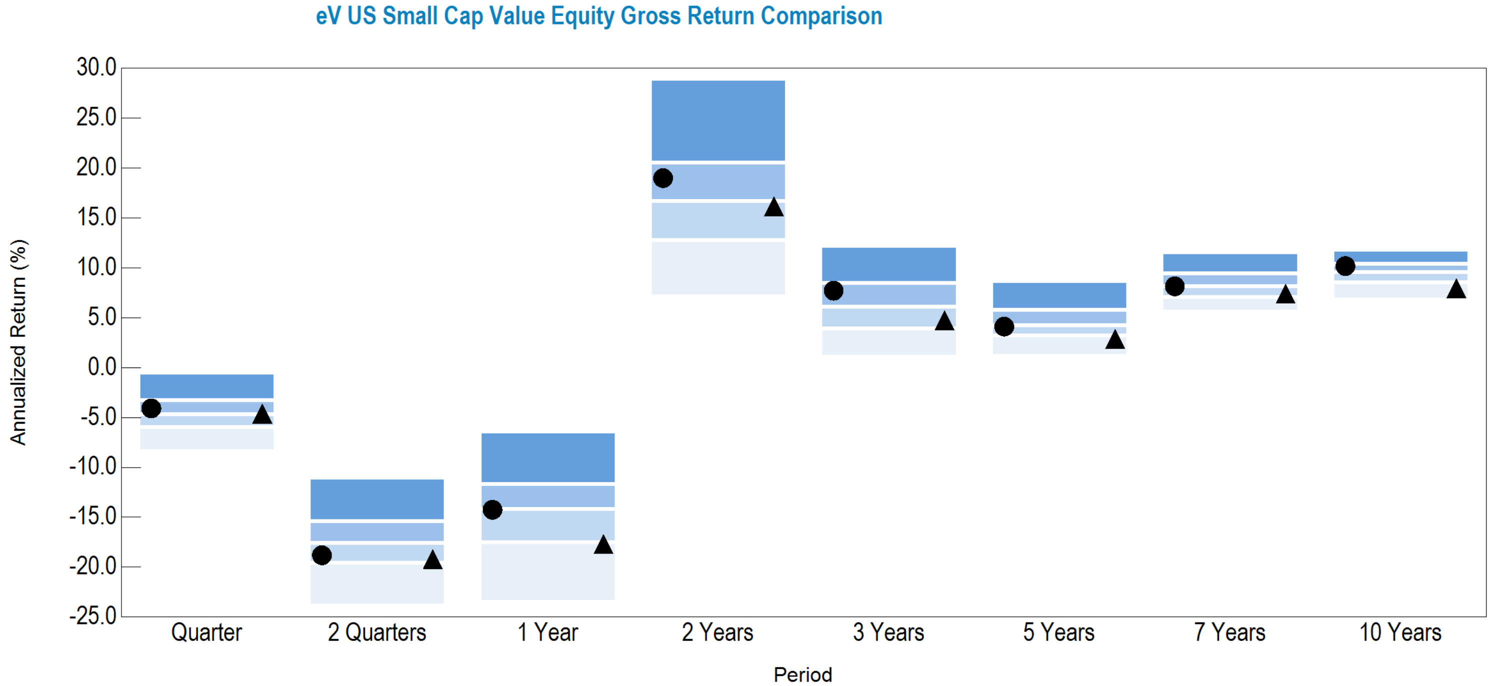
	Return %
TRADE DESK INC (THE) (TTD)	42.6%
ENPHASE ENERGY INC (ENPH)	42.1%
PAYPAL HOLDINGS INC (PYPL)	23.2%
SNOWFLAKE INC (SNOW)	22.2%
SCHWAB (CHARLES) CORP (SCHW)	14.1%
WASTE CONNECTIONS INC. (WCN)	9.2%
DEXCOM INC (DXCM)	8.1%
AMAZON.COM INC (AMZN)	6.4%
ULTA BEAUTY INC (ULTA)	4.1%
BOSTON SCIENTIFIC CORP (BSX)	3.9%

Worst Performers

	Return %
TRANSUNION (TRU)	-25.5%
ADOBE INC (ADBE)	-24.8%
SERVICENOW INC (NOW)	-20.6%
NVIDIA CORPORATION (NVDA)	-19.9%
NIKE INC (NKE)	-18.4%
TWILIO INC (TWLO)	-17.5%
IQVIA HOLDINGS INC (IQV)	-16.5%
AMERICAN TOWER CORP (AMT)	-16.0%
META PLATFORMS INC (META)	-15.9%
ZOETIS INC (ZTS)	-13.6%

TCW Performance Attribution vs. Russell 1000 Growth

	Attribution Effects					Returns		Sector Weights	
	Total Effects		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	-0.09%		--	-0.09%	--	--	4.97%	0.00%	1.16%
Materials	0.01%		--	0.01%	--	--	-4.11%	0.00%	1.39%
Industrials	-0.39%		-0.52%	-0.05%	0.19%	-8.83%	-1.55%	4.58%	7.07%
Consumer Discretionary	-0.94%		-0.81%	-0.26%	0.13%	0.85%	6.12%	12.95%	15.54%
Consumer Staples	0.30%		0.35%	0.10%	-0.15%	-1.30%	-6.83%	3.45%	5.88%
Health Care	-0.25%		-0.23%	0.02%	-0.04%	-7.91%	-4.82%	12.22%	12.37%
Financials	0.11%		0.01%	0.10%	0.01%	-0.79%	-0.84%	6.89%	2.96%
Information Technology	-0.95%		-1.04%	0.03%	0.06%	-7.47%	-5.27%	41.22%	43.68%
Communication Services	-0.27%		-0.11%	-0.13%	-0.02%	-12.65%	-11.33%	10.21%	8.12%
Utilities	0.00%		--	0.00%	--	--	-2.76%	0.00%	0.05%
Real Estate	-0.48%		-0.08%	-0.25%	-0.15%	-16.00%	-11.49%	5.15%	1.78%
Cash	0.22%		0.00%	0.22%	0.00%	0.46%	--	3.34%	0.00%
Portfolio	**-2.73%**	**=**	**-2.44%**	**+ -0.31%**	**+ 0.02%**	**-6.34%**	**-3.61%**	**100.00%**	**100.00%**



	Return (Rank)															
5th Percentile	-0.52		-11.06		-6.46		28.92		12.16		8.67		11.55		11.80	
25th Percentile	-3.23		-15.35		-11.62		20.59		8.53		5.80		9.51		10.44	
Median	-4.63		-17.50		-14.14		16.75		6.11		4.29		8.20		9.60	
75th Percentile	-5.92		-19.54		-17.48		12.83		3.96		3.24		7.13		8.56	
95th Percentile	-8.38		-23.82		-23.45		7.15		1.14		1.18		5.61		6.84	
# of Portfolios	206		206		206		204		202		191		184		173	
● **Kennedy**	-4.09	(43)	-18.81	(67)	-14.25	(53)	18.99	(39)	7.71	(33)	4.11	(57)	8.14	(52)	10.17	(33)
▲ **Russell 2000 Value**	-4.61	(50)	-19.18	(72)	-17.69	(76)	16.16	(55)	4.72	(70)	2.87	(81)	7.42	(70)	7.94	(85)

Characteristics

	Portfolio	Russell 2000 Value
Number of Holdings	260	1,394
Weighted Avg. Market Cap. ($B)	3.0	2.2
Median Market Cap. ($B)	1.9	0.9
Price To Earnings	12.2	9.5
Price To Book	1.8	1.5
Price To Sales	1.2	1.0
Return on Equity (%)	9.3	5.9
Yield (%)	1.7	2.5
Beta	1.0	1.0

Top Holdings

FIRST INTERSTATE BANCSYSTEM INC	1.1%
BANNER CORP	1.0%
CASELLA WASTE SYSTEMS INC	1.0%
INTERNATIONAL BANCSHARES CORP	1.0%
FIRST INTERNET BANCORP	0.9%
BARRETT BUSINESS SERVICES INC	0.9%
HANCOCK WHITNEY CORP	0.8%
AMERICAN EQUITY INVESTMENT LIFE HOLDING CO	0.8%
PDC ENERGY INC	0.8%
WINTRUST FINANCIAL CORP.	0.8%

Best Performers

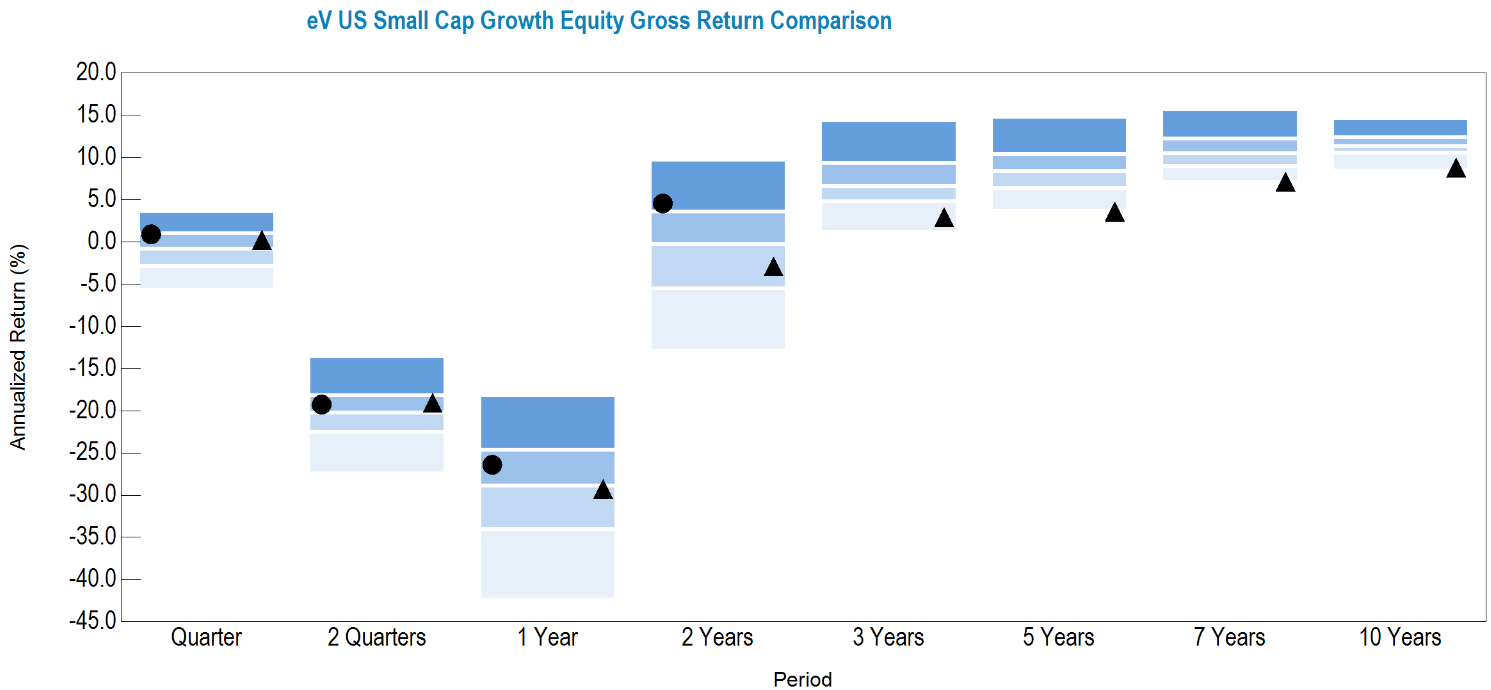
	Return %
APPLIED OPTOELECTRONICS INC (AAOI)	75.5%
YELLOW CORP (YELL)	73.0%
Cogent Biosciences Inc (COGT)	65.4%
BIOLIFE SOLUTIONS INC (BLFS)	64.7%
COWEN INC (COWN)	63.6%
ZEVIA PBC	53.7%
GERON CORP (GERN)	51.0%
HARMONIC INC (HLIT)	50.8%
EXTREME NETWORKS INC (EXTR)	46.5%
NAPCO SECURITY TECHNOLOGIES INC (NSSC)	41.2%

Worst Performers

	Return %
HALLMARK FINANCIAL SERVICES INC (HALL)	-56.6%
ARGO GROUP INTERNATIONAL HOLDINGS LTD (ARGO)	-46.9%
OPTIMIZERX CORP (OPRX)	-45.9%
GREAT LAKES DREDGE & DOCK CORP (GLDD)	-42.2%
ROCKY BRANDS INC (RCKY)	-41.0%
HELEN OF TROY LTD (HELE)	-40.6%
AMERICA'S CAR-MART INC (CRMT)	-39.3%
MERCURY SYSTEMS INC (MRCY)	-36.9%
FORMFACTOR INC (FORM)	-35.3%
HIMAX TECHNOLOGIES INC (HIMX)	-35.3%

Kennedy Performance Attribution vs. Russell 2000 Value

	Attribution Effects					Returns		Sector Weights	
	Total Effects		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	-0.41%		-0.46%	0.27%	-0.22%	-2.59%	7.06%	7.04%	4.79%
Materials	-0.10%		0.00%	-0.11%	0.00%	-9.41%	-9.44%	6.08%	3.81%
Industrials	1.17%		0.94%	-0.10%	0.33%	0.27%	-7.13%	17.24%	12.86%
Consumer Discretionary	-0.57%		-0.61%	0.00%	0.03%	-11.88%	-5.48%	8.93%	9.47%
Consumer Staples	0.23%		0.20%	-0.06%	0.09%	-2.53%	-9.63%	4.07%	2.84%
Health Care	-1.01%		-1.09%	-0.31%	0.39%	-6.77%	3.36%	6.85%	10.74%
Financials	0.50%		0.77%	-0.12%	-0.15%	0.17%	-2.48%	23.48%	28.89%
Information Technology	0.49%		0.29%	-0.02%	0.21%	-0.24%	-5.16%	10.28%	5.93%
Communication Services	0.19%		-0.02%	0.20%	0.01%	-15.25%	-14.53%	1.21%	3.26%
Utilities	0.10%		0.03%	0.07%	-0.01%	-8.89%	-9.42%	3.81%	5.40%
Real Estate	0.22%		0.06%	0.17%	-0.01%	-10.87%	-11.36%	9.41%	12.00%
Cash	0.08%		0.00%	0.08%	0.00%	0.46%	--	1.62%	0.00%
Portfolio	**0.88%**	**=**	**0.11% +**	**0.08% +**	**0.69%**	**-3.86%**	**-4.74%**	**100.00%**	**100.00%**



	Return (Rank)															
5th Percentile	3.61		-13.56		-18.20		9.68		14.42		14.81		15.66		14.60	
25th Percentile	1.02		-18.14		-24.60		3.67		9.41		10.50		12.32		12.47	
Median	-0.76		-20.14		-28.80		-0.22		6.68		8.38		10.56		11.38	
75th Percentile	-2.84		-22.46		-34.00		-5.46		4.85		6.45		9.06		10.59	
95th Percentile	-5.61		-27.41		-42.34		-12.79		1.22		3.73		7.16		8.49	
# of Portfolios	151		151		151		151		148		146		137		125	
● Willliam Blair Small Cap Growth	0.89	(27)	-19.28	(38)	-26.41	(30)	4.55	(21)	--	(--)	--	(--)	--	(--)	--	(--)
▲ Russell 2000 Growth	0.24	(36)	-19.06	(36)	-29.27	(54)	-2.92	(67)	2.93	(90)	3.60	(96)	7.12	(96)	8.81	(94)

Characteristics

	Portfolio	Russell 2000 Growth
Number of Holdings	3,383	1,121
Weighted Avg. Market Cap. ($B)	229.4	3.0
Median Market Cap. ($B)	9.2	1.2
Price To Earnings	15.0	15.4
Price To Book	2.9	3.5
Price To Sales	1.5	1.6
Return on Equity (%)	19.8	2.9
Yield (%)	2.4	0.8
Beta		1.0

Top Holdings

BWX TECHNOLOGIES INC	2.8%
VERRA MOBILITY CORP	2.6%
CASELLA WASTE SYSTEMS INC	2.5%
NATIONAL VISION HOLDINGS INC	2.5%
MERIT MEDICAL SYSTEMS INC	2.3%
BRINK'S CO (THE)	2.1%
ENERGY RECOVERY INC	1.9%
ALBANY INTERNATIONAL CORP.	1.9%
Denbury Inc.	1.9%
HEALTHEQUITY INC	1.8%

Best Performers

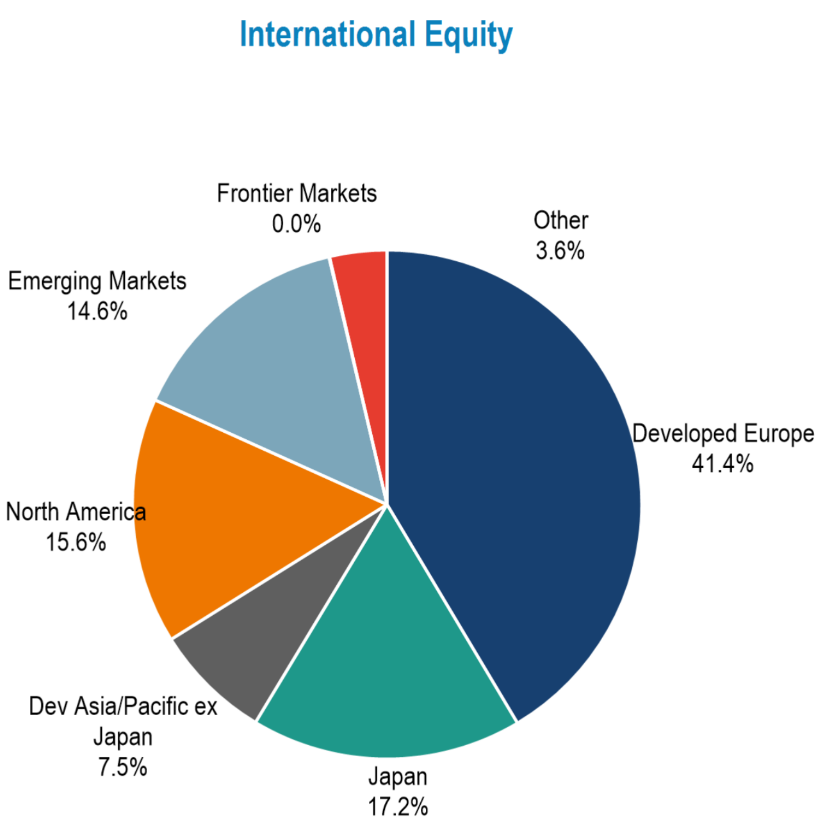
	Return %
STEM INC	86.3%
BTRS HOLDINGS INC	85.9%
WINGSTOP INC (WING)	68.0%
TREACE MEDICAL CONCEPTS INC	53.9%
PENUMBRA INC (PEN)	52.3%
COMPUTER SERVICES INC (CSVI)	51.6%
AXOGEN INC (AXGN)	45.5%
Denbury Inc. (DEN)	43.8%
CELSIUS HOLDINGS INC (CELH)	39.0%
VITAL FARMS INC (VITL)	36.8%

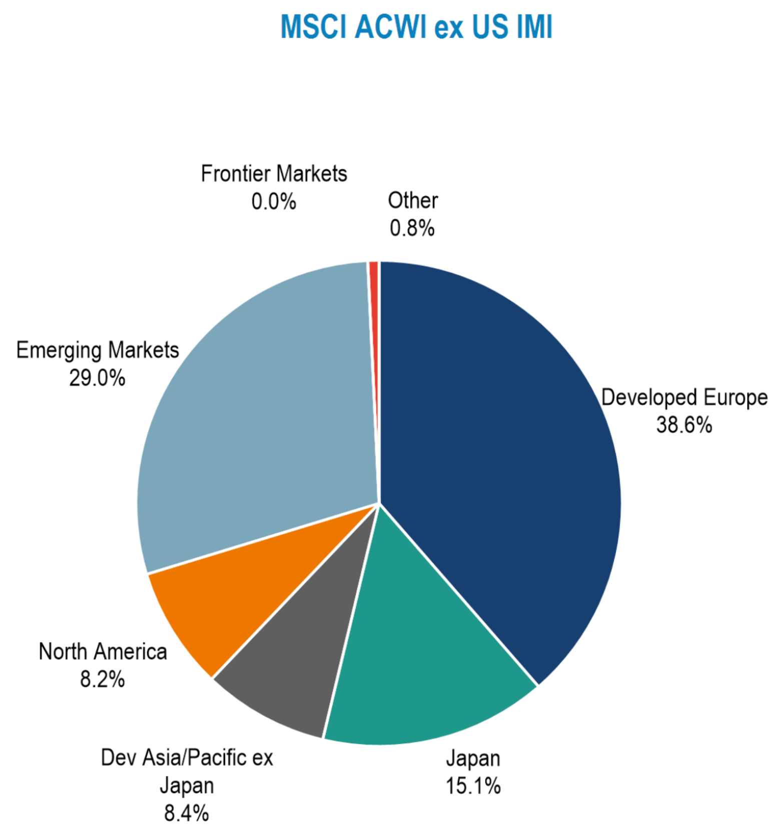
Worst Performers

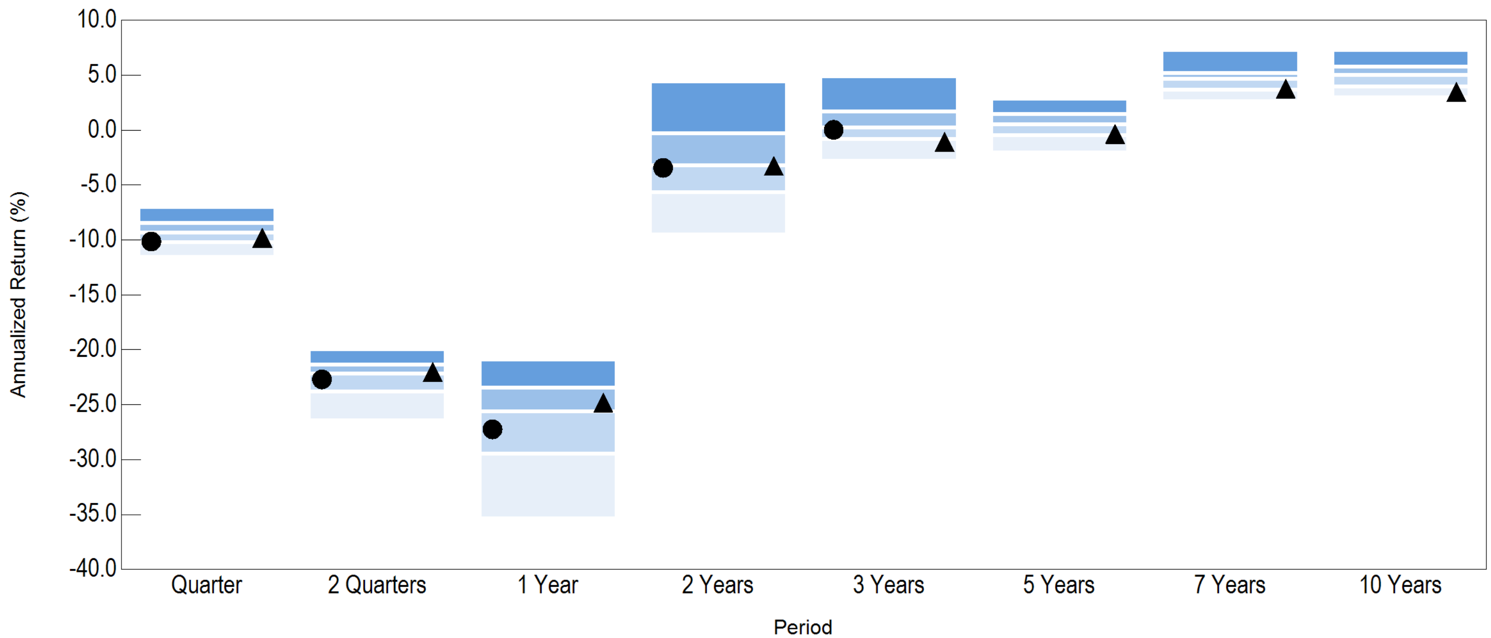
	Return %
SITIME CORP (SITM)	-51.7%
UPLAND SOFTWARE INC (UPLD)	-44.0%
CODEXIS INC (CDXS)	-42.1%
AZENTA INC (AZTA)	-40.6%
CERTARA INC (CERT)	-38.1%
MERCURY SYSTEMS INC (MRCY)	-36.9%
CENTURY ALUMINUM CO (CENX)	-28.4%
ARTIVION INC (AORT)	-26.7%
GOGO INC (GOGO)	-25.1%
EURONET WORLDWIDE INC (EEFT)	-24.7%

Willliam Blair Small Cap Growth Performance Attribution vs. Russell 2000 Growth

	Attribution Effects					Returns		Sector Weights	
	Total Effects		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	1.03%		0.88%	0.03%	0.11%	18.32%	3.83%	6.89%	6.15%
Materials	-0.24%		-0.76%	0.06%	0.46%	-18.74%	-1.98%	2.30%	4.40%
Industrials	-0.70%		-0.57%	0.00%	-0.13%	-3.10%	-0.23%	21.31%	17.20%
Consumer Discretionary	0.50%		0.53%	-0.04%	0.01%	6.39%	1.33%	9.44%	10.46%
Consumer Staples	0.72%		0.71%	0.01%	0.00%	8.03%	-6.72%	4.75%	4.69%
Health Care	-1.87%		-1.80%	0.04%	-0.11%	-0.28%	8.08%	24.88%	22.67%
Financials	-0.08%		-0.34%	0.04%	0.23%	-6.20%	-0.65%	2.02%	5.93%
Information Technology	0.71%		0.69%	0.04%	-0.03%	-0.38%	-4.20%	19.79%	21.42%
Communication Services	-0.10%		-0.01%	-0.08%	-0.01%	-5.87%	-5.38%	3.66%	2.31%
Utilities	0.07%		--	0.07%	--	--	-3.45%	0.00%	1.78%
Real Estate	0.36%		0.30%	0.16%	-0.09%	-8.13%	-18.22%	2.03%	2.87%
Cash	0.10%		0.00%	0.10%	0.00%	0.46%	--	2.93%	0.00%
Portfolio	**0.49%**	**=**	**-0.37%**	**+ 0.43%**	**+ 0.44%**	**0.70%**	**0.20%**	**100.00%**	**100.00%**


International Equity
Frontier Markets
0.0%
Other
3.6%
Emerging Markets
14.6%
Developed Europe
41.4%
North America
15.6%
Dev Asia/Pacific ex Japan
7.5%
Japan
17.2%


MSCI ACWI ex US IMI
Frontier Markets
0.0%
Other
0.8%
Emerging Markets
29.0%
Developed Europe
38.6%
North America
8.2%
Dev Asia/Pacific ex Japan
8.4%
Japan
15.1%



	Return (Rank)															
5th Percentile	-7.01		-19.99		-20.91		4.40		4.90		2.85		7.27		7.28	
25th Percentile	-8.43		-21.30		-23.42		-0.26		1.73		1.49		5.23		5.82	
Median	-9.29		-22.11		-25.56		-3.15		0.26		0.56		4.69		5.04	
75th Percentile	-10.18		-23.75		-29.42		-5.63		-0.81		-0.43		3.69		4.00	
95th Percentile	-11.54		-26.42		-35.32		-9.48		-2.77		-2.03		2.64		3.00	
# of Portfolios	59		59		59		59		56		54		48		45	
● Bivium Intl Equity	-10.14	(75)	-22.69	(61)	-27.24	(62)	-3.43	(54)	0.02	(58)	--	(--)	--	(--)	--	(--)
▲ MSCI ACWI ex USA Gross	-9.80	(65)	-22.02	(48)	-24.79	(38)	-3.25	(53)	-1.07	(83)	-0.34	(73)	3.78	(71)	3.48	(88)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	432	2,270
Weighted Avg. Market Cap. ($B)	38.6	71.1
Median Market Cap. ($B)	6.2	7.8
Price To Earnings	9.4	11.4
Price To Book	2.3	2.4
Price To Sales	0.9	1.2
Return on Equity (%)	13.5	15.1
Yield (%)	3.9	3.7
Beta	1.1	1.0

Top Holdings

NOVO NORDISK 'B'	1.5%
SANDS CHINA LTD	1.4%
BAIDU INC	1.3%
ALIBABA GROUP HOLDING LTD	1.1%
DIAGEO PLC	1.1%
SAGE GROUP PLC	1.1%
SHELL PLC	1.0%
ROCHE HOLDING AG	1.0%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	0.9%
SONOVA HOLDING AG	0.9%

Best Performers

	Return %
ABACORE CAPITAL HOLDINGS INC	46.1%
EDF	42.9%
C&A MODAS S A	37.8%
PAGSEGURO DIGITAL LTD (PAGS)	29.2%
PETROLEO BRASILEIRO S.A.- PETROBRAS (PBR)	25.7%
PETROLEO BRASILEIRO S.A.- PETROBRAS	25.0%
PETROLEO BRASILEIRO S.A.- PETROBRAS	24.9%
SAMSONITE INTERNATIONAL SA	21.7%
POYA INTL. (TW:POY)	21.4%
EMECO HOLDINGS LTD	21.1%

Worst Performers

	Return %
SAIPEM SPA	-76.6%
CECONOMY AG	-57.8%
NORWAY ROYAL SALMON AS	-46.4%
POU SHENG INTERNATIONAL (HOLDINGS) LTD	-43.8%
FRESENIUS MEDICAL CARE AG &CO KGAA	-42.8%
CHINASOFT INTERNATIONAL LTD	-39.9%
BT GROUP PLC	-38.2%
IWG PLC	-38.1%
ENSIGN ENERGY SERVICES INC (ESI.)	-37.1%
CHINA LESSO GROUP HOLDINGS LTD	-36.9%

Bivium Intl Equity Performance Attribution vs. MSCI ACWI ex USA Gross

	Attribution Effects					Returns		Sector Weights	
	Total Effects		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	-0.01%		-0.15%	-0.12%	0.27%	-7.73%	-6.10%	3.23%	6.03%
Materials	-0.16%		-0.39%	-0.05%	0.29%	-11.69%	-7.81%	5.77%	8.03%
Industrials	-0.28%		-0.12%	0.09%	-0.24%	-9.16%	-8.22%	15.77%	11.81%
Consumer Discretionary	0.00%		0.08%	-0.07%	-0.01%	-11.61%	-13.03%	14.18%	11.73%
Consumer Staples	-0.07%		-0.24%	-0.13%	0.30%	-8.78%	-6.35%	5.67%	8.94%
Health Care	-0.21%		-0.21%	0.00%	0.01%	-12.94%	-10.89%	9.72%	9.80%
Financials	-0.01%		-0.28%	-0.09%	0.36%	-9.26%	-7.90%	14.42%	20.29%
Information Technology	0.03%		-0.23%	0.05%	0.22%	-12.94%	-12.18%	10.23%	11.01%
Communication Services	0.27%		-0.34%	0.26%	0.34%	-20.55%	-16.47%	3.02%	6.50%
Utilities	0.12%		0.12%	0.01%	-0.01%	-8.85%	-10.79%	1.68%	3.39%
Real Estate	-0.02%		0.11%	-0.04%	-0.08%	-12.77%	-14.52%	3.00%	2.47%
Cash	0.14%		0.00%	0.14%	0.00%	0.46%	--	2.66%	0.00%
Unclassified	-0.64%		0.00%	-0.38%	-0.26%	-10.74%	--	10.63%	0.00%
Portfolio	**-0.83%**	**=**	**-1.66%**	**+ -0.35%**	**+ 1.18%**	**-10.70%**	**-9.87%**	**100.00%**	**100.00%**

Bivium Intl Equity Performance Attribution vs. MSCI ACWI ex USA Gross

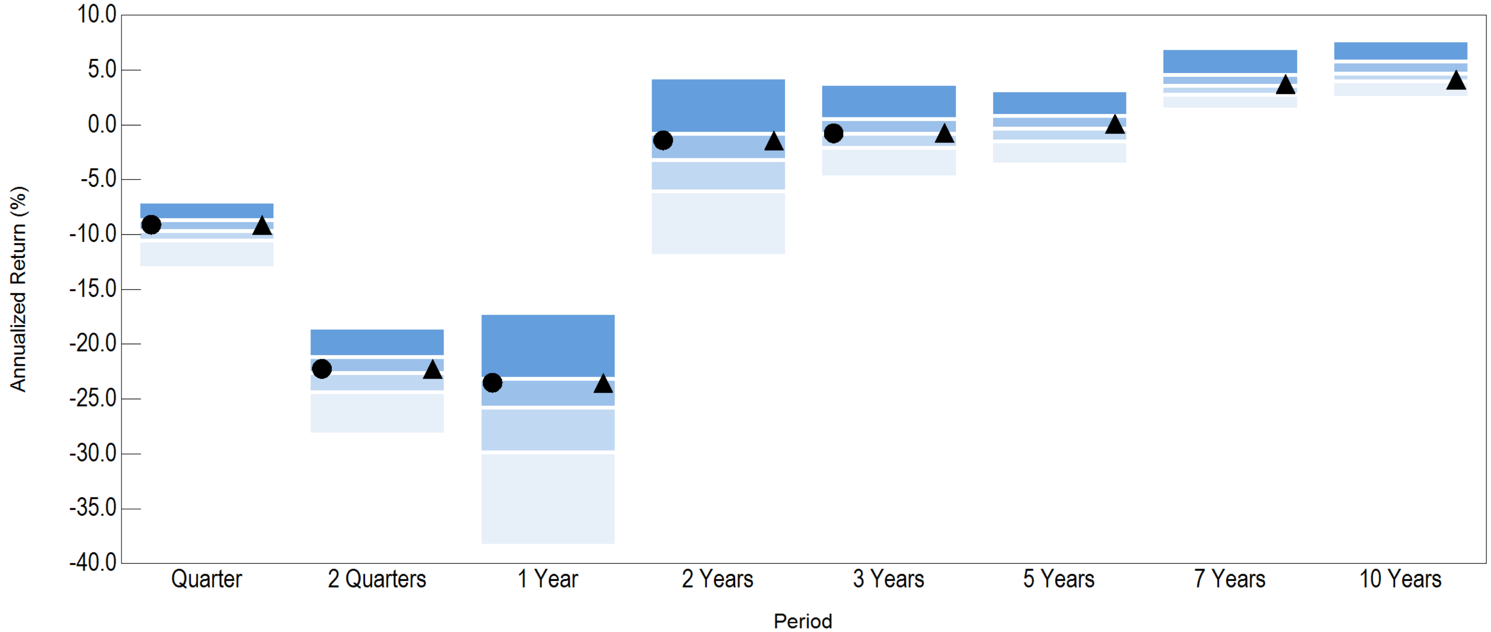
	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Europe									
Austria	-19.06%	-15.01%	1.29%	0.11%	-0.01%	-0.05%	-0.06%	-0.06%	-0.17%
Belgium	-17.70%	-13.20%	0.77%	0.63%	-0.03%	0.00%	-0.01%	-0.01%	-0.05%
Czech Republic*	--	-18.34%	0.00%	0.05%	--	0.00%	0.00%	--	0.01%
Denmark	-11.18%	-12.23%	2.87%	1.72%	0.02%	-0.02%	-0.07%	0.01%	-0.06%
Finland	-2.38%	-7.02%	0.44%	0.62%	0.03%	-0.01%	0.01%	-0.01%	0.02%
France	-8.51%	-8.73%	9.06%	6.98%	0.00%	0.04%	-0.11%	0.00%	-0.06%
Germany	-19.78%	-12.49%	3.29%	4.85%	-0.38%	0.03%	0.11%	0.12%	-0.12%
Greece*	--	-7.40%	0.00%	0.08%	--	0.00%	0.00%	--	0.00%
Hungary*	--	-14.94%	0.00%	0.05%	--	0.00%	0.01%	--	0.00%
Ireland	-12.98%	-5.31%	0.37%	0.35%	-0.04%	0.00%	0.01%	0.00%	-0.03%
Italy	-4.71%	-8.27%	1.39%	1.42%	0.05%	0.00%	0.00%	0.00%	0.05%
Luxembourg	21.73%	-9.87%	0.06%	0.00%	0.00%	0.00%	0.00%	0.02%	0.02%
Netherlands	-9.30%	-10.61%	3.64%	2.56%	0.04%	0.00%	-0.07%	0.02%	-0.02%
Norway	-25.13%	-14.84%	0.87%	0.52%	-0.06%	-0.01%	-0.02%	-0.04%	-0.13%
Poland*	--	-24.35%	0.00%	0.18%	--	0.02%	0.01%	--	0.04%
Portugal	--	-10.81%	0.00%	0.15%	--	0.00%	0.01%	--	0.01%
Spain	-24.40%	-14.04%	1.14%	1.55%	-0.17%	0.01%	0.03%	0.05%	-0.08%
Sweden	-6.47%	-8.87%	2.98%	2.08%	0.05%	0.03%	-0.07%	0.02%	0.03%
Switzerland	-12.84%	-7.43%	7.19%	6.49%	-0.35%	0.00%	-0.01%	-0.04%	-0.41%
United Kingdom	-12.08%	-11.01%	10.81%	9.93%	-0.12%	0.02%	-0.05%	-0.01%	-0.17%

Bivium Intl Equity Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
AsiaPacific									
Australia	-8.26%	-6.62%	1.92%	4.85%	-0.09%	-0.14%	0.19%	0.05%	0.02%
China*	-22.67%	-22.44%	5.21%	10.48%	-0.11%	0.89%	0.09%	0.06%	0.92%
Hong Kong	-15.09%	-16.94%	7.13%	2.08%	0.04%	-0.61%	0.00%	0.09%	-0.48%
India*	7.94%	6.60%	0.83%	3.79%	-0.07%	-0.43%	0.12%	0.05%	-0.32%
Indonesia*	-2.38%	7.96%	0.41%	0.54%	-0.06%	-0.02%	0.00%	0.01%	-0.06%
Japan	-6.57%	-7.58%	14.90%	13.86%	0.15%	0.03%	-0.07%	0.01%	0.12%
Korea*	-17.08%	-17.09%	2.76%	3.34%	-0.20%	0.02%	0.22%	0.03%	0.07%
Malaysia*	-5.01%	-7.31%	0.20%	0.43%	0.01%	-0.01%	0.01%	-0.01%	0.01%
New Zealand	-15.70%	-7.98%	0.70%	0.11%	-0.01%	0.03%	-0.05%	-0.05%	-0.07%
Philippines*	-12.09%	-13.55%	0.10%	0.21%	0.00%	0.00%	0.01%	0.00%	0.01%
Singapore	5.01%	-1.51%	1.71%	0.90%	0.06%	0.05%	-0.03%	0.06%	0.14%
Taiwan*	-10.17%	-13.99%	1.22%	4.31%	0.02%	0.10%	0.22%	-0.02%	0.33%
Thailand*	-7.45%	-2.85%	0.22%	0.56%	-0.04%	-0.03%	0.03%	0.02%	-0.02%
Americas									
Brazil*	17.40%	8.53%	1.18%	1.45%	0.11%	-0.05%	0.02%	-0.02%	0.07%
Canada	-15.30%	-7.80%	3.64%	8.10%	-0.65%	-0.13%	0.29%	0.36%	-0.14%
Chile*	10.86%	2.75%	0.12%	0.15%	0.01%	0.00%	0.00%	0.00%	0.01%
Colombia*	--	-18.30%	0.00%	0.05%	--	0.00%	0.00%	--	0.01%
Mexico*	--	-5.62%	0.00%	0.62%	--	0.01%	0.00%	--	0.01%
Peru*	--	-0.90%	0.00%	0.07%	--	0.00%	0.00%	--	0.00%
United States	-11.89%	-4.81%	7.63%	0.00%	0.00%	0.00%	0.00%	-0.54%	-0.54%

Bivium Intl Equity Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Other									
Egypt*	--	-2.44%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Israel	-3.30%	-3.34%	0.29%	0.47%	0.00%	0.00%	0.00%	0.00%	0.00%
Kuwait*	--	-5.65%	0.00%	0.24%	--	0.00%	0.00%	--	0.00%
Qatar*	--	0.94%	0.00%	0.31%	--	-0.02%	0.00%	--	-0.02%
Saudi Arabia*	--	-0.68%	0.00%	1.25%	--	-0.05%	0.00%	--	-0.05%
South Africa*	-13.14%	-12.25%	0.37%	1.05%	-0.01%	-0.01%	0.06%	0.01%	0.05%
Turkey*	--	16.40%	0.00%	0.08%	--	-0.03%	0.01%	--	-0.02%
United Arab Emirates*	6.66%	-2.53%	0.44%	0.38%	0.03%	0.00%	0.00%	0.01%	0.04%
Totals									
Americas	-9.92%	-5.26%	12.57%	10.43%	-0.85%	0.10%	0.32%	-0.17%	-0.60%
Europe	-11.89%	-10.20%	46.22%	40.30%	-0.74%	0.03%	-0.29%	-0.11%	-1.10%
Asia/Pacific	-10.71%	-11.12%	37.31%	45.46%	-0.27%	0.16%	0.73%	0.05%	0.67%
Other	-2.63%	-4.20%	1.10%	3.81%	0.07%	-0.10%	0.08%	-0.05%	0.00%
Cash	0.46%	--	2.81%	0.00%	0.00%	0.15%	0.00%	0.00%	0.15%
Total	**-10.76%**	**-9.87%**	**100.00%**	**100.00%**	**-1.78%**	**0.34%**	**0.84%**	**-0.29%**	**-0.88%**
Totals									
Developed	-10.94%	-9.16%	84.09%	70.32%	-1.94%	0.19%	0.02%	-0.38%	-2.11%
Emerging*	-11.95%	-11.57%	13.10%	29.68%	-0.66%	0.55%	0.82%	0.37%	1.08%
Cash	0.46%	--	2.81%	0.00%	0.00%	0.15%	0.00%	0.00%	0.15%



Return (Rank)	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	-7.05		-18.52		-17.18		4.27		3.71		3.15		6.98		7.69	
25th Percentile	-8.64		-21.16		-23.12		-0.79		0.56		0.83		4.59		5.82	
Median	-9.64		-22.60		-25.73		-3.15		-0.75		-0.32		3.62		4.73	
75th Percentile	-10.51		-24.37		-29.85		-6.01		-2.04		-1.45		2.80		4.00	
95th Percentile	-13.01		-28.20		-38.32		-11.95		-4.76		-3.60		1.42		2.47	
# of Portfolios	391		391		391		379		370		346		309		252	
● BlackRock MSCI World ex-US Index Fd A	-9.10	(33)	-22.24	(43)	-23.51	(29)	-1.40	(31)	-0.76	(51)	--	(--)	--	(--)	--	(--)
▲ MSCI World ex US Gross	-9.11	(33)	-22.24	(43)	-23.50	(29)	-1.40	(31)	-0.72	(50)	0.11	(40)	3.73	(48)	4.14	(69)

Characteristics

	Portfolio	MSCI World ex USA
Number of Holdings	889	886
Weighted Avg. Market Cap. ($B)	65.0	65.1
Median Market Cap. ($B)	10.5	10.6
Price To Earnings	12.2	12.1
Price To Book	2.3	2.3
Price To Sales	1.3	1.3
Return on Equity (%)	15.0	14.9
Yield (%)	3.6	3.7
Beta	1.0	1.0

Top Holdings

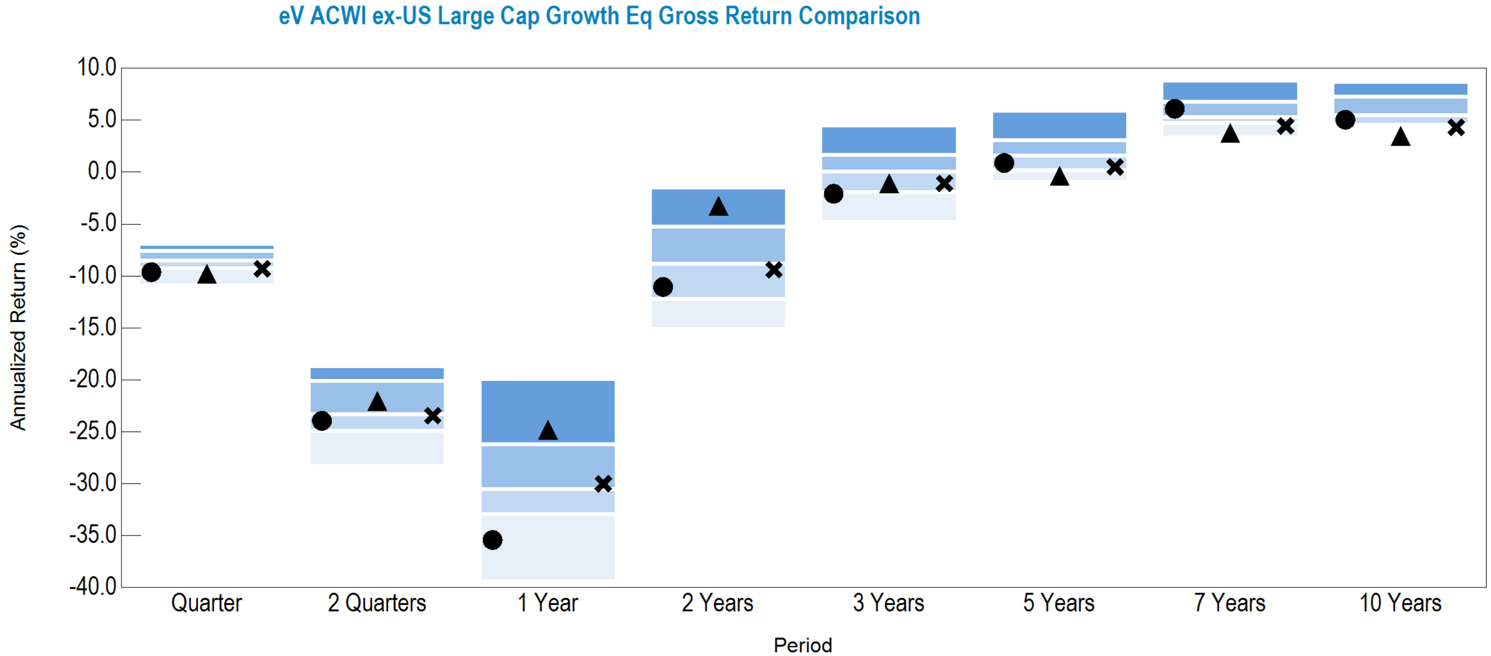
NESTLE SA, CHAM UND VEVEY	2.1%
ROCHE HOLDING AG	1.6%
SHELL PLC	1.4%
ASTRAZENECA PLC	1.3%
ASML HOLDING NV	1.3%
LVMH MOET HENNESSY LOUIS VUITTON SE	1.2%
NOVO NORDISK 'B'	1.2%
NOVARTIS AG	1.1%
TOYOTA MOTOR CORP	1.0%
ROYAL BANK OF CANADA	0.9%

Best Performers

	Return %
EDF	42.9%
MINERAL RESOURCES LTD	29.5%
AVEVA GROUP (UKIR:AVV)	29.3%
WISETECH GLOBAL LTD	28.6%
EISAI CO LTD	28.4%
SWIRE PACIFIC LTD	28.3%
CAMECO CORP (CCO.)	27.1%
NIBE INDUSTRIER AB, MARKARYD	20.3%
WIX.COM LTD (WIX)	19.3%
CYBERARK SOFTWARE LTD (CYBR)	17.2%

Worst Performers

	Return %
UNIPER SE	-74.1%
SINCH AB (PUBL)	-58.3%
GRIFOLS S A	-53.8%
KION GROUP GMBH	-53.1%
SALMAR ASA	-51.8%
GN STORE NORD (DK:GSN)	-49.5%
OCADO GROUP PLC	-44.5%
ZIM INTEGRATED SHIPPING SERVCES LTD COM NPV	-44.5%
MOWI ASA	-43.1%
FRESENIUS MEDICAL CARE AG &CO KGAA	-42.8%



Return (Rank)	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	-6.93		-18.71		-19.92		-1.53		4.48		5.87		8.81		8.66	
25th Percentile	-7.53		-20.04		-26.18		-5.19		1.71		3.11		6.80		7.32	
Median	-8.45		-23.27		-30.49		-8.76		0.10		1.66		5.32		5.53	
75th Percentile	-9.20		-24.90		-32.90		-12.16		-1.91		0.24		4.76		4.61	
95th Percentile	-10.88		-28.28		-39.35		-15.06		-4.77		-0.89		3.38		4.34	
# of Portfolios	42		42		42		40		37		34		29		21	
● Capital Group	-9.63	(83)	-23.94	(57)	-35.41	(83)	-11.05	(73)	-2.08	(79)	0.88	(58)	6.10	(41)	5.05	(66)
▲ MSCI ACWI ex USA Gross	-9.80	(84)	-22.02	(40)	-24.79	(16)	-3.25	(9)	-1.07	(66)	-0.34	(82)	3.78	(88)	3.48	(99)
✖ MSCI ACWI ex USA Growth Gross	-9.30	(81)	-23.45	(51)	-30.00	(46)	-9.40	(60)	-1.08	(66)	0.51	(68)	4.44	(83)	4.31	(96)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	223	2,270
Weighted Avg. Market Cap. ($B)	78.2	71.1
Median Market Cap. ($B)	22.1	7.8
Price To Earnings	16.8	11.4
Price To Book	3.2	2.4
Price To Sales	2.2	1.2
Return on Equity (%)	16.9	15.1
Yield (%)	2.3	3.7
Beta	1.1	1.0

Top Holdings

ASML HOLDING NV	2.5%
ASTRAZENECA PLC	2.4%
NOVO NORDISK 'B'	2.3%
TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	2.2%
KEYENCE CORP	2.2%
YANDEX NV	2.1%
GENMAB A/S	2.1%
EVOLUTION AB (PUBL)	2.0%
AIA GROUP LTD	2.0%
LVMH MOET HENNESSY LOUIS VUITTON SE	1.9%

Best Performers

	Return %
TCS GROUP HOLDING PLC	913.8%
ROSNEFT OIL COMPANY	267.9%
ORRON ENERGY AB (PUBL)	163.7%
MERCADOLIBRE INC (MELI)	30.0%
AVEVA GROUP (UKIR:AVV)	29.3%
PAGSEGURO DIGITAL LTD (PAGS)	29.2%
CAMECO CORP (CCO.)	27.1%
ICICI BANK LTD (IBN)	18.9%
TFI INTERNATIONAL INC (TFII.)	13.8%
AJINOMOTO CO INC	13.6%

Worst Performers

	Return %
COUNTRY GARDEN SERVICES HOLDINGS COMPANY LIMITED	-66.9%
XPENG INC CLASS A SHARES COMMON STOCK USD.00001	-63.6%
ADR XPENG INC ADS (XPEV)	-62.4%
SINCH AB (PUBL)	-58.3%
OCADO GROUP PLC	-44.5%
KINGDEE INTERNATIONAL SOFTWARE GROUP CO LTD	-44.1%
KUAISHOU TECHNOLOGY COMMON STOCK USD.0000053	-41.7%
BT GROUP PLC	-38.2%
P/F BAKKAFROST HOLDING	-37.5%
LONGFOR GROUP HOLDINGS LTD	-36.6%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Attribution Effects					Returns		Sector Weights	
	Total Effects		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	0.16%		0.28%	-0.18%	0.05%	-1.57%	-6.09%	2.34%	6.04%
Materials	0.07%		-0.19%	-0.06%	0.33%	-7.61%	-7.76%	5.87%	8.04%
Industrials	0.04%		0.03%	0.01%	0.00%	-7.79%	-8.24%	12.36%	11.82%
Consumer Discretionary	0.53%		0.72%	-0.03%	-0.16%	-8.27%	-13.02%	12.42%	11.68%
Consumer Staples	-0.77%		-0.93%	-0.04%	0.20%	-16.37%	-6.32%	7.84%	8.95%
Health Care	0.01%		0.20%	-0.05%	-0.14%	-9.11%	-11.07%	13.91%	9.78%
Financials	0.15%		-0.66%	-0.16%	0.97%	-9.41%	-7.93%	10.66%	20.32%
Information Technology	-0.25%		0.16%	-0.14%	-0.27%	-9.87%	-12.10%	20.58%	10.99%
Communication Services	0.17%		-0.09%	0.15%	0.11%	-17.47%	-16.47%	4.69%	6.51%
Utilities	0.06%		-0.04%	0.01%	0.09%	-11.80%	-10.80%	1.99%	3.39%
Real Estate	-0.14%		-0.61%	0.08%	0.39%	-37.44%	-14.56%	1.16%	2.48%
Cash	0.32%		0.00%	0.32%	0.00%	0.46%	--	6.18%	0.00%
Portfolio	**0.36%**	**=**	**-1.14%**	**+ -0.08%**	**+ 1.58%**	**-9.52%**	**-9.87%**	**100.00%**	**100.00%**

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

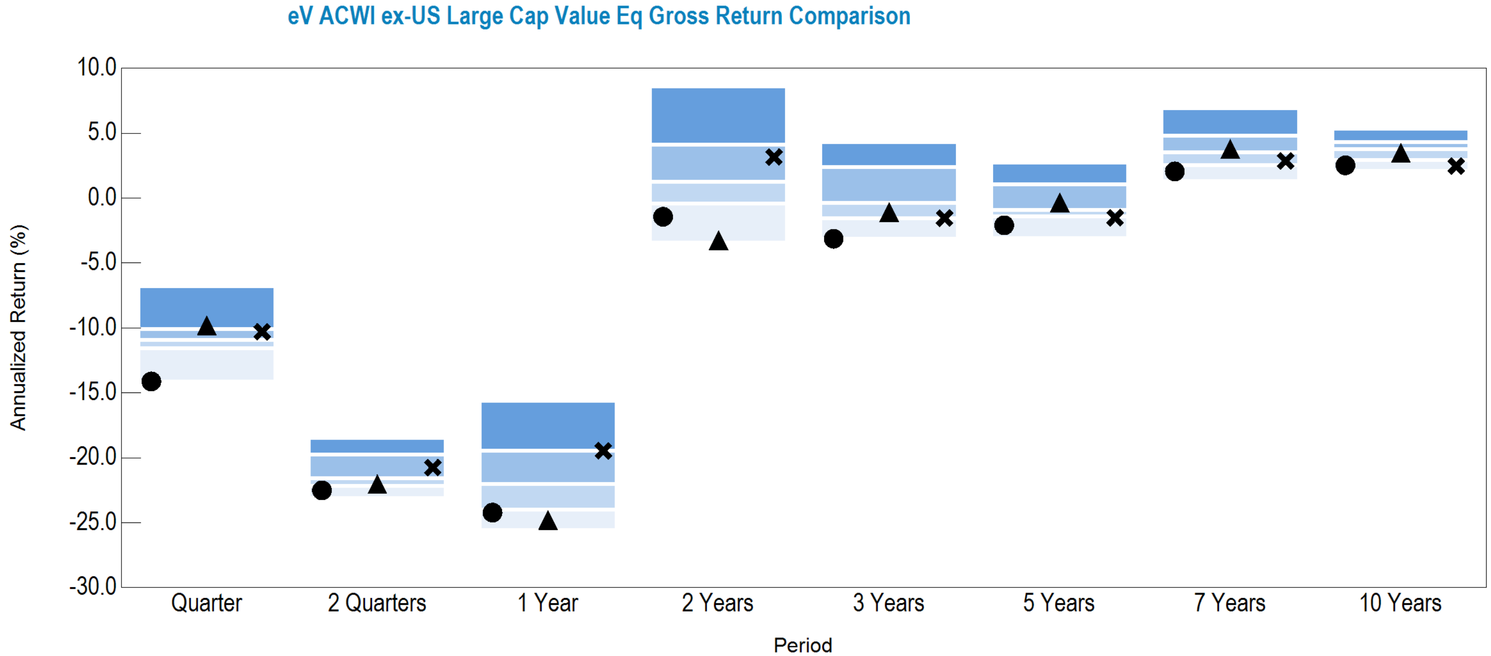
	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Europe									
Austria	-12.24%	-15.01%	0.00%	0.11%	0.00%	0.01%	0.01%	0.00%	0.01%
Belgium	-14.63%	-13.20%	0.58%	0.63%	-0.01%	0.00%	0.00%	0.00%	0.00%
Czech Republic*	--	-18.34%	0.00%	0.05%	--	0.00%	0.00%	--	0.01%
Denmark	-9.39%	-12.23%	6.68%	1.72%	0.05%	-0.08%	-0.32%	0.16%	-0.18%
Finland	-6.23%	-7.02%	0.27%	0.62%	0.01%	-0.01%	0.02%	0.00%	0.01%
France	-7.84%	-8.73%	10.72%	6.98%	0.07%	0.08%	-0.23%	0.04%	-0.05%
Germany	-12.54%	-12.49%	2.90%	4.85%	0.00%	0.04%	0.11%	0.00%	0.15%
Greece*	--	-7.40%	0.00%	0.08%	--	0.00%	0.00%	--	0.00%
Hungary*	--	-14.94%	0.00%	0.05%	--	0.00%	0.01%	--	0.00%
Ireland	-13.13%	-5.31%	0.20%	0.35%	-0.05%	-0.01%	0.02%	0.02%	-0.01%
Italy	-15.12%	-8.27%	0.78%	1.42%	-0.10%	-0.02%	0.04%	0.05%	-0.03%
Luxembourg	-20.82%	-9.87%	0.57%	0.00%	0.00%	0.00%	-0.03%	-0.06%	-0.09%
Netherlands	-11.18%	-10.61%	7.07%	2.56%	-0.01%	-0.01%	-0.27%	-0.02%	-0.30%
Norway	-13.94%	-14.84%	0.89%	0.52%	0.01%	-0.01%	-0.03%	0.00%	-0.03%
Poland*	--	-24.35%	0.00%	0.18%	--	0.02%	0.01%	--	0.04%
Portugal	-15.45%	-10.81%	0.00%	0.15%	-0.01%	0.00%	0.01%	0.01%	0.01%
Spain	-9.68%	-14.04%	1.61%	1.55%	0.07%	0.00%	-0.01%	0.00%	0.06%
Sweden	-14.42%	-8.87%	2.88%	2.08%	-0.13%	0.03%	-0.05%	-0.05%	-0.19%
Switzerland	-8.71%	-7.43%	7.30%	6.49%	-0.07%	0.00%	-0.04%	-0.01%	-0.12%
United Kingdom	-13.30%	-11.01%	8.66%	9.93%	-0.31%	-0.02%	0.17%	0.04%	-0.12%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
AsiaPacific									
Australia	12.37%	-6.62%	0.35%	4.85%	0.61%	-0.21%	0.31%	-0.56%	0.15%
China*	-24.44%	-22.44%	4.97%	10.48%	-0.22%	0.93%	0.05%	0.11%	0.87%
Hong Kong	-24.92%	-16.94%	5.12%	2.08%	-0.16%	-0.37%	-0.01%	-0.23%	-0.78%
India*	9.16%	6.60%	1.77%	3.79%	-0.02%	-0.29%	0.12%	0.01%	-0.18%
Indonesia*	-7.04%	7.96%	0.07%	0.54%	-0.08%	-0.07%	0.01%	0.07%	-0.07%
Japan	-6.03%	-7.58%	14.18%	13.86%	0.23%	0.01%	-0.03%	0.01%	0.21%
Korea*	-15.95%	-17.09%	0.66%	3.34%	0.04%	0.09%	0.24%	-0.03%	0.34%
Malaysia*	--	-7.31%	0.00%	0.43%	--	-0.01%	0.02%	--	0.01%
New Zealand	--	-7.98%	0.00%	0.11%	--	-0.01%	0.01%	--	0.00%
Philippines*	--	-13.55%	0.00%	0.21%	--	0.01%	0.01%	--	0.02%
Singapore	10.28%	-1.51%	0.81%	0.90%	0.11%	-0.01%	0.00%	-0.01%	0.09%
Taiwan*	-18.18%	-13.99%	4.91%	4.31%	-0.28%	-0.02%	0.08%	-0.04%	-0.26%
Thailand*	-5.52%	-2.85%	0.15%	0.56%	-0.02%	-0.04%	0.03%	0.01%	-0.01%
Americas									
Argentina*	29.98%	19.87%	0.71%	0.00%	0.00%	0.17%	0.00%	0.07%	0.25%
Brazil*	0.31%	8.53%	3.70%	1.45%	-0.15%	0.38%	-0.01%	-0.23%	0.00%
Canada	3.94%	-7.80%	2.65%	8.10%	1.01%	-0.16%	0.31%	-0.68%	0.48%
Chile*	--	2.75%	0.00%	0.15%	--	-0.02%	0.00%	--	-0.01%
Colombia*	--	-18.30%	0.00%	0.05%	--	0.00%	0.00%	--	0.01%
Mexico*	-7.84%	-5.62%	0.31%	0.62%	-0.01%	0.00%	0.00%	0.01%	0.00%
Peru*	--	-0.90%	0.00%	0.07%	--	0.00%	0.00%	--	0.00%
United States	-7.12%	-4.81%	0.71%	0.00%	0.00%	0.00%	0.00%	-0.02%	-0.02%

Capital Group Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Other									
Egypt*	--	-2.44%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Israel	-2.19%	-3.34%	0.59%	0.47%	0.00%	0.00%	0.01%	0.00%	0.01%
Kuwait*	--	-5.65%	0.00%	0.24%	--	0.00%	0.00%	--	0.00%
Qatar*	--	0.94%	0.00%	0.31%	--	-0.02%	0.00%	--	-0.02%
Saudi Arabia*	--	-0.68%	0.00%	1.25%	--	-0.05%	0.00%	--	-0.05%
South Africa*	-22.53%	-12.25%	0.58%	1.05%	-0.12%	-0.01%	0.05%	0.05%	-0.03%
Turkey*	--	16.40%	0.00%	0.08%	--	-0.03%	0.01%	--	-0.02%
United Arab Emirates*	--	-2.53%	0.00%	0.38%	--	-0.01%	0.00%	--	-0.01%
Totals									
Americas	3.14%	-5.26%	8.09%	10.43%	0.64%	-0.11%	0.30%	-0.14%	0.69%
Europe	-10.85%	-10.20%	51.56%	40.30%	-0.33%	0.07%	-0.59%	-0.09%	-0.95%
Asia/Pacific	-12.34%	-11.12%	32.98%	45.46%	-0.94%	0.24%	0.84%	0.26%	0.39%
Other	-12.28%	-4.20%	1.17%	3.81%	-0.27%	-0.09%	0.07%	0.19%	-0.11%
Cash	0.46%	--	6.20%	0.00%	0.00%	0.32%	0.00%	0.00%	0.32%
Unclassified	--	--	0.00%	0.00%	--	0.00%	0.00%	--	0.00%
Total	**-9.52%**	**-9.87%**	**100.00%**	**100.00%**	**-0.90%**	**0.42%**	**0.62%**	**0.21%**	**0.35%**
Totals									
Developed	-9.84%	-9.16%	75.52%	70.32%	-0.76%	0.07%	0.00%	-0.06%	-0.75%
Emerging*	-11.10%	-11.57%	17.84%	29.68%	-0.24%	0.39%	0.65%	0.10%	0.89%
Frontier**	-31.62%	--	0.44%	0.00%	0.00%	0.00%	-0.03%	-0.09%	-0.12%
Cash	0.46%	--	6.20%	0.00%	0.00%	0.32%	0.00%	0.00%	0.32%



	Return (Rank)															
5th Percentile	-6.78		-18.50		-15.64		8.60		4.31		2.73		6.92		5.32	
25th Percentile	-10.07		-19.71		-19.41		4.13		2.43		1.07		4.86		4.35	
Median	-10.89		-21.55		-22.01		1.27		-0.34		-0.91		3.55		3.77	
75th Percentile	-11.53		-22.13		-23.94		-0.39		-1.51		-1.39		2.57		2.95	
95th Percentile	-14.09		-23.10		-25.53		-3.40		-3.10		-3.07		1.34		2.13	
# of Portfolios	20		20		20		20		20		19		19		15	
● Mondrian	-14.12	(96)	-22.51	(85)	-24.22	(81)	-1.44	(87)	-3.13	(96)	-2.09	(90)	2.05	(90)	2.53	(86)
▲ MSCI ACWI ex USA Gross	-9.80	(17)	-22.02	(72)	-24.79	(86)	-3.25	(95)	-1.07	(71)	-0.34	(33)	3.78	(45)	3.48	(60)
✖ MSCI ACWI ex USA Value Gross	-10.29	(33)	-20.75	(40)	-19.46	(27)	3.16	(32)	-1.54	(76)	-1.51	(80)	2.87	(66)	2.47	(87)

Characteristics

	Portfolio	MSCI ACWI ex USA Gross
Number of Holdings	62	2,270
Weighted Avg. Market Cap. ($B)	38.9	71.1
Median Market Cap. ($B)	20.3	7.8
Price To Earnings	10.3	11.4
Price To Book	1.5	2.4
Price To Sales	0.8	1.2
Return on Equity (%)	10.5	15.1
Yield (%)	4.4	3.7
Beta	1.0	1.0

Top Holdings

TAKEDA PHARMACEUTICAL CO LTD	4.1%
CK HUTCHISON HOLDINGS LTD	3.9%
BP PLC	3.4%
UNITED OVERSEAS BANK LTD	3.4%
LLOYDS BANKING GROUP PLC	3.3%
ENEL ENTE NAZIONALE PER L'ENERGIA ELETTRICA SPA, ROMA	3.2%
BANCO SANTANDER SA	3.2%
NOVARTIS AG	3.1%
SANOFI	3.1%
NIPPON TELEGRAPH & TELEPHONE CORP NTT	3.0%

Best Performers

	Return %
BP PLC	3.5%
ISUZU MOTORS LTD	1.9%
KAO CORP	1.2%
UNITED OVERSEAS BANK LTD	-1.2%
ABB LTD	-1.4%
ISS A/S	-1.5%
SHELL PLC	-2.3%
JARDINE MATHESON HOLDINGS LTD	-2.6%
NIPPON TELEGRAPH & TELEPHONE CORP NTT	-4.4%
TAKEDA PHARMACEUTICAL CO LTD	-5.1%

Worst Performers

	Return %
GSK PLC	-32.1%
KONINKLIJKE PHILIPS NV	-27.0%
ASSOCIATED BRITISH FOODS PLC	-26.7%
TELIA COMPANY AB	-24.6%
ESSITY AKTIEBOLAG	-23.7%
SANOFI	-23.7%
SNAM SPA	-22.2%
TOYOTA INDUSTRIES CORP	-22.1%
ENEL ENTE NAZIONALE PER L'ENERGIA ELETTRICA SPA, ROMA	-21.2%
SONY GROUP CORPORATION	-21.1%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Attribution Effects					Returns		Sector Weights	
	Total Effects		Selection Effect	Allocation Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	0.26%		0.45%	-0.07%	-0.12%	0.03%	-6.10%	4.25%	6.03%
Materials	-0.09%		-0.97%	-0.13%	1.01%	-20.53%	-7.81%	2.16%	8.03%
Industrials	-1.12%		-0.86%	0.14%	-0.40%	-13.77%	-8.22%	17.00%	11.81%
Consumer Discretionary	0.02%		0.03%	0.07%	-0.07%	-14.60%	-13.03%	9.38%	11.73%
Consumer Staples	-0.65%		-1.14%	-0.14%	0.63%	-20.67%	-6.35%	5.11%	8.94%
Health Care	-1.62%		-0.63%	-0.10%	-0.89%	-17.70%	-10.89%	18.10%	9.80%
Financials	0.15%		-0.01%	-0.13%	0.29%	-8.75%	-7.90%	11.63%	20.29%
Information Technology	0.39%		0.19%	0.02%	0.18%	-9.86%	-12.18%	6.48%	11.01%
Communication Services	-0.04%		0.29%	-0.09%	-0.24%	-14.77%	-16.47%	7.63%	6.50%
Utilities	-1.13%		-0.20%	-0.05%	-0.87%	-17.90%	-10.79%	10.56%	3.39%
Real Estate	0.22%		--	0.14%	--	--	-14.52%	0.00%	2.47%
Cash	0.00%		--	--	--	--	--	0.00%	0.00%
Unclassified	-0.91%		0.00%	-0.38%	-0.52%	-16.68%	--	7.69%	0.00%
Portfolio	**-4.52%**	**=**	**-2.86%**	**+ -0.73%**	**+ -0.93%**	**-14.39%**	**-9.87%**	**100.00%**	**100.00%**

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

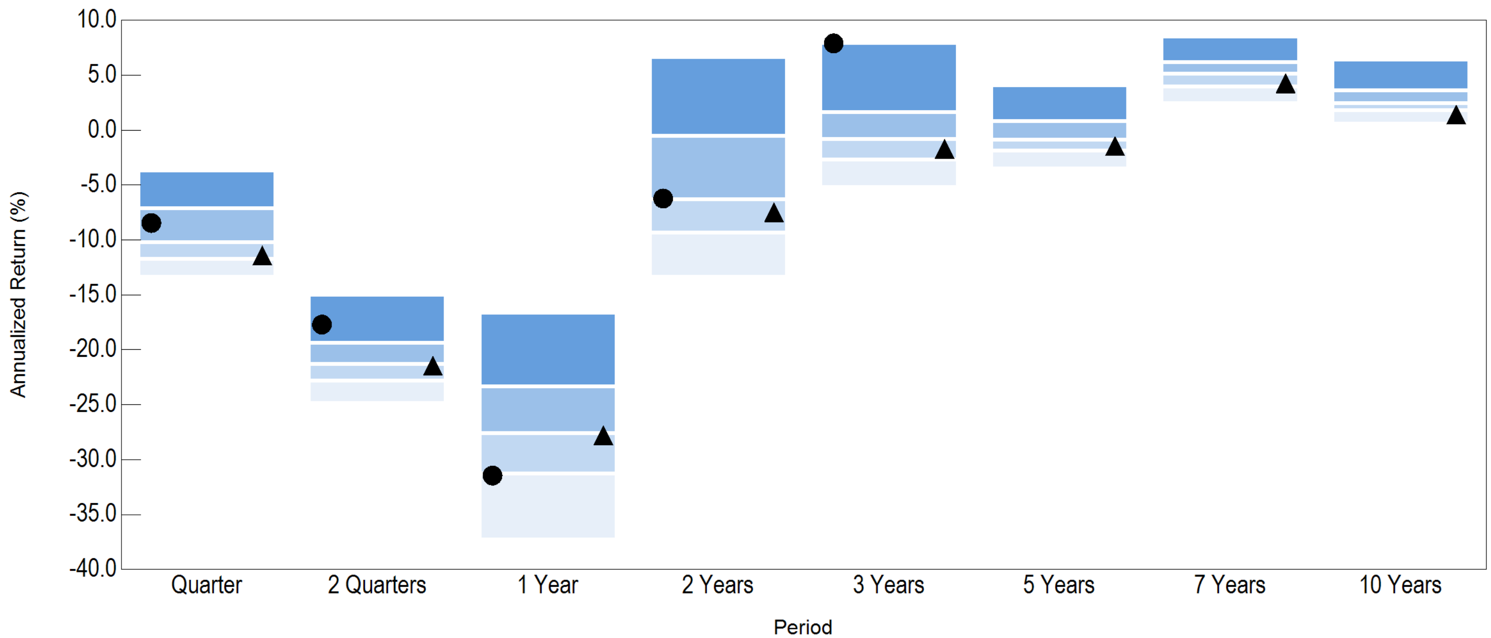
	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Europe									
Austria	--	-15.01%	0.00%	0.11%	--	0.01%	0.01%	--	0.01%
Belgium	--	-13.20%	0.00%	0.63%	--	0.02%	0.04%	--	0.05%
Czech Republic*	--	-18.34%	0.00%	0.05%	--	0.00%	0.00%	--	0.01%
Denmark	-1.48%	-12.23%	0.74%	1.72%	0.20%	0.02%	0.05%	-0.11%	0.15%
Finland	--	-7.02%	0.00%	0.62%	--	-0.02%	0.04%	--	0.01%
France	-19.59%	-8.73%	7.74%	6.98%	-0.81%	0.02%	0.01%	-0.09%	-0.87%
Germany	-20.53%	-12.49%	2.35%	4.85%	-0.42%	0.05%	0.16%	0.21%	0.00%
Greece*	--	-7.40%	0.00%	0.08%	--	0.00%	0.00%	--	0.00%
Hungary*	--	-14.94%	0.00%	0.05%	--	0.00%	0.01%	--	0.00%
Ireland	--	-5.31%	0.00%	0.35%	--	-0.02%	0.02%	--	0.00%
Italy	-19.28%	-8.27%	8.15%	1.42%	-0.17%	0.17%	-0.35%	-0.79%	-1.13%
Netherlands	-26.74%	-10.61%	2.35%	2.56%	-0.44%	0.00%	0.03%	0.04%	-0.37%
Norway	--	-14.84%	0.00%	0.52%	--	0.01%	0.04%	--	0.05%
Poland*	--	-24.35%	0.00%	0.18%	--	0.02%	0.01%	--	0.04%
Portugal	--	-10.81%	0.00%	0.15%	--	0.00%	0.01%	--	0.01%
Spain	-16.88%	-14.04%	5.17%	1.55%	-0.05%	-0.13%	-0.20%	-0.11%	-0.48%
Sweden	-24.18%	-8.87%	4.19%	2.08%	-0.35%	0.07%	-0.11%	-0.35%	-0.73%
Switzerland	-9.06%	-7.43%	4.01%	6.49%	-0.11%	0.00%	0.07%	0.04%	0.00%
United Kingdom	-14.94%	-11.01%	20.70%	9.93%	-0.43%	0.19%	-0.79%	-0.46%	-1.49%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
AsiaPacific									
Australia	-12.67%	-6.62%	1.02%	4.85%	-0.31%	-0.18%	0.25%	0.25%	0.01%
China*	--	-22.44%	0.00%	10.48%	--	1.76%	0.09%	--	1.85%
Hong Kong	-16.81%	-16.94%	4.80%	2.08%	0.00%	-0.33%	0.00%	0.00%	-0.32%
India*	--	6.60%	0.00%	3.79%	--	-0.55%	0.12%	--	-0.43%
Indonesia*	--	7.96%	0.00%	0.54%	--	-0.08%	0.01%	--	-0.07%
Japan	-10.61%	-7.58%	34.67%	13.86%	-0.45%	0.66%	-1.18%	-0.67%	-1.64%
Korea*	--	-17.09%	0.00%	3.34%	--	0.11%	0.30%	--	0.41%
Malaysia*	--	-7.31%	0.00%	0.43%	--	-0.01%	0.02%	--	0.01%
New Zealand	--	-7.98%	0.00%	0.11%	--	-0.01%	0.01%	--	0.00%
Philippines*	--	-13.55%	0.00%	0.21%	--	0.01%	0.01%	--	0.02%
Singapore	-1.24%	-1.51%	3.37%	0.90%	0.01%	0.15%	-0.08%	0.01%	0.09%
Taiwan*	--	-13.99%	0.00%	4.31%	--	0.14%	0.25%	--	0.40%
Thailand*	--	-2.85%	0.00%	0.56%	--	-0.05%	0.04%	--	-0.01%
Americas									
Brazil*	--	8.53%	0.00%	1.45%	--	-0.25%	0.05%	--	-0.19%
Canada	--	-7.80%	0.00%	8.10%	--	-0.24%	0.49%	--	0.25%
Chile*	--	2.75%	0.00%	0.15%	--	-0.02%	0.00%	--	-0.01%
Colombia*	--	-18.30%	0.00%	0.05%	--	0.00%	0.00%	--	0.01%
Mexico*	--	-5.62%	0.00%	0.62%	--	0.01%	0.00%	--	0.01%
Peru*	--	-0.90%	0.00%	0.07%	--	0.00%	0.00%	--	0.00%

Mondrian Performance Attribution vs. MSCI ACWI ex USA Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Other									
Egypt*	--	-2.44%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
Israel	--	-3.34%	0.00%	0.47%	--	-0.01%	0.01%	--	-0.01%
Kuwait*	--	-5.65%	0.00%	0.24%	--	0.00%	0.00%	--	0.00%
Qatar*	--	0.94%	0.00%	0.31%	--	-0.02%	0.00%	--	-0.02%
Saudi Arabia*	--	-0.68%	0.00%	1.25%	--	-0.05%	0.00%	--	-0.05%
South Africa*	--	-12.25%	0.00%	1.05%	--	-0.01%	0.09%	--	0.08%
Turkey*	--	16.40%	0.00%	0.08%	--	-0.03%	0.01%	--	-0.02%
United Arab Emirates*	--	-2.53%	0.00%	0.38%	--	-0.01%	0.00%	--	-0.01%
Totals									
Americas	--	-5.26%	0.00%	10.43%	--	-0.50%	0.55%	--	0.05%
Europe	-17.24%	-10.20%	55.38%	40.30%	-2.81%	0.09%	-0.94%	-1.05%	-4.72%
Asia/Pacific	-10.62%	-11.12%	43.85%	45.46%	0.46%	0.03%	-0.15%	-0.02%	0.32%
Other	--	-4.20%	0.00%	3.81%	--	-0.13%	0.11%	--	-0.02%
Cash	0.46%	--	0.76%	0.00%	0.00%	0.04%	0.00%	0.00%	0.04%
Total	**-14.20%**	**-9.87%**	**100.00%**	**100.00%**	**-2.35%**	**-0.48%**	**-0.43%**	**-1.07%**	**-4.33%**
Totals									
Developed	-14.31%	-9.16%	99.24%	70.32%	-3.77%	0.40%	-1.47%	-1.55%	-6.39%
Emerging*	--	-11.57%	0.00%	29.68%	--	0.98%	1.04%	--	2.02%
Cash	0.46%	--	0.76%	0.00%	0.00%	0.04%	0.00%	0.00%	0.04%



	Return (Rank)															
5th Percentile	-3.72		-14.99		-16.67		6.60		7.89		4.04		8.52		6.38	
25th Percentile	-7.08		-19.31		-23.28		-0.51		1.66		0.83		6.22		3.65	
Median	-10.16		-21.25		-27.53		-6.26		-0.77		-0.83		5.15		2.46	
75th Percentile	-11.67		-22.77		-31.21		-9.29		-2.67		-1.83		4.03		1.84	
95th Percentile	-13.35		-24.81		-37.25		-13.33		-5.16		-3.46		2.48		0.61	
# of Portfolios	405		405		405		386		366		324		288		221	
● Newton Emerging Mkt	-8.45	(34)	-17.70	(14)	-31.45	(77)	-6.23	(50)	7.90	(5)	--	(--)	--	(--)	--	(--)
▲ MSCI Emerging Markets Gross	-11.42	(72)	-21.46	(54)	-27.80	(54)	-7.47	(61)	-1.71	(65)	-1.44	(64)	4.26	(68)	1.42	(82)

Characteristics

	Portfolio	MSCI Emerging Markets Gross
Number of Holdings	55	1,384
Weighted Avg. Market Cap. ($B)	78.2	86.9
Median Market Cap. ($B)	28.4	5.5
Price To Earnings	18.4	10.1
Price To Book	4.0	2.5
Price To Sales	3.3	1.0
Return on Equity (%)	20.8	14.6
Yield (%)	1.4	3.8
Beta	1.0	1.0

Top Holdings

TAIWAN SEMICONDUCTOR MANUFACTURING CO LTD	4.9%
AIA GROUP LTD	4.0%
YUM CHINA HOLDINGS INC	3.9%
TATA CONSULTANCY SERVICES LTD	3.9%
PROSHARES ULTRA SEMICONDUCTORS	3.8%
H D F C BANK LTD	3.7%
TENCENT HOLDINGS LTD	3.7%
WALMART DE MEXICO 'V'	3.3%
HINDUSTAN UNILEVER LTD	3.2%
SHENZHEN INOVANCE TECHNOLOGY CO LTD	3.2%

Best Performers

	Return %
MYER HOLDINGS LTD	76.0%
OZ MINERALS LIMITED	36.2%
LIVENT CORP (LTHM)	35.1%
TITAN COMPANY LTD	30.9%
MERCADOLIBRE INC (MELI)	30.0%
ASIAN PAINTS (IN:API)	20.4%
ICICI BANK (IN:ICG)	19.1%
JUBILANT FOODWORKS LTD	18.3%
WEG SA	18.2%
HINDUSTAN UNILEVER LTD	17.4%

Worst Performers

	Return %
PHARMARON BEIJING CO LTD	-51.4%
KINGDEE INTERNATIONAL SOFTWARE GROUP CO LTD	-44.1%
LONGI GREEN ENERGY TECHNOLOGY CO LTD	-32.3%
ALIBABA GROUP HOLDING LTD	-30.4%
WUXI LEAD INTELLIGENT EQUIPMENT CO LTD	-29.5%
TENCENT HOLDINGS LTD	-24.9%
PING AN INSURANCE GROUP	-24.8%
PROSHARES ULTRA SEMICONDUCTORS (USD)	-24.5%
BY-HEALTH CO LTD	-23.4%
AIA GROUP LTD	-22.7%

Newton Emerging Mkt Performance Attribution vs. MSCI Emerging Markets Gross

	Attribution Effects					Returns		Sector Weights	
	Total Effects		Selection Effect		Allocation Effect		Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	-0.29%		--		-0.45%		--	--	-2.28%	0.00%	4.99%
Materials	1.17%		2.64%		-0.23%		-1.24%	23.67%	-7.31%	3.87%	8.40%
Industrials	0.02%		0.09%		0.13%		-0.21%	-8.91%	-9.94%	10.63%	5.61%
Consumer Discretionary	2.27%		2.28%		0.24%		-0.25%	-2.59%	-18.85%	12.19%	14.86%
Consumer Staples	0.81%		0.18%		0.73%		-0.10%	-1.79%	-4.54%	16.36%	6.14%
Health Care	-1.11%		-1.62%		0.02%		0.49%	-51.45%	-13.91%	3.10%	3.96%
Financials	-0.52%		-0.81%		-0.20%		0.50%	-7.59%	-5.22%	17.82%	21.26%
Information Technology	-0.36%		-0.05%		-0.10%		-0.20%	-14.80%	-15.43%	26.14%	19.09%
Communication Services	0.36%		0.20%		0.07%		0.09%	-16.52%	-19.32%	9.89%	10.63%
Utilities	-0.12%		--		-0.20%		--	--	-4.09%	0.00%	2.91%
Real Estate	0.25%		--		0.22%		--	--	-19.76%	0.00%	2.13%
Cash	0.00%		--		--		--	--	--	0.00%	0.00%
Portfolio	**2.48%**	**=**	**2.91%**	**+**	**0.22%**	**+**	**-0.65%**	**-9.09%**	**-11.57%**	**100.00%**	**100.00%**

Newton Emerging Mkt Performance Attribution vs. MSCI Emerging Markets Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Europe									
Czech Republic*	--	-18.34%	0.00%	0.16%	--	0.01%	0.01%	--	0.02%
Greece*	--	-7.40%	0.00%	0.25%	--	-0.02%	0.02%	--	0.00%
Hungary*	--	-14.94%	0.00%	0.16%	--	-0.01%	0.02%	--	0.01%
Luxembourg	7.52%	-11.57%	2.15%	0.00%	0.00%	0.00%	0.00%	0.34%	0.34%
Netherlands	-10.56%	-10.73%	2.19%	0.00%	0.00%	0.07%	-0.13%	0.01%	-0.05%
Poland*	--	-24.35%	0.00%	0.60%	--	0.05%	0.05%	--	0.10%

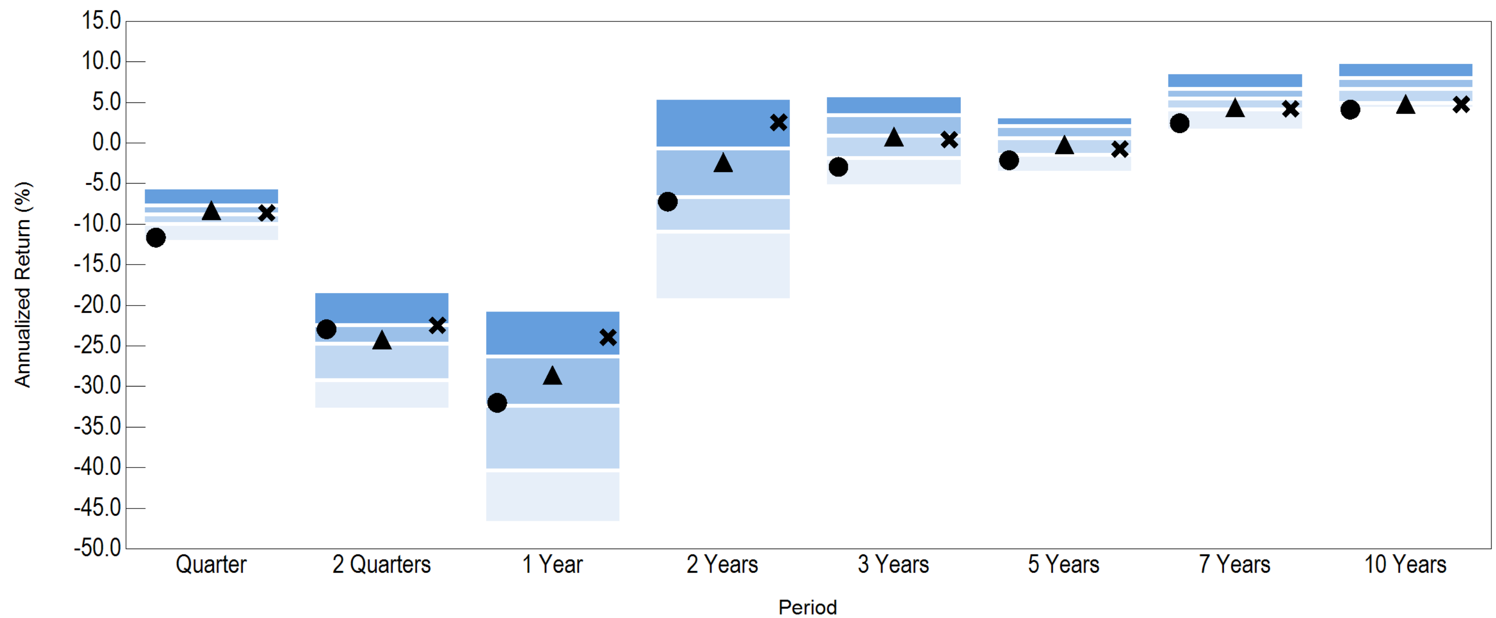
Newton Emerging Mkt Performance Attribution vs. MSCI Emerging Markets Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
AsiaPacific									
Australia	36.21%	-6.62%	0.75%	0.00%	0.00%	0.06%	-0.07%	0.34%	0.33%
China*	-21.56%	-22.44%	37.71%	35.29%	0.95%	-0.33%	-0.71%	0.06%	-0.02%
Hong Kong	-25.19%	-16.97%	7.88%	0.00%	0.00%	-0.70%	0.00%	-0.65%	-1.35%
India*	5.30%	6.60%	23.68%	12.75%	-0.17%	1.95%	-0.34%	-0.15%	1.30%
Indonesia*	--	7.96%	0.00%	1.82%	--	-0.33%	0.04%	--	-0.29%
Japan	-12.51%	-7.58%	1.80%	0.00%	0.00%	0.12%	-0.10%	-0.09%	-0.08%
Korea*	-11.57%	-17.09%	5.07%	11.27%	0.69%	0.00%	0.53%	-0.38%	0.84%
Malaysia*	--	-7.31%	0.00%	1.47%	--	-0.09%	0.07%	--	-0.01%
Philippines*	--	-13.55%	0.00%	0.72%	--	0.00%	0.04%	--	0.04%
Singapore	-16.17%	-1.50%	1.23%	0.00%	0.00%	0.11%	0.00%	-0.21%	-0.10%
Taiwan*	-13.53%	-13.99%	6.14%	14.50%	0.07%	0.00%	0.49%	-0.04%	0.52%
Thailand*	--	-2.85%	0.00%	1.90%	--	-0.22%	0.12%	--	-0.10%
Americas									
Argentina*	29.98%	19.87%	1.01%	0.00%	0.00%	0.28%	0.00%	0.10%	0.39%
Brazil*	16.96%	8.53%	3.40%	4.88%	0.43%	-0.30%	0.05%	-0.13%	0.04%
Chile*	--	2.75%	0.00%	0.51%	--	-0.07%	0.01%	--	-0.05%
Colombia*	--	-18.30%	0.00%	0.16%	--	0.00%	0.01%	--	0.02%
Mexico*	2.52%	-5.62%	2.94%	2.09%	0.17%	0.02%	0.00%	0.07%	0.26%
Peru*	2.41%	-0.90%	1.10%	0.22%	0.01%	0.06%	0.00%	0.03%	0.10%
United States	35.08%	-4.81%	1.46%	0.00%	0.00%	0.05%	0.00%	0.58%	0.63%

Newton Emerging Mkt Performance Attribution vs. MSCI Emerging Markets Gross

	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Other									
Egypt*	--	-2.44%	0.00%	0.07%	--	-0.01%	0.00%	--	0.00%
Kuwait*	--	-5.65%	0.00%	0.82%	--	-0.03%	0.01%	--	-0.02%
Qatar*	--	0.94%	0.00%	1.05%	--	-0.09%	0.00%	--	-0.09%
Saudi Arabia*	--	-0.68%	0.00%	4.23%	--	-0.32%	0.00%	--	-0.31%
South Africa*	-5.10%	-12.25%	1.29%	3.53%	0.28%	-0.10%	0.19%	-0.18%	0.19%
Turkey*	--	16.40%	0.00%	0.28%	--	-0.10%	0.04%	--	-0.07%
United Arab Emirates*	--	-2.53%	0.00%	1.27%	--	-0.07%	0.00%	--	-0.07%
Totals									
Americas	15.07%	3.58%	9.91%	7.85%	0.80%	0.29%	0.08%	0.21%	1.38%
Europe	-1.60%	-18.60%	4.34%	1.18%	0.15%	-0.10%	-0.04%	0.39%	0.41%
Asia/Pacific	-12.38%	-13.98%	84.28%	79.72%	1.05%	-0.11%	0.07%	0.06%	1.08%
Other	-5.10%	-4.32%	1.29%	11.24%	0.62%	-0.70%	0.24%	-0.55%	-0.38%
Cash	0.46%	--	0.18%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%
Total	**-9.07%**	**-11.57%**	**100.00%**	**100.00%**	**2.62%**	**-0.59%**	**0.35%**	**0.11%**	**2.50%**
Totals									
Developed	-9.69%	--	17.48%	0.00%	0.00%	0.00%	-0.30%	0.02%	-0.28%
Emerging*	-8.96%	-11.57%	82.35%	100.00%	2.56%	0.00%	0.66%	-0.45%	2.77%
Cash	0.46%	--	0.18%	0.00%	0.00%	0.01%	0.00%	0.00%	0.01%

eV ACWI ex-US Small Cap Equity Gross Return Comparison



	Return (Rank)															
5th Percentile	-5.50		-18.30		-20.55		5.49		5.85		3.27		8.71		9.93	
25th Percentile	-7.67		-22.36		-26.24		-0.60		3.45		2.11		6.69		8.08	
Median	-8.75		-24.71		-32.32		-6.59		0.96		0.61		5.54		6.74	
75th Percentile	-9.90		-29.16		-40.28		-10.91		-1.82		-1.38		4.18		4.94	
95th Percentile	-12.14		-32.83		-46.75		-19.35		-5.30		-3.59		1.61		4.27	
# of Portfolios	58		58		58		54		51		42		39		26	
● Templeton	-11.64	(95)	-22.95	(28)	-32.01	(50)	-7.22	(53)	-2.95	(87)	-2.12	(86)	2.44	(92)	4.13	(97)
▲ MSCI ACWI ex US Small Cap Gross	-8.25	(40)	-24.19	(46)	-28.57	(41)	-2.33	(33)	0.80	(55)	-0.16	(65)	4.39	(71)	4.83	(85)
✕ MSCI ACWI ex US Small Cap Value GD	-8.61	(49)	-22.46	(26)	-23.93	(18)	2.55	(17)	0.43	(58)	-0.75	(69)	4.22	(75)	4.75	(86)

Characteristics

	Portfolio	MSCI ACWI ex US Small Cap Gross
Number of Holdings	117	4,380
Weighted Avg. Market Cap. ($B)	1.8	2.1
Median Market Cap. ($B)	1.1	0.9
Price To Earnings	12.4	10.4
Price To Book	2.1	2.1
Price To Sales	1.0	0.9
Return on Equity (%)	13.7	12.1
Yield (%)	3.5	3.5
Beta	0.9	1.0

Top Holdings

SANLORENZO SPA	2.1%
M DIAS BRANCO INDUSTRIA ON	2.1%
BARCO NV, KORTRIJK	1.9%
MAN GROUP LIMITED	1.9%
MEITEC CORP	1.9%
TSUMURA & CO	1.8%
TECHNOGYM SPA	1.7%
ISHARES MSCI EAFE SMALL-CAP ETF	1.6%
TECHNOPRO HOLDINGS INC	1.6%
CANADIAN WESTERN BANK	1.6%

Best Performers

	Return %
M DIAS BRANCO INDUSTRIA ON (BR:MDB)	62.4%
JOHNSON HEALTH TECH. (TW:JHT)	28.1%
NAYAX LTD	26.7%
TOPKEY CORP	18.8%
EN-JAPAN INC	18.3%
SIEGFRIED HOLDING AG, ZOFINGEN	17.2%
ONESPAWORLD HOLDINGS LTD (OSW)	17.2%
IDOM INC	11.5%
SHIN ZU SHING (TW:SZS)	10.2%
BRUNCELLO CUCINELLI S.P.A.	9.2%

Worst Performers

	Return %
ZUR ROSE GROUP AG	-59.9%
VIVA BIOTECH HOLDINGS	-51.1%
SECO SPA COMSTK	-40.6%
XTEP INTERNATIONAL HOLDINGS LTD	-40.5%
SHANGHAI HAOHAI BIOLOGICAL TECHNOLOGY CO LTD	-37.7%
VALUE PARTNERS GROUP LTD	-37.2%
AT & S AUSTRIA TECHNOLOGIE & SYSTEMTECHNIK AG, LEOBEN	-37.0%
ADESSO SE	-33.7%
FLOW TRADERS NV	-31.9%
MERIDA INDUSTRY (TW:MER)	-31.6%

Templeton Performance Attribution vs. MSCI ACWI ex US Small Cap Gross

	Attribution Effects					Returns		Sector Weights	
	Total Effects	Selection Effect	Allocation Effect	Currency Effect	Interaction Effects	Portfolio	Benchmark	Portfolio	Benchmark
Energy	-0.17%	-0.20%	-0.16%	0.10%	0.10%	-6.90%	-0.33%	2.02%	3.90%
Materials	-0.14%	-0.44%	-0.22%	0.30%	0.22%	-9.11%	-4.54%	5.70%	11.53%
Industrials	0.09%	0.18%	0.03%	-0.15%	0.03%	-6.28%	-7.32%	22.65%	19.63%
Consumer Discretionary	-1.29%	-0.43%	0.07%	-0.53%	-0.39%	-10.97%	-7.38%	21.78%	11.38%
Consumer Staples	0.52%	0.47%	-0.02%	-0.11%	0.18%	-1.43%	-9.15%	8.79%	6.37%
Health Care	-0.35%	-0.37%	-0.01%	0.05%	-0.01%	-15.43%	-10.93%	7.24%	7.01%
Financials	-1.53%	-1.45%	0.01%	-0.03%	-0.06%	-20.23%	-6.78%	11.22%	10.78%
Information Technology	-0.90%	-0.56%	-0.06%	-0.09%	-0.19%	-14.01%	-9.86%	14.94%	11.13%
Communication Services	0.02%	-0.13%	0.02%	0.11%	0.02%	-13.52%	-12.61%	3.37%	3.88%
Utilities	0.24%	--	0.04%	0.20%	--	--	-8.94%	0.00%	3.73%
Real Estate	1.08%	--	0.55%	0.53%	--	--	-12.63%	0.00%	10.67%
Cash	0.06%	0.00%	0.06%	0.00%	0.00%	0.46%	--	1.96%	0.00%
Unclassified	-0.03%	0.00%	-0.03%	0.00%	0.00%	-10.64%	--	0.32%	0.00%
Portfolio	**-2.40% =**	**-2.94% +**	**0.27% +**	**0.39% +**	**-0.11%**	**-10.56%**	**-8.16%**	**100.00%**	**100.00%**

Templeton Performance Attribution vs. MSCI ACWI ex US Small Cap Gross

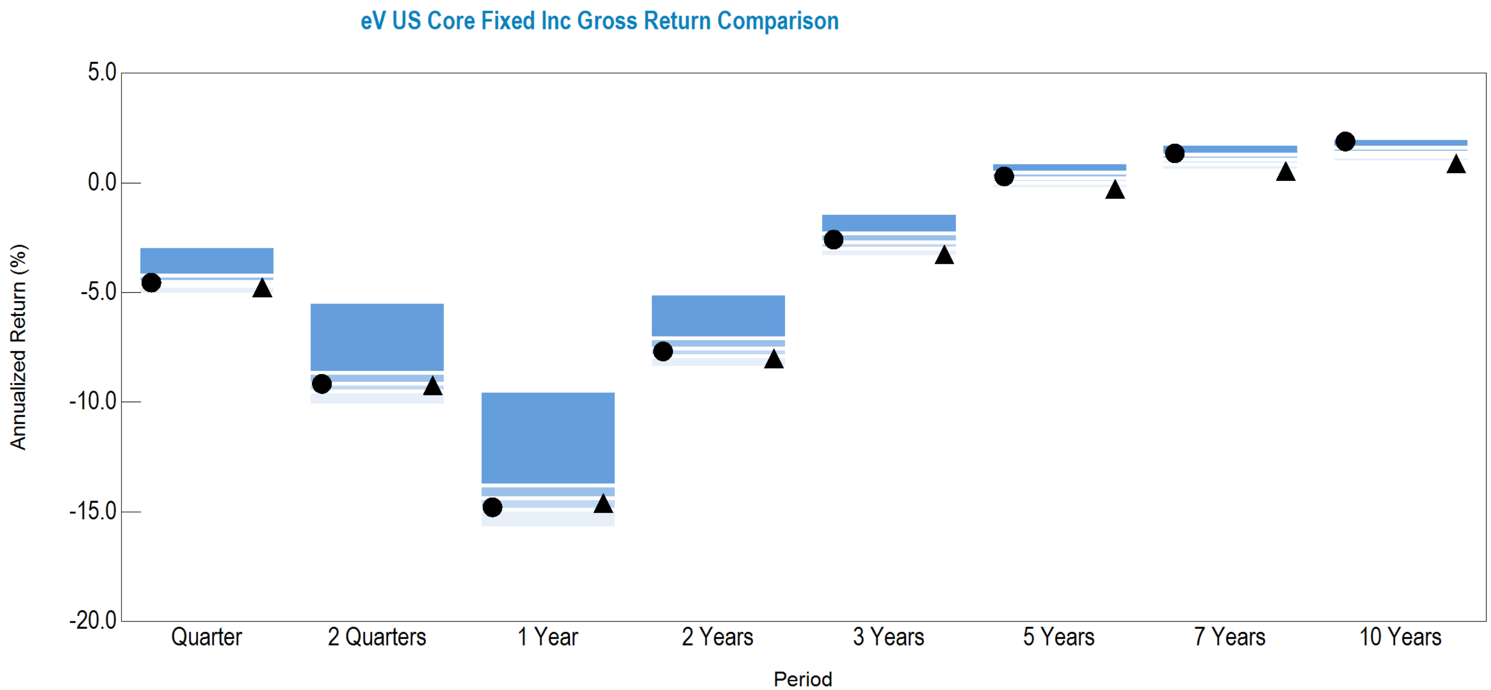
	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Europe									
Austria	-29.23%	-7.62%	1.79%	0.65%	-0.15%	0.01%	-0.04%	-0.26%	-0.45%
Belgium	-12.59%	-15.16%	4.12%	1.05%	0.03%	-0.22%	-0.18%	0.08%	-0.28%
Czech Republic*	--	-4.93%	0.00%	0.01%	--	0.00%	0.00%	--	0.00%
Denmark	-14.62%	-9.90%	0.55%	1.21%	-0.06%	0.01%	0.04%	0.03%	0.02%
Finland	-18.28%	-14.62%	3.51%	1.02%	-0.04%	-0.16%	-0.13%	-0.10%	-0.43%
France	3.06%	-16.31%	0.27%	2.43%	0.50%	0.18%	0.12%	-0.45%	0.35%
Germany	-17.87%	-18.83%	4.34%	3.05%	0.03%	-0.14%	-0.07%	0.01%	-0.17%
Greece*	-7.62%	-7.74%	0.90%	0.16%	0.00%	0.01%	-0.05%	0.00%	-0.04%
Hungary*	--	-21.93%	0.00%	0.01%	--	0.00%	0.00%	--	0.00%
Ireland	--	-0.56%	0.00%	0.41%	--	-0.03%	0.03%	--	-0.01%
Italy	-11.46%	-14.49%	7.39%	1.91%	0.06%	-0.35%	-0.32%	0.18%	-0.43%
Luxembourg	-8.91%	-8.16%	1.30%	0.00%	0.00%	0.00%	-0.08%	-0.01%	-0.08%
Netherlands	-22.11%	-11.14%	2.15%	1.30%	-0.15%	-0.02%	-0.03%	-0.10%	-0.31%
Norway	-14.26%	-13.80%	2.15%	1.52%	-0.01%	-0.02%	-0.05%	0.00%	-0.08%
Poland*	--	-23.80%	0.00%	0.25%	--	0.03%	0.02%	--	0.05%
Portugal	--	-21.82%	0.00%	0.21%	--	0.03%	0.01%	--	0.04%
Spain	-21.01%	-15.21%	0.74%	1.29%	-0.08%	0.04%	0.03%	0.03%	0.03%
Sweden	-16.63%	-14.64%	3.98%	3.66%	-0.08%	-0.02%	-0.02%	-0.01%	-0.12%
Switzerland	-2.06%	-6.98%	3.35%	3.19%	0.15%	0.00%	0.00%	0.01%	0.16%
United Kingdom	-14.50%	-16.18%	11.13%	10.98%	0.14%	-0.01%	0.03%	0.00%	0.17%

Templeton Performance Attribution vs. MSCI ACWI ex US Small Cap Gross

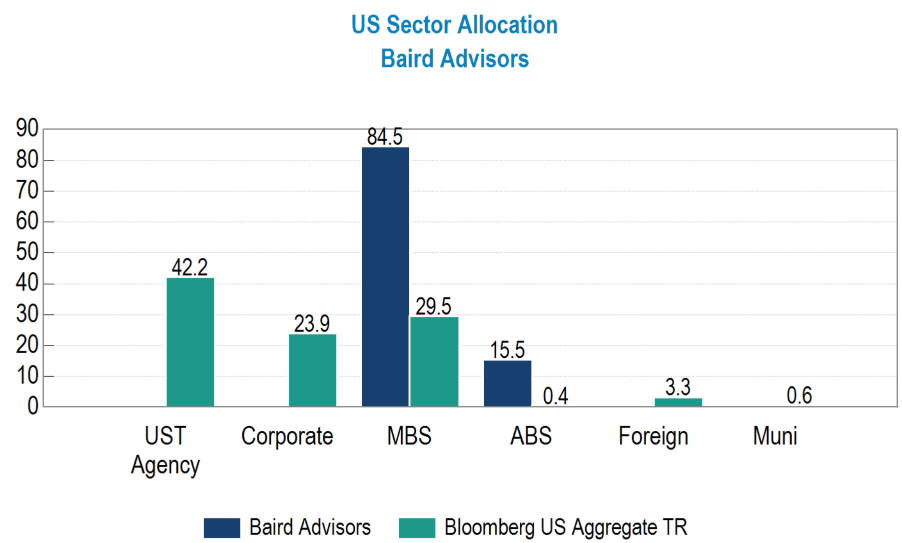
	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
AsiaPacific									
Australia	--	-2.43%	0.00%	6.59%	--	-0.45%	0.45%	--	0.00%
China*	-39.24%	-25.61%	2.98%	2.71%	-0.37%	-0.06%	0.00%	-0.04%	-0.47%
Hong Kong	-24.73%	-16.90%	2.70%	1.51%	-0.12%	-0.17%	0.00%	-0.09%	-0.38%
India*	--	11.67%	0.00%	5.54%	--	-0.97%	0.18%	--	-0.78%
Indonesia*	-7.20%	-1.19%	0.92%	0.69%	-0.04%	0.01%	0.00%	-0.01%	-0.05%
Japan	-2.89%	-4.39%	20.50%	20.50%	0.33%	0.00%	-0.02%	0.00%	0.31%
Korea*	-19.12%	-17.98%	2.42%	3.73%	-0.05%	0.09%	0.12%	0.02%	0.18%
Malaysia*	--	-5.42%	0.00%	0.78%	--	-0.02%	0.04%	--	0.02%
New Zealand	--	-3.85%	0.00%	0.74%	--	-0.06%	0.07%	--	0.01%
Philippines*	-2.68%	-5.20%	0.96%	0.21%	0.01%	0.03%	-0.05%	0.02%	0.00%
Singapore	--	-8.71%	0.00%	1.54%	--	0.05%	0.04%	--	0.10%
Taiwan*	-7.56%	-8.76%	10.77%	5.46%	0.07%	0.00%	-0.34%	0.07%	-0.20%
Thailand*	--	-8.73%	0.00%	1.06%	--	0.00%	0.07%	--	0.07%
Americas									
Brazil*	29.82%	7.95%	2.50%	1.52%	0.34%	0.14%	-0.06%	0.22%	0.65%
Canada	-12.89%	-6.03%	4.60%	7.46%	-0.63%	-0.08%	0.25%	0.24%	-0.21%
Chile*	--	5.26%	0.00%	0.15%	--	-0.02%	0.00%	--	-0.01%
Colombia*	--	-35.09%	0.00%	0.06%	--	0.02%	0.00%	--	0.02%
Mexico*	--	1.63%	0.00%	0.51%	--	-0.02%	0.00%	--	-0.02%
Peru*	--	-14.27%	0.00%	0.02%	--	0.00%	0.00%	--	0.00%
United States	-10.64%	-4.81%	0.32%	0.00%	0.00%	-0.01%	0.00%	-0.02%	-0.03%

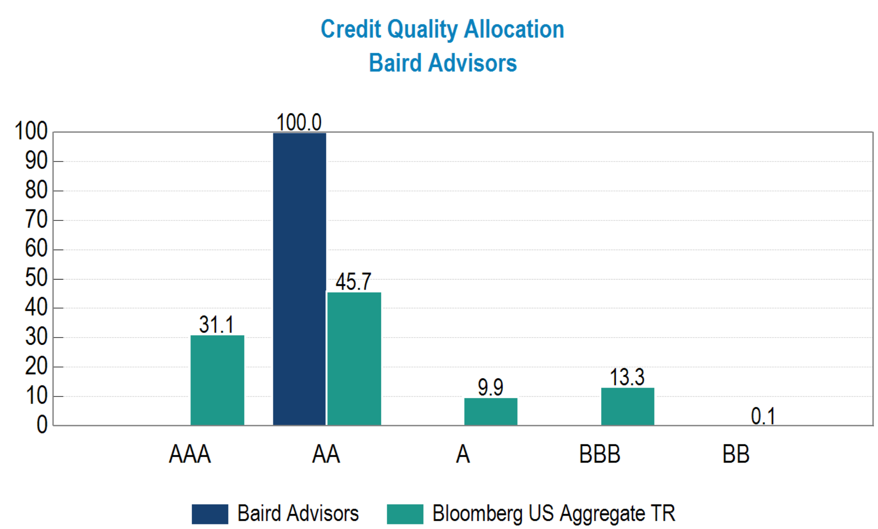
Templeton Performance Attribution vs. MSCI ACWI ex US Small Cap Gross

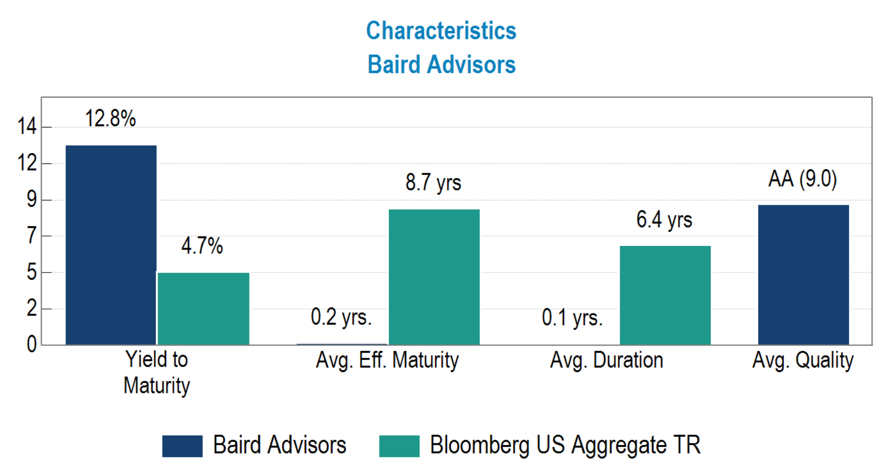
	Returns and Weights				Attribution Effects				
	Manager Return	Index Return	Manager Weight	Index Weight	Selection Effect	Allocation Effect	Currency Effect	Interaction Effect	Total Effects
Other									
Egypt*	--	2.93%	0.00%	0.05%	--	0.00%	0.00%	--	0.00%
Israel	-3.79%	-2.44%	1.65%	2.01%	-0.05%	-0.01%	0.02%	0.01%	-0.02%
Kuwait*	--	-10.29%	0.00%	0.32%	--	0.02%	0.00%	--	0.02%
Qatar*	--	-1.27%	0.00%	0.26%	--	0.00%	0.00%	--	0.00%
Saudi Arabia*	--	4.49%	0.00%	0.76%	--	-0.05%	0.00%	--	-0.05%
South Africa*	--	-5.67%	0.00%	1.05%	--	-0.07%	0.10%	--	0.03%
Turkey*	--	18.48%	0.00%	0.29%	--	-0.10%	0.04%	--	-0.06%
United Arab Emirates*	--	-0.67%	0.00%	0.18%	--	0.00%	0.00%	--	0.00%
Totals									
Americas	1.57%	-3.46%	7.42%	9.72%	0.39%	-0.10%	0.20%	-0.09%	0.40%
Europe	-14.36%	-14.38%	47.67%	34.30%	-0.10%	-0.75%	-0.69%	-0.04%	-1.58%
Asia/Pacific	-9.20%	-5.54%	41.25%	51.06%	-1.89%	-0.24%	0.55%	0.36%	-1.21%
Other	-3.79%	-1.17%	1.65%	4.92%	-0.28%	-0.16%	0.17%	0.19%	-0.09%
Cash	0.46%	--	2.02%	0.00%	0.00%	0.06%	0.00%	0.00%	0.06%
Total	**-10.58%**	**-8.16%**	**100.00%**	**100.00%**	**-1.88%**	**-1.19%**	**0.23%**	**0.42%**	**-2.42%**
Totals									
Developed	-11.40%	-9.21%	76.54%	74.21%	-1.90%	-0.02%	0.14%	-0.06%	-1.83%
Emerging*	-8.68%	-5.13%	21.44%	25.79%	-0.77%	-0.09%	0.09%	0.13%	-0.65%
Cash	0.46%	--	2.02%	0.00%	0.00%	0.06%	0.00%	0.00%	0.06%



	Return (Rank)															
5th Percentile	-2.90		-5.44		-9.50		-5.04		-1.37		0.93		1.78		2.03	
25th Percentile	-4.22		-8.65		-13.79		-7.06		-2.28		0.49		1.30		1.61	
Median	-4.50		-9.14		-14.35		-7.53		-2.70		0.22		1.06		1.39	
75th Percentile	-4.69		-9.49		-14.88		-7.89		-2.97		0.02		0.86		1.21	
95th Percentile	-5.08		-10.14		-15.74		-8.40		-3.36		-0.27		0.57		0.95	
# of Portfolios	215		215		215		209		206		203		200		196	
● **Baird Advisors**	-4.55	(55)	-9.16	(53)	-14.79	(71)	-7.68	(62)	-2.59	(39)	0.30	(40)	1.35	(18)	1.89	(10)
▲ **Bloomberg US Aggregate TR**	-4.75	(82)	-9.22	(58)	-14.60	(63)	-8.00	(82)	-3.26	(93)	-0.27	(95)	0.54	(97)	0.89	(96)


US Sector Allocation
Baird Advisors
90
80
70
60
50
40
30
20
10
0
84.5
42.2
23.9
29.5
15.5
0.4
3.3
0.6
UST Agency
Corporate
MBS
ABS
Foreign
Muni
Baird Advisors
Bloomberg US Aggregate TR


Credit Quality Allocation
Baird Advisors
100
90
80
70
60
50
40
30
20
10
0
100.0
31.1
45.7
9.9
13.3
0.1
AAA
AA
A
BBB
BB
Baird Advisors
Bloomberg US Aggregate TR

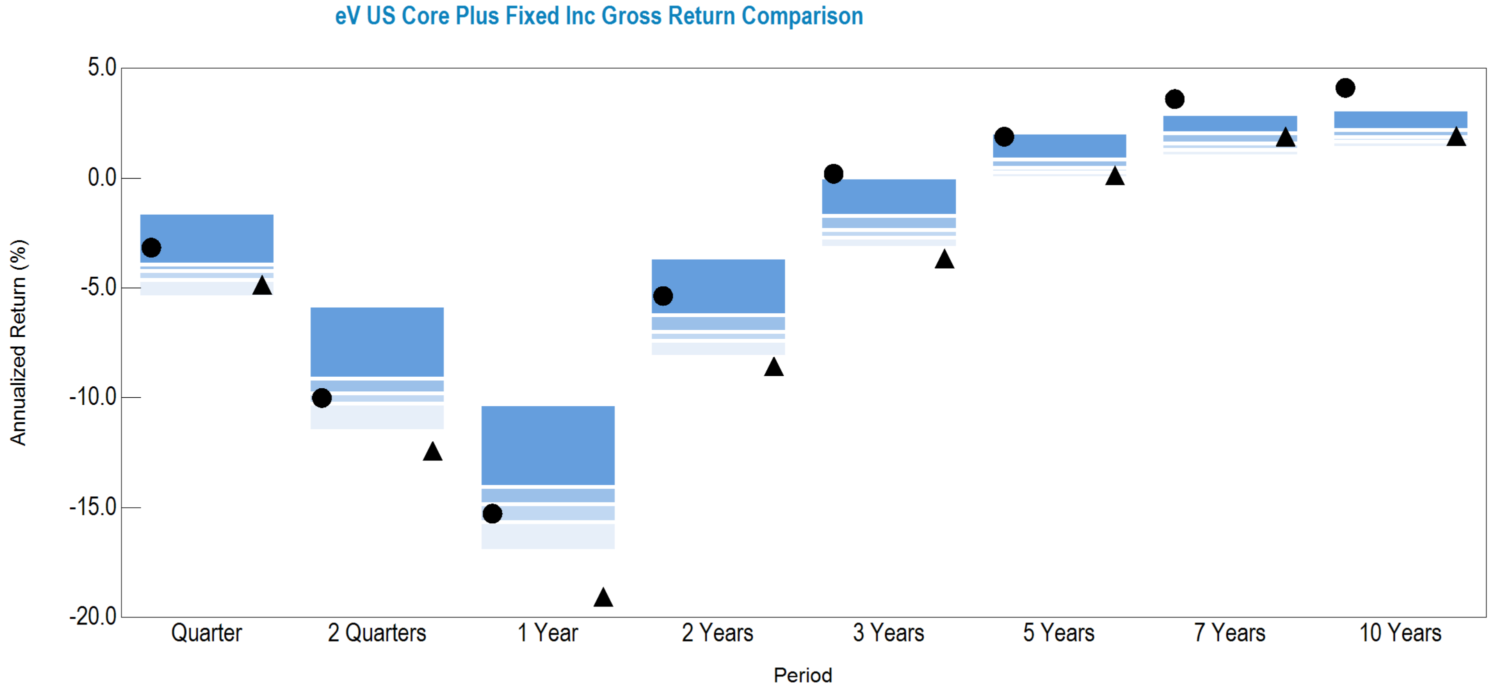

Characteristics
Baird Advisors
14
12
9
7
5
2
0
12.8%
4.7%
0.2 yrs.
8.7 yrs
0.1 yrs.
6.4 yrs
AA (9.0)
Yield to Maturity
Avg. Eff. Maturity
Avg. Duration
Avg. Quality
Baird Advisors
Bloomberg US Aggregate TR

PERFORMANCE BY QUALITY

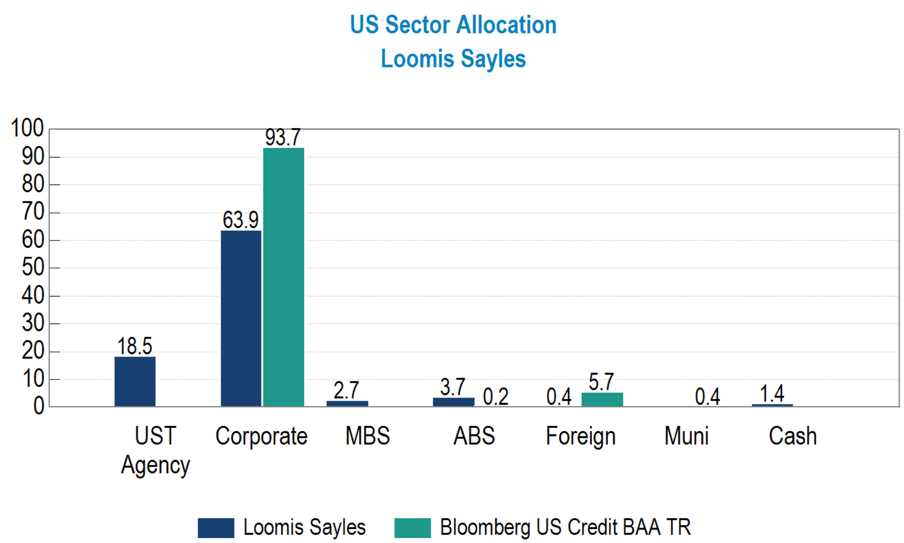
	NUMBER OF ISSUES	FINAL MARKET VALUE ($000)	FINAL MARKET VALUE %	QUARTERLY RETURN %	QUARTERLY CONTRIBUTION TO TOTAL RETURN %
Cash & Equiv	1	13,839	1.2	0.58	0.01
Govt & Agency	161	590,475	51.2	-5.40	-2.76
AAA	41	108,408	9.4	-4.80	-0.45
AA	8	5,766	0.5	-7.70	-0.04
A	42	114,174	9.9	-3.70	-0.37
BAA	125	306,770	26.6	-3.60	-0.96
Below BAA	13	13,839	1.2	1.68	0.02
Other	0	-	0.0	0.00	0.00
Total Account	**391**	**$1,153,272**	**100.0**	**-4.55**	**-4.55**

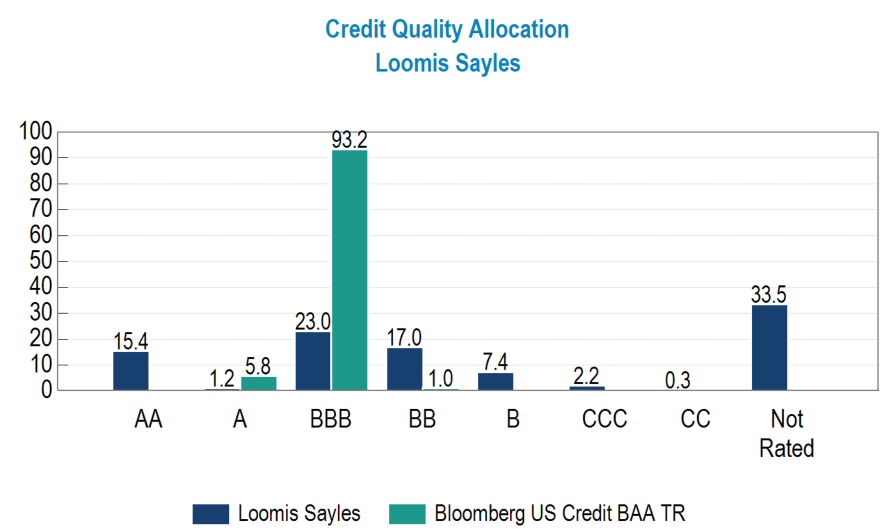
PERFORMANCE BY DURATION

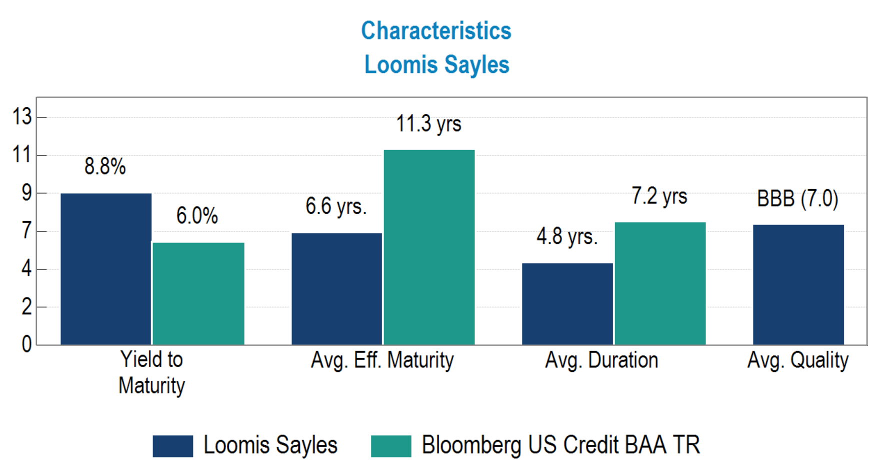
	NUMBER OF ISSUES	FINAL MARKET VALUE ($000)	FINAL MARKET VALUE %	QUARTERLY RETURN %	QUARTERLY CONTRIBUTION TO TOTAL RETURN %
Under 1 Year	17	47,284	4.1	0.50	0.02
1 - 3 Years	63	220,275	19.1	-1.40	-0.27
3 - 6 Years	192	459,002	39.8	-3.84	-1.53
Over 6 Years	119	426,711	37.0	-7.50	-2.78
Total Account	**391**	**$1,153,272**	**100.0**	**-4.55**	**-4.55**



Return (Rank)	Quarter		2 Quarters		1 Year		2 Years		3 Years		5 Years		7 Years		10 Years	
5th Percentile	-1.57		-5.82		-10.30		-3.63		0.02		2.06		2.91		3.12	
25th Percentile	-3.91		-9.11		-14.05		-6.23		-1.71		0.87		2.06		2.22	
Median	-4.21		-9.78		-14.82		-6.99		-2.35		0.49		1.59		1.89	
75th Percentile	-4.61		-10.25		-15.65		-7.38		-2.71		0.29		1.32		1.68	
95th Percentile	-5.40		-11.51		-16.96		-8.11		-3.16		0.02		1.02		1.40	
# of Portfolios	122		122		122		122		120		115		110		105	
● **Loomis Sayles**	-3.16	(11)	-10.01	(68)	-15.27	(66)	-5.36	(14)	0.20	(5)	1.89	(8)	3.60	(1)	4.11	(1)
▲ **Bloomberg US Credit BAA TR**	-4.85	(90)	-12.41	(99)	-19.05	(99)	-8.57	(99)	-3.66	(98)	0.13	(90)	1.90	(31)	1.92	(46)


US Sector Allocation
Loomis Sayles
100
90
80
70
60
50
40
30
20
10
0
18.5
63.9
93.7
2.7
3.7
0.2
0.4
5.7
0.4
1.4
UST Agency
Corporate
MBS
ABS
Foreign
Muni
Cash
Loomis Sayles
Bloomberg US Credit BAA TR


Credit Quality Allocation
Loomis Sayles
100
90
80
70
60
50
40
30
20
10
0
15.4
1.2
5.8
23.0
93.2
17.0
1.0
7.4
2.2
0.3
33.5
AA
A
BBB
BB
B
CCC
CC
Not Rated
Loomis Sayles
Bloomberg US Credit BAA TR


Characteristics
Loomis Sayles
13
11
9
7
4
2
0
8.8%
6.0%
6.6 yrs.
11.3 yrs
4.8 yrs.
7.2 yrs
BBB (7.0)
Yield to Maturity
Avg. Eff. Maturity
Avg. Duration
Avg. Quality
Loomis Sayles
Bloomberg US Credit BAA TR

Summary

Account Return	-3.06
Benchmark Return	-4.85
Excess Return	1.80
Sector Allocation	0.37
Security Selection	1.58
Trading	-0.14
Pricing Differences	-0.01
Compounding	0.00

Details

Scheme	Average Weight Account	Average Weight Benchmark	Return Account	Return Benchmark	Contribution to Return Account	Contribution to Return Benchmark	Sector Allocation Effect	Security Selection Effect	Total Effect	Excess Total Effect
Total	100.00	100.00	-2.92	-4.86	-2.92	-4.86	0.37	1.58	1.94	1.94
CASH	3.68	0.00	1.36	-4.86	0.05	0.00	0.00	0.11	0.11	0.11
AAA	18.30	0.00	-3.24	-4.86	-1.04	0.00	0.00	-0.03	-0.03	-0.03
AA	0.37	0.00	-0.07	-4.86	-0.03	0.00	0.00	-0.01	-0.01	-0.01
A	2.49	0.01	-3.71	-4.01	-0.12	0.00	-0.03	0.08	0.05	0.05
BAA	31.70	99.91	-4.14	-4.86	-1.38	-4.85	0.00	0.25	0.25	0.25
BA	20.92	0.08	-1.66	-3.33	-0.28	-0.01	0.39	0.26	0.65	0.65
B	9.58	0.00	0.59	-4.86	0.06	0.00	0.00	0.51	0.51	0.51
CAA	3.45	0.00	0.24	-4.86	0.01	0.00	0.00	0.19	0.19	0.19
CA	0.46	0.00	2.53	-4.86	0.01	0.00	0.00	0.04	0.04	0.04
C	0.42	0.00	-11.73	-4.86	-0.05	0.00	0.00	-0.03	-0.03	-0.03
NR	7.08	0.00	-1.14	-4.86	-0.11	0.00	0.00	0.25	0.25	0.25
Unclassified	1.53	0.00	-16.21	2.42	-0.04	0.00	0.00	-0.06	-0.06	-0.06

Summary

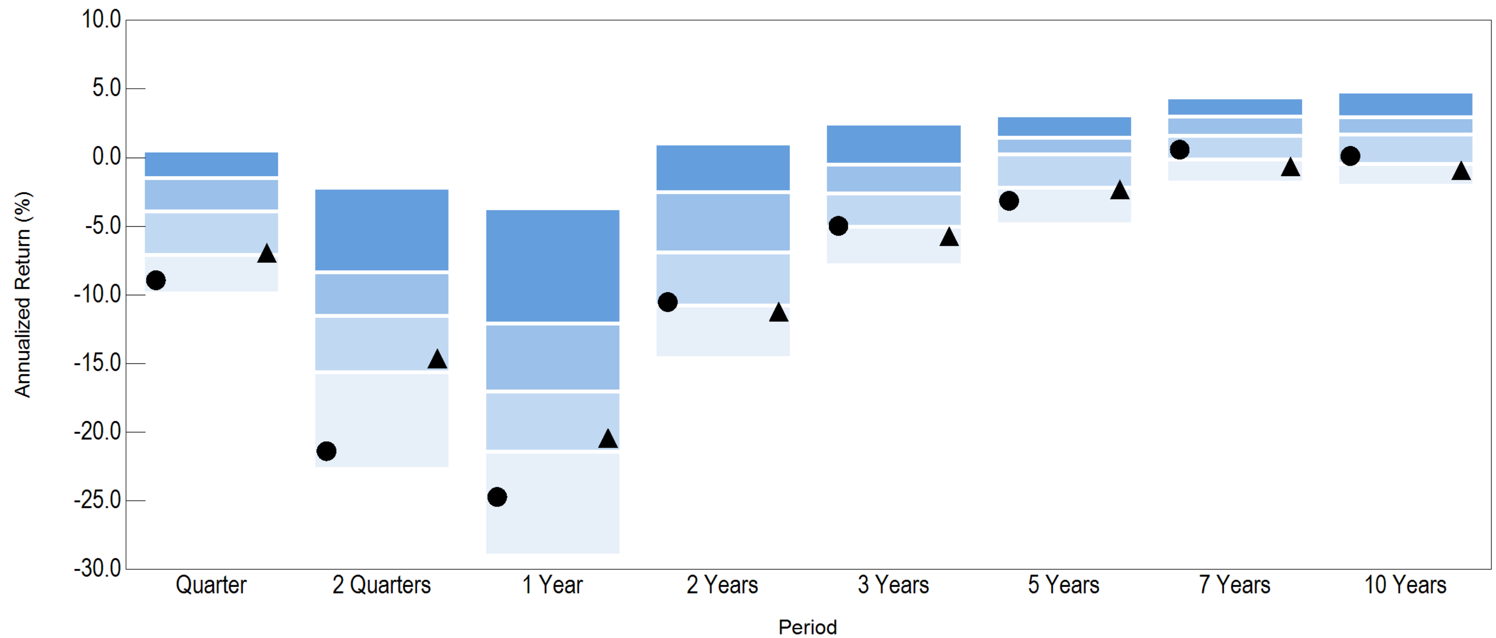
Account Return	-3.06
Benchmark Return	-4.85
Excess Return	1.80
Sector Allocation	1.44
Security Selection	0.50
Trading	-0.14
Pricing Differences	-0.01
Compounding	0.00

Details

Scheme	Average Weight Account	Average Weight Benchmark	Return Account	Return Benchmark	Contribution to Return Account	Contribution to Return Benchmark	Sector Allocation Effect	Security Selection Effect	Total Effect	Excess Total Effect
Total	100.00	100.00	-2.92	-4.86	-2.92	-4.86	1.44	0.50	1.94	1.94
Less than 0.5	7.31	0.05	-0.36	3.83	-0.04	0.00	0.36	-0.24	0.12	0.12
0.5 - 1.0	2.54	0.81	-0.75	-0.07	-0.02	0.00	0.05	-0.02	0.03	0.03
1.0 - 1.5	9.51	3.94	0.44	-0.59	-0.03	-0.02	0.48	0.06	0.53	0.53
1.5 - 2.0	6.35	3.89	-1.94	-0.82	-0.07	-0.03	-0.11	-0.07	-0.18	-0.18
2.0 - 2.5	3.71	5.83	-1.82	-1.40	-0.06	-0.10	-0.11	0.00	-0.11	-0.11
2.5 - 3.0	4.27	4.52	-0.06	-1.71	-0.06	-0.06	0.05	0.02	0.07	0.07
3.0 - 3.5	5.23	5.22	-0.71	-2.13	-0.04	-0.12	0.00	0.08	0.07	0.07
3.5 - 4.0	6.64	4.81	0.14	-2.62	-0.04	-0.15	0.04	0.15	0.19	0.19
4.0 - 4.5	6.55	5.42	-2.50	-3.09	-0.21	-0.14	0.04	0.02	0.06	0.06
4.5 - 5.0	5.27	4.45	-0.58	-3.50	-0.02	-0.17	0.01	0.17	0.18	0.18
5.0 - 5.5	6.37	4.25	-3.14	-3.70	-0.17	-0.17	0.02	0.04	0.06	0.06
5.5 - 6.0	4.04	3.56	-3.99	-4.20	-0.16	-0.14	0.01	0.00	0.00	0.00
6.0 - 6.5	7.62	4.59	-2.81	-4.32	-0.32	-0.23	0.01	0.07	0.09	0.09
6.5 - 7.0	4.81	3.40	-3.25	-4.70	-0.11	-0.12	0.00	0.08	0.09	0.09
7.0 - 7.5	3.52	4.56	-4.96	-5.61	-0.18	-0.36	0.02	0.02	0.04	0.04
7.5 - 8.0	2.41	4.33	-4.19	-5.43	-0.03	-0.15	0.01	0.04	0.05	0.05
8.0 - 8.5	1.51	1.55	-5.34	-6.95	-0.11	-0.10	0.00	-0.03	-0.03	-0.03
8.5 - 9.0	0.53	1.36	-2.12	-6.40	0.06	-0.12	0.03	0.03	0.06	0.06
9.0 - 9.5	0.09	1.81	-5.64	-7.53	0.00	-0.14	0.05	0.00	0.05	0.05
9.5 - 10.0	0.09	1.87	-1.92	-6.93	-0.01	-0.11	0.03	0.00	0.03	0.03

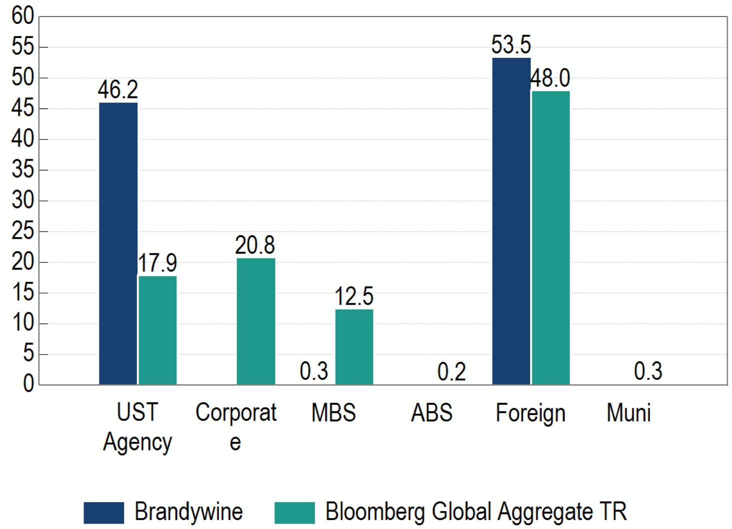
Scheme	Average Weight Account	Average Weight Benchmark	Return Account	Return Benchmark	Contribution to Return Account	Contribution to Return Benchmark	Sector Allocation Effect	Security Selection Effect	Total Effect	Excess Total Effect
10.0 - 10.5	0.53	1.27	-7.15	-7.30	-0.03	-0.09	0.02	0.01	0.03	0.03
10.5 - 11.0	0.23	1.45	-11.58	-6.73	-0.12	-0.09	0.00	-0.04	-0.04	-0.04
11.0 - 11.5	0.81	1.11	-4.85	-8.34	0.00	-0.11	0.03	0.03	0.06	0.06
11.5 - 12.0	0.84	1.36	-1.17	-8.58	-0.04	-0.18	0.04	0.05	0.09	0.09
12.0 - 12.5	0.57	2.14	-9.89	-8.29	-0.05	-0.29	0.10	0.00	0.10	0.10
12.5 - 13.0	0.65	2.95	1.17	-8.13	0.01	-0.33	0.14	0.01	0.16	0.16
13.0 - 13.5	0.13	3.55	9.98	-8.94	0.02	-0.40	0.17	0.02	0.20	0.20
13.5 - 14.0	0.07	3.54	-1.10	-8.08	-0.05	-0.25	0.08	-0.01	0.07	0.07
14.0 - 14.5	0.70	3.14	-6.24	-8.44	-0.16	-0.19	0.00	0.04	0.04	0.04
14.5 - 15.0	0.93	2.53	-0.04	-9.69	-0.11	-0.17	0.04	0.00	0.03	0.03
15.0 - 15.5	0.27	1.79	9.38	-9.42	0.04	-0.12	0.07	0.02	0.09	0.09
15.5 - 16.0	0.33	1.62	5.81	-9.48	0.02	-0.13	0.07	0.01	0.08	0.08
16.0 - 16.5	0.03	1.36	3.03	-9.86	0.02	-0.06	0.04	0.00	0.04	0.04
16.5 - 17.0	0.63	0.89	-4.32	-11.67	-0.26	-0.04	-0.22	0.20	-0.02	-0.02
17.0 - 17.5	1.73	0.58	-6.26	-9.02	-0.39	0.02	-0.14	-0.04	-0.19	-0.19
17.5 - 18.0	3.16	0.25	-0.88	-10.47	-0.16	0.00	0.03	-0.22	-0.19	-0.19
18.0 - 18.5	0.00	0.12	0.00	-6.38	0.00	0.01	-0.01	0.00	-0.01	-0.01
18.5 - 19.0	0.00	0.07	0.00	-7.21	0.00	0.00	0.00	0.00	0.00	0.00
19.0 - 19.5	0.00	0.03	0.00	-0.14	0.00	0.00	0.00	0.00	0.00	0.00
19.5 - 20.0	0.00	0.01	0.00	4.85	0.00	0.00	0.00	0.00	0.00	0.00
20.0 - 20.5	0.00	0.00	0.00	-1.90	0.00	0.00	0.00	0.00	0.00	0.00
21.0 - 21.5	0.00	0.00	0.00	-0.84	0.00	0.00	0.00	0.00	0.00	0.00
22.0 - 22.5	0.00	0.00	0.00	1.76	0.00	0.00	0.00	0.00	0.00	0.00
21.5 - 22.0	0.00	0.00	0.00	2.19	0.00	0.00	0.00	0.00	0.00	0.00
20.5 - 21.0	0.00	0.00	0.00	-0.46	0.00	0.00	0.00	0.00	0.00	0.00

eV All Global Fixed Inc Gross Return Comparison

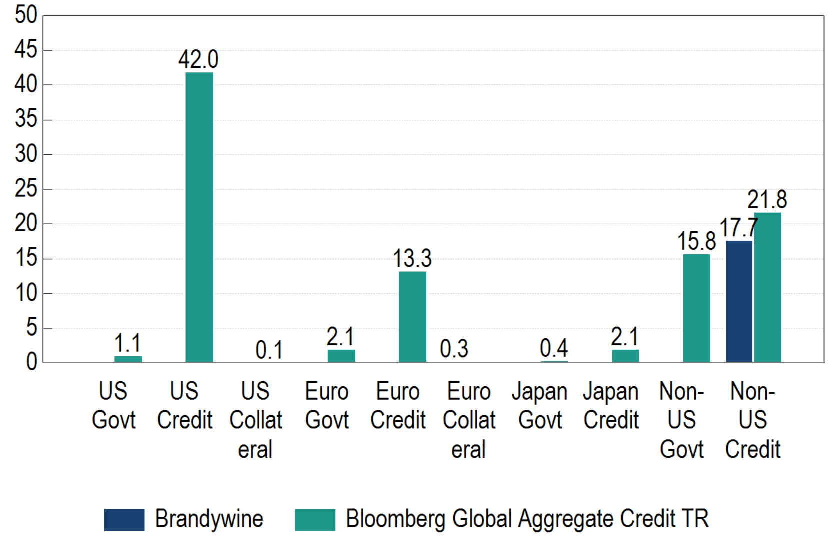


	Return (Rank)															
5th Percentile	0.48		-2.24		-3.73		0.98		2.46		3.04		4.36		4.77	
25th Percentile	-1.46		-8.34		-12.05		-2.51		-0.51		1.49		3.00		2.98	
Median	-3.90		-11.52		-17.02		-6.87		-2.61		0.25		1.63		1.72	
75th Percentile	-7.07		-15.61		-21.41		-10.75		-5.02		-2.17		-0.13		-0.44	
95th Percentile	-9.88		-22.67		-28.96		-14.60		-7.81		-4.83		-1.81		-2.02	
# of Portfolios	525		525		524		517		506		466		428		344	
● Brandywine	-8.93	(91)	-21.38	(94)	-24.72	(90)	-10.52	(73)	-4.97	(75)	-3.15	(89)	0.58	(63)	0.11	(66)
▲ Bloomberg Global Aggregate TR	-6.94	(73)	-14.63	(66)	-20.43	(68)	-11.21	(79)	-5.74	(83)	-2.32	(77)	-0.65	(83)	-0.93	(83)

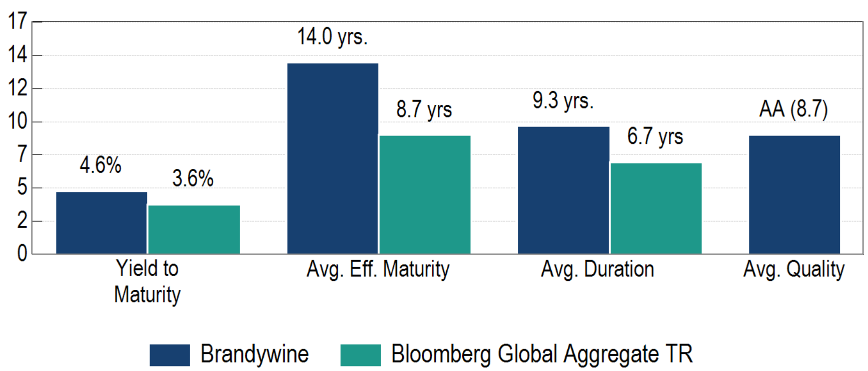
US Sector Allocation



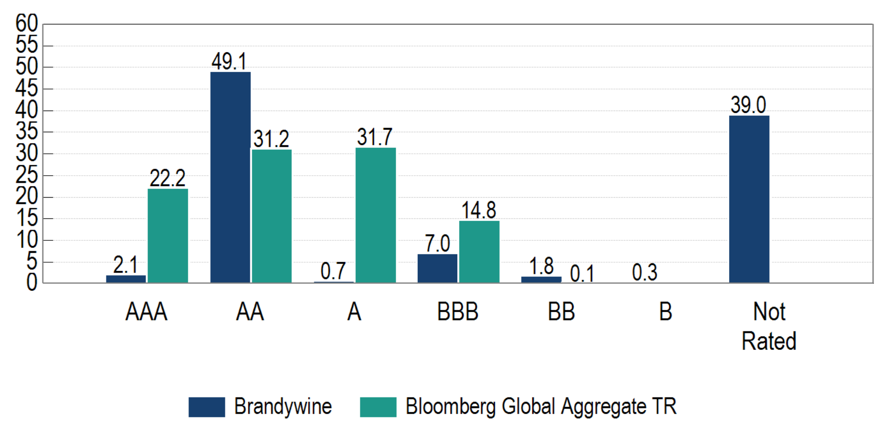
Global Sector Allocation



Characteristics
Brandywine

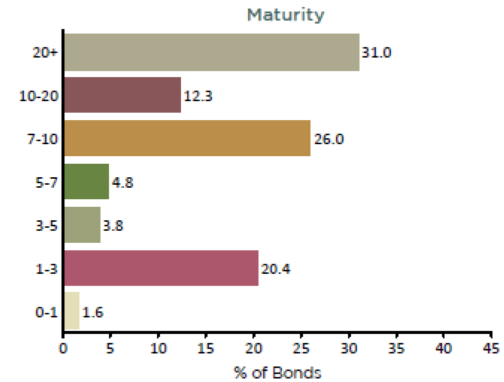


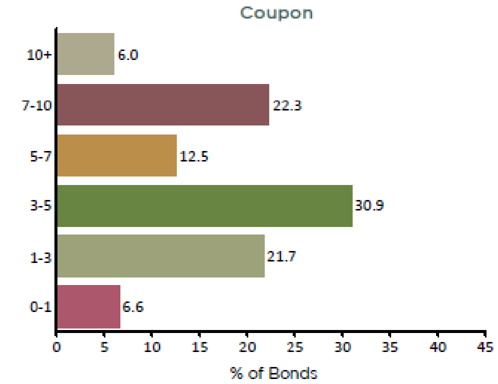
Credit Quality Allocation
Brandywine



Portfolio Characteristics

	Portfolio	Primary Benchmark
Yield to Maturity (%)	6.75	3.17
Yield to Worst (%)	6.85	3.17
Modified Duration	9.47	7.46
Effective Duration	9.55	7.53
Average Maturity	13.29	9.60
Average Market Price	82.90	-
Average Coupon (%)	4.69	1.80
Current Yield (%)	5.51	-
# of Issues	159	1,181





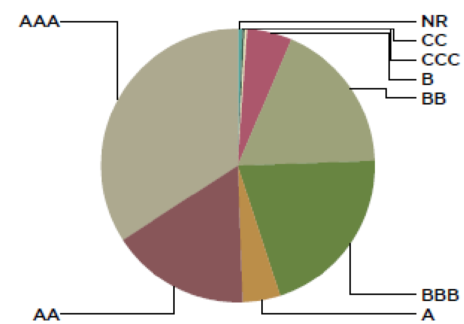
Sector Breakdown

	Market Value (%)	Duration Contribution (in Years)
Government Sovereign	82.79	7.14
Corporate Bond - High Yield	10.45	0.40
Corporate Bond - Investment Grade	1.23	0.04
Government Regional Agencies	2.77	0.02
Government Owned - No Guarantee	0.48	0.01
Mortgage Backed Securities	0.17	0.00
Cash	5.68	-
Derivatives	(3.56)	1.85
Total:	**100.00**	**9.47**

Portfolio Credit Quality (Blended Weighted Average Rating)

Combined Rating	%	Cumulative %
AAA	34.1	34.1
AA	16.4	50.5
A	4.7	55.2
BBB	20.5	75.6
BB	18.0	93.6
B	5.2	98.8
CCC	0.5	99.3
CC	0.2	99.5
NR	0.5	100.0

Average Quality: A



PRIMARY BENCHMARK is FTSE WGBI (USD)

All Averages are US DOLLAR - weighted by the net market value. Average Market Price includes accrued interest. The "Blended Weighted Average Rating" is determined as follows: in line with the methodology used by Barclays Global indices, the middle rating from the three major NRSROs (S & P, Moody's, and Fitch) will be assigned to each security. In the event that ratings are provided by only two agencies, the lowest rating will be assigned. If only one agency assigns a rating, that rating will be applied. If the security is not rated by one of the three major agencies, U.S. treasuries and certain U.S. agencies are given the U.S. issuer rating. Sovereign treasuries are given the sovereign issuer rating. All other unrated securities are given a rating equivalent to a defaulted bond. The equivalent numerical rating is assigned to each security based on the Security Level scale. A Portfolio Level scale is applied on the weighted average calculation to round for fractional numerical ratings and then converted to an alpha weighted average rating. Cash is included and received the highest rating.

Data included on this page show the aggregate holdings of the Brandywine Emerging Markets Debt Fund ("EMD Fund"), in which the portfolio is invested. Holdings in the EMD Fund are not subject to ACERA's Investment Guidelines. Please note that ACERA owns units of the EMD Fund, not the underlying holdings. Data and characteristics shown are for illustrative purposes only.

Derivatives market value represents the unrealized profit/loss of all derivatives in the portfolio.

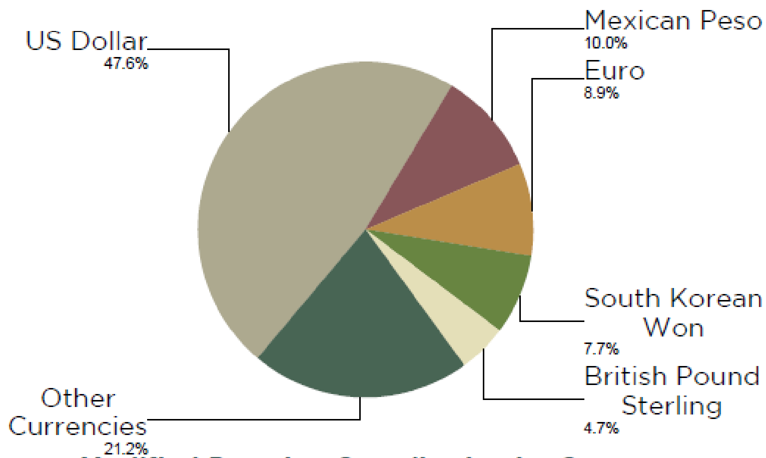
Country Allocation	9/30/2022 Portfolio	9/30/2022 Index	9/30/2022 Active	6/30/2022 Portfolio	6/30/2022 Change
*Mexico	11.85	0.72	11.14	9.72	2.13
South Korea	6.96	-	6.96	7.18	(0.22)
*Brazil	6.90	-	6.90	7.47	(0.58)
*Colombia	5.43	-	5.43	2.40	3.03
*Peru	5.32	-	5.32	0.14	5.18
United States	39.55	44.66	(5.11)	46.39	(6.84)
*South Africa	4.80	-	4.80	6.82	(2.02)
*Poland	4.77	0.36	4.40	0.20	4.57
Spain	0.17	4.29	(4.13)	0.17	(0.01)
*China	0.11	2.82	(2.71)	-	0.11
*Czech Republic	1.56	-	1.56	1.87	(0.31)
Australia	2.83	1.30	1.53	7.33	(4.49)
*Malaysia	1.82	0.45	1.37	1.73	0.09
Canada	0.42	1.77	(1.35)	2.11	(1.69)
*Hungary	1.25	-	1.25	-	1.25
France	6.42	7.32	(0.90)	6.69	(0.27)
Israel	1.00	0.32	0.68	0.88	0.12
*Chile	0.51	-	0.51	0.57	(0.06)
Russian Federation	0.45	-	0.45	-	0.45
Ireland	0.10	0.54	(0.45)	0.07	0.02
Tanzania	0.25	-	0.25	0.12	0.13
*Uruguay	0.23	-	0.23	0.26	(0.04)
*Zambia	0.21	-	0.21	0.30	(0.09)
*Panama	0.20	-	0.20	0.20	-
*Ukraine	0.18	-	0.18	0.24	(0.06)
*Vietnam	0.15	-	0.15	0.14	0.01
*Nigeria	0.10	-	0.10	0.09	0.01
European Union	0.01	-	0.01	0.01	-
Other Countries	-	35.45	(35.45)	0.69	(0.69)
Derivative P/L	(3.56)	-	(3.56)	(3.81)	0.24
Total:	100.00	100.00	-	100.00	-

Currency Allocation	9/30/2022 Portfolio	9/30/2022 Index	9/30/2022 Active	6/30/2022 Portfolio	6/30/2022 Change
US Dollar	10.01	44.66	(34.65)	16.78	(6.77)
Japanese Yen	28.24	14.73	13.51	21.75	6.49
*Chilean Peso	5.07	-	5.07	6.42	(1.35)
Swedish Krona	5.18	0.22	4.96	5.05	0.13
*Mexican Peso	5.16	0.72	4.45	3.65	1.52
Euro	23.90	28.24	(4.34)	22.38	1.52
British Pound Sterling	(0.58)	3.56	(4.14)	(0.09)	(0.49)
*Polish Zloty	4.12	0.36	3.75	6.58	(2.47)
*Hungarian Forint	3.60	-	3.60	3.54	0.06
*Brazilian Real	3.48	-	3.48	1.96	1.52
**Chinese Yuan Renminbi	(0.42)	2.82	(3.24)	(0.69)	0.27
*South African Rand	3.10	-	3.10	2.00	1.10
*Malaysian Ringgit	2.60	0.45	2.15	3.20	(0.61)
Canadian Dollar	-	1.77	(1.77)	-	-
*Peruvian Nuevo Sol	1.68	-	1.68	-	1.68
*Thai Baht	1.27	-	1.27	2.26	(0.99)
*Indonesian Rupiah	1.19	-	1.19	1.02	0.17
Australian Dollar	0.11	1.30	(1.19)	0.19	(0.07)
*Colombian Peso	1.04	-	1.04	1.31	(0.27)
*Czech Koruna	0.78	-	0.78	2.46	(1.68)
Russian Ruble	0.46	-	0.46	-	0.46
South Korean Won	0.44	-	0.44	0.23	0.20
*Philippine Peso	(0.42)	-	(0.42)	-	(0.42)
Singapore Dollar	-	0.38	(0.38)	-	-
Israeli Shekel	-	0.32	(0.32)	-	-
Danish Krone	-	0.31	(0.31)	-	-
Norwegian Krone	-	0.17	(0.17)	-	-
Total:	100.00	100.00	-	100.00	-

*Emerging Markets are defined as any country and currency included in the JP Morgan Government Bond Index-Emerging Market or the JP Morgan Emerging Market Bond Index Global indices.

**For reporting purposes we have grouped both offshore (CNH) and onshore (CNY) Chinese Yuan Renminbi exposure in a single line item. Please refer to the holdings section of this report for additional details.

Source of Portfolio Duration by Currency Denomination



Modified Duration Contribution by Currency

(In Years)

Currency	9/30/2022 0-3	>3-10	>10-20	>20+	Total	6/30/2022 Total Change
US Dollar	0.05	0.40	1.43	2.64	4.51	1.77
*Mexican Peso	-	0.02	0.14	0.79	0.95	0.40
Euro	-	0.46	-	0.39	0.84	(0.07)
South Korean Won	-	0.40	-	0.32	0.72	(0.06)
British Pound Sterling	-	0.44	-	-	0.44	(0.01)
*Peruvian Nuevo Sol	-	0.23	0.17	-	0.40	0.40
*South African Rand	-	0.03	-	0.33	0.36	0.03
*Polish Zloty	0.00	0.35	-	-	0.36	0.35
*Brazilian Real	-	-	0.30	-	0.30	(0.01)
*Colombian Peso	-	0.25	-	0.02	0.26	0.19
*Czech Koruna	-	-	0.15	-	0.15	(0.03)
*Hungarian Forint	-	-	0.09	-	0.09	0.09
*Malaysian Ringgit	0.02	0.05	-	-	0.07	(0.00)
Australian Dollar	0.02	-	-	-	0.02	(0.01)
Total	**0.09**	**2.62**	**2.27**	**4.49**	**9.47**	**3.05**

Modified Duration Contribution by Country

vs. FTSE WGBI (USD)

(In Years)

Country	9/30/2022 0-3	>3-10	>10-20	>20+	Total	Index	Active	6/30/2022 Total Change
Japan	-	-	-	-	-	1.76	(1.76)	-
United States	0.01	0.17	1.42	2.63	4.23	2.71	1.52	1.81
*Mexico	0.01	0.06	0.14	0.80	1.00	0.03	0.96	0.39
South Korea	0.00	0.40	-	0.32	0.73	-	0.73	(0.06)
*Peru	-	0.23	0.17	-	0.40	-	0.40	0.40
Italy	-	-	-	-	-	0.40	(0.40)	-
*South Africa	-	0.04	-	0.33	0.37	-	0.37	0.04
*Brazil	0.00	0.05	0.30	0.00	0.36	-	0.36	(0.02)
*Poland	0.00	0.35	-	-	0.36	0.01	0.34	0.35
Spain	-	-	-	0.00	0.00	0.30	(0.29)	(0.00)
*Colombia	0.01	0.27	-	0.02	0.29	-	0.29	0.18
France	-	0.46	-	0.38	0.84	0.55	0.29	(0.07)
*China	-	0.01	-	-	0.01	0.16	(0.15)	0.01
*Czech Republic	-	-	0.15	-	0.15	-	0.15	(0.03)
Canada	-	0.02	-	-	0.02	0.13	(0.11)	0.01
*Hungary	-	-	0.09	-	0.09	-	0.09	0.09
Australia	0.02	0.00	-	-	0.03	0.09	(0.06)	(0.01)
United Kingdom	-	0.44	-	-	0.44	0.39	0.05	(0.01)
Ireland	-	0.00	-	-	0.00	0.04	(0.04)	0.00
*Malaysia	0.02	0.05	-	-	0.07	0.03	0.04	(0.00)
*Chile	0.00	0.01	-	-	0.02	-	0.02	(0.00)
Israel	0.00	0.03	-	-	0.04	0.02	0.02	0.00
*Panama	-	0.01	-	-	0.01	-	0.01	(0.00)
*Ukraine	-	-	0.01	-	0.01	-	0.01	0.00
*Zambia	-	0.01	-	-	0.01	-	0.01	(0.00)
Tanzania	-	0.01	-	-	0.01	-	0.01	0.00
*Uruguay	0.01	-	-	-	0.01	-	0.01	(0.00)
*Nigeria	-	0.00	-	-	0.00	-	0.00	0.00
*Vietnam	0.00	-	-	-	0.00	-	0.00	-
Other Countries	-	-	-	-	-	0.83	(0.83)	(0.02)
Total	**0.09**	**2.62**	**2.27**	**4.49**	**9.47**	**7.47**	**2.01**	**3.05**

*Emerging Markets are defined as any country and currency included in the JP Morgan Government Bond Index-Emerging Market or the JP Morgan Emerging Market Bond Index Global indices.

Total Plan Policy Index	As of: 7/1/21	1/1/21	7/1/19	10/1/17	7/1/16	1/1/13	10/1/11	4/1/11	1/1/09	7/1/06	4/1/03	6/1/01	10/1/97	1/1/96	10/1/94	1/1/92	1/1/80
91-day US T-Bill													1%	1%	1%	1%	2%
Bloomberg US Aggregate	9%	11.40%	11.40%	11.25%	11.25%	11.25%	15%	18%	18%	21%	23%	26%	33%	29%	32%	37%	30%
Bloomberg US High Yield	1.2%	1.6%	1.6%	1.5%	1.5%	1.5%	2.0%	2.4%	2.4%	3%	3%	3%					
Bloomberg Commodity	0.3%	0.25%	0.75%	0.75%	0.75%												
FTSE WGBI ex US	3.8%	3.00%	3.00%	2.25%	2.25%	2.25%	3%	3.6%	3.6%	4%	4%	5%					
CPI-U +3% (RR)						5.00%	5%										
MSCI ACWI ex US									23%	22%	22%	22%					
MSCI ACWI ex US IMI	24%	25%	25%	26%	26%	27%	25%	23%									
MSCI EAFE													10%	10%	10%	10%	
MSCI Emg Mkts Free ex Malaysia													3%				
MSCI World net																	10%
NCREIF								6%	6%	9%	9%	9%					
NCREIF ODCE	9%	8%	8%	8%	8%	6%	6%										
Russell 3000	24%	25%	25%	28%	28%	32%	34%	37%	37%	41%	39%	35%	42%	49%	47%	40%	
HFRI FoF Composite	8%	9%	9%	9%													
Refinitiv C|A Global All Private Equity 1Q Lagged	11%	8%	8%	9%													
Russell 3000 +1% (PE)					18.00%	15.00%	10%										
Russell 3000 +1.5% (PE)								10%	10%								
Russell 3000 +4% (AI)													2%				
S&P 500																	55%
S&P Global Infrastructure	3.6%	3%	1.75%	1.75%	1.75%												
S&P Global Large Mid Commodity & Resource	2.1%	1.75%	2.50%	2.50%	2.50%												
S&P/LSTA Leveraged Loan+1.75%	4%	4%	4%														
Wilshire RE													9%	11%	10%	12%	3%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

US Equity Benchmark	As of: 1/1/92	1/1/80
Russell 3000	100%	0%
S&P 500	0%	100%
	100.0%	100.0%

International Equity Benchmark	As of: 4/1/11	6/1/01	10/1/97	1/1/92	1/1/80
MSCI ACWI ex US		100%			
MSCI ACWI ex US IMI	100%				
MSCI EAFE			77%	100%	
MSCI Emg Mkts Free ex Malaysia			23%		
MSCI World net					100%
	100.0%	100.0%	100.0%	100.0%	100.0%

Fixed Income Benchmark	As of: 7/1/21	6/1/19	6/1/01	1/1/80
Bloomberg US Aggregate	75.00%	71.25%	75%	100%
Bloomberg US High Yield	10.00%	10.00%	10%	
FTSE WGBI ex US	15.00%	18.75%	15%	
	100.0%	100.0%	100.0%	100.0%

Absolute Return Benchmark	As of: 10/1/17	10/1/11
HFRI Fund of Funds Composite Index	100%	
LIBOR 1M +4%		100%
	100.0%	100.0%

Private Equity Benchmark	As of: 10/1/17	12/1/08
Refinitiv C|A Global All Private Equity 1Q Lagged	100%	
Russell 3000 +2.5%		100%
	100.0%	100.0%

Real Assets Benchmark	As of: 1/1/21	7/1/16	10/1/11
CPI-U +3%			100%
Bloomberg Commodity	5%	15%	
S&P Global Infrastructure	60%	35%	
S&P Global Large Mid Commodity & Resource	35%	50%	
	100.00%	100.00%	100.0%

Private Credit Benchmark	As of: 11/1/19
S&P/LTSA Leveraged Loan Index +1.75%	100%
	100.0%

Real Estate Blend	As of: 10/1/11	6/1/01	4/1/86
NCREIF ODCE	100%		
NCREIF Property		100%	
Wilshire RE			100%
	0.0%	100.0%	100.0%

Glossary

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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Verus

PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS

PERIOD ENDING: SEPTEMBER 30, 2022

Absolute Return Performance Report

Alameda County Employees' Retirement Association

Non-Confidential

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Hedge Fund Environment

Hedge fund market review

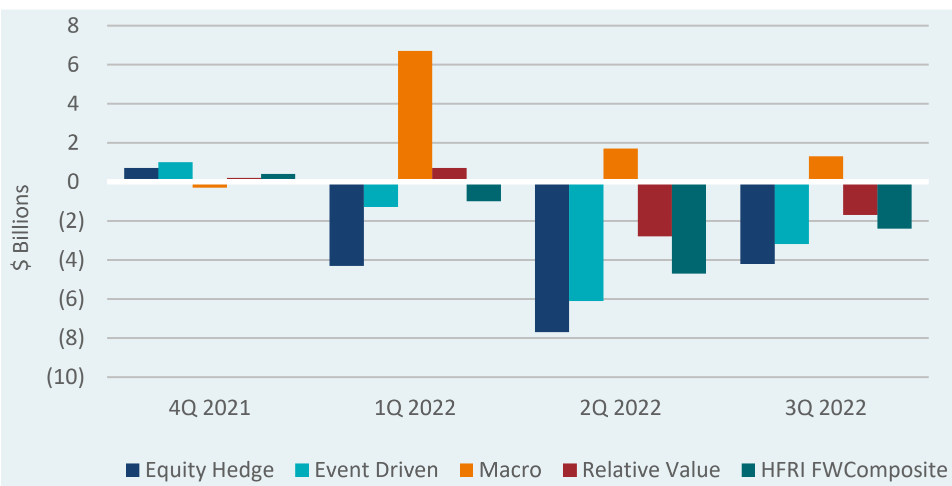
Hedge funds see wild swings in flows; worst quarter outflow since COVID

— Performance for Q2 (-4.7% for the HFRI Composite) was the worst quarterly return since Q1 2020/COVID (-11.5%), Q3 also saw negative -2.3% returns for the HFRI Composite. Interestingly, hedge funds provided much more downside protection during this quarter than during Q1 2020, despite similar equity market drawdowns: (-16.1% and -19.6% for the S&P 500).

— Investors withdrew an estimated $28 billion from hedge funds during Q2 and $26 billion in Q3, the most since Q1 2020/COVID when estimated redemptions were $30+ billion. This comes on the heels of strong inflows in Q1 and the best period of inflows since 2013-2015, which suggests that most investors were using their hedge fund allocations as a source of liquidity rather than exiting the space.

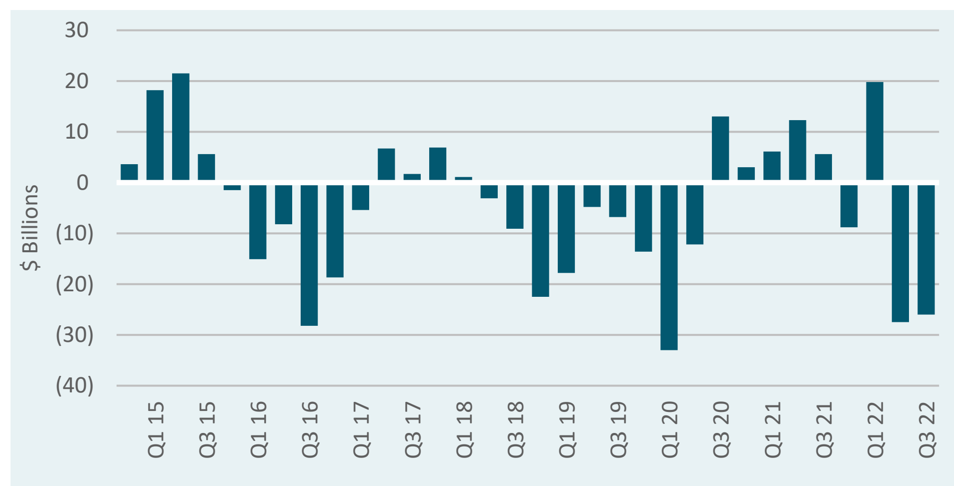
— Within hedge funds, Macro strategies were the clear outperformer as systematic/CTA type strategies and discretionary/thematic funds were able to generate gains in both Q1 and Q2. Relative value strategies were fairly defensive, while Equity Hedge and Event Driven funds, on aggregate, performed as expected given their consistent beta profiles to equity and credit.

HFRI STRATEGY RETURNS, LAST 3 QUARTERS



Source: HFR

QUARTERLY NET FLOWS TO HEDGE FUNDS



Source: HFR

Hedge fund market review

Macro funds deliver positive convexity in 2022, rotation in credit funds

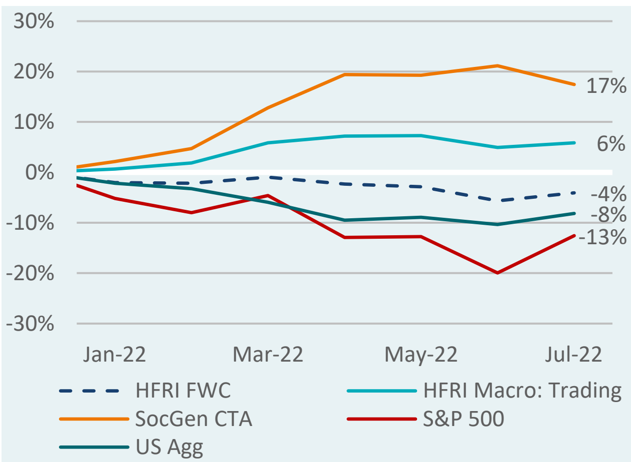
— Looking closer into Macro strategies outperformance in 2022, most of this can be attributed to the success of trend following CTA funds, which capitalized on positive trends in Commodities and negative trends in Stocks and Bonds.

— Actively traded macro funds, which include more tactical discretionary funds, also delivered strong returns given the market backdrop, primarily from short interest rate positions as the Fed remained committed to raising rates enough to bring down inflation.

— Credit hedge fund strategies succumbed to overwhelming risk-off moves in fixed income markets during the quarter. The HFRI Credit Index lost 3.2% for Q2 and another 2.2% in Q3, slightly outperforming loan markets as hedges helped offset spread widening.

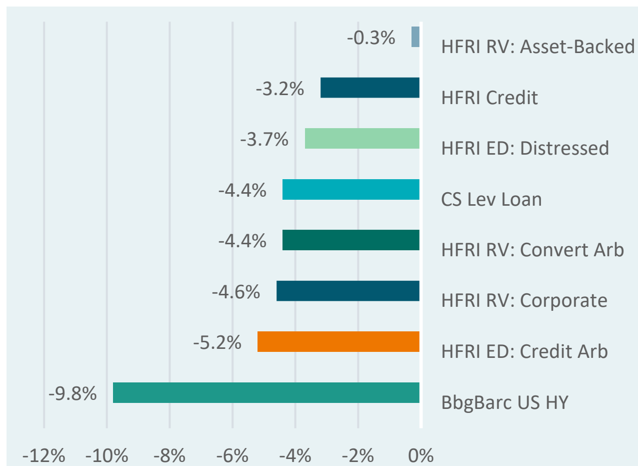
— Strategies like Distressed and Convertible Arbitrage, which enjoyed strong performance immediately following the COVID crash in early 2020, have had a tough 2022 while more conservative strategies such as Structured Credit were able to offset losses with higher yields.

2022 YTD RETURNS FOR MACRO SUB-STRATEGIES



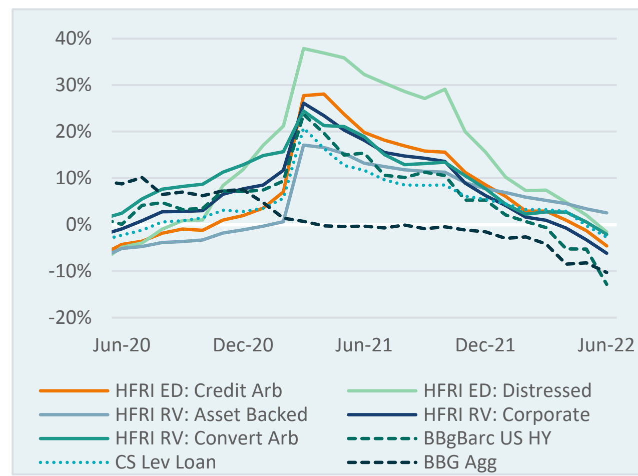
Source: HFR
Note: HFRI FWC is HFRI Fund Weighted Composite

2Q 2022 QUARTERLY RETURN FOR CREDIT FUNDS



Source: HFR

1 YEAR ROLLING RETURN FOR RV STRATEGIES



ACERA Performance

Allocations

Target

Sub-categories	Target Allocations	Min./Max. Ranges
AR Portfolio	**8.0%**	**5% to 10.5%**
▪ *Fund of Funds**	*6.4%*	*4% to 8%*
▪ *Other Alternatives/Opportunistic*	*1.6%*	*0% to 4.0%*

Current (as of 9/30/2022)

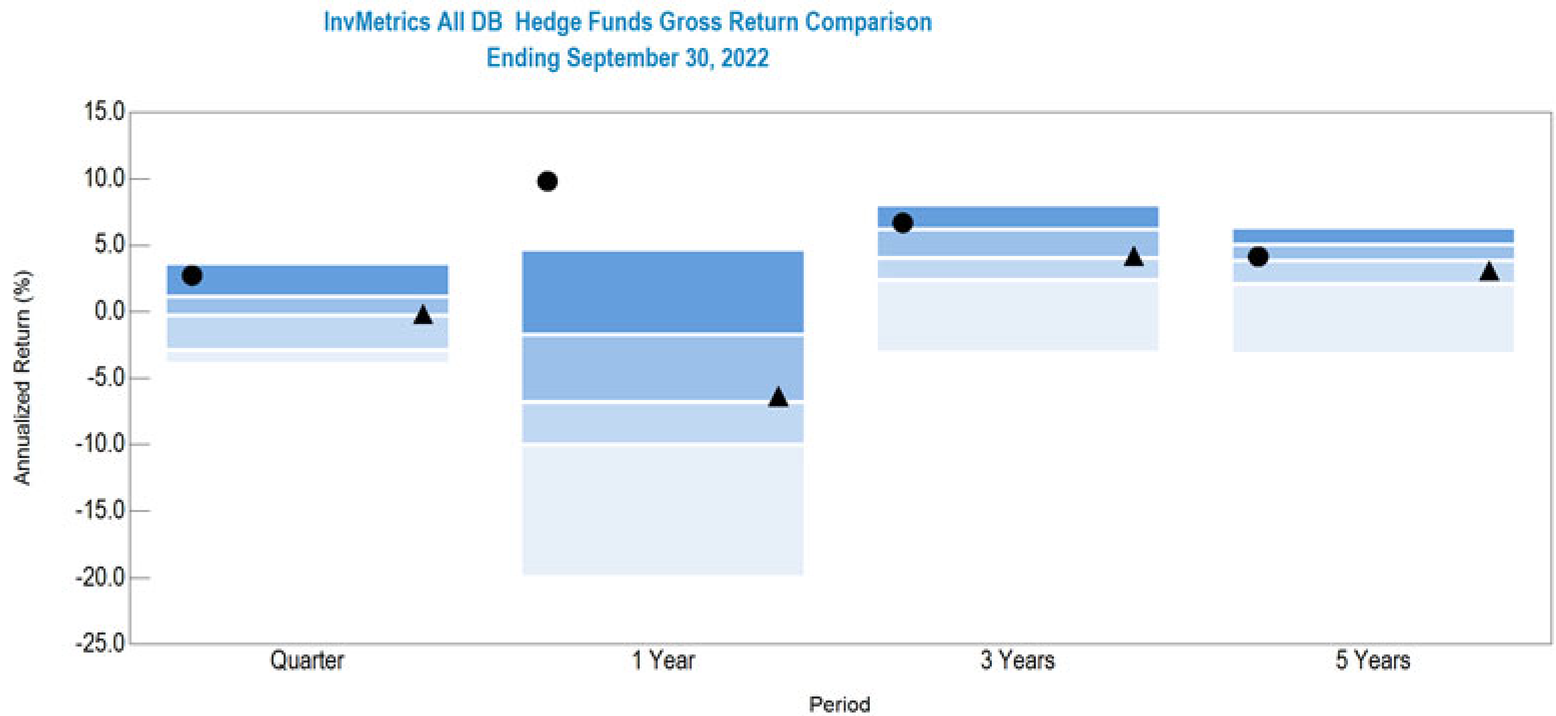
Sub-categories	Current Allocations	Min./Max. Ranges
AR Portfolio	**8.7%**	**5% to 10.5%**
▪ *Fund of Funds**	*6.9%*	*4% to 8%*
▪ *Other Alternatives/Opportunistic*	*1.8%*	0% to 4%

* Funding second Fund of One manager in two tranches August and September, once completed AR portfolio allocation will be 80% FOF/20% Other Alternatives.

Performance Summary

	Market Value ($)	% of Portfolio	3 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	2021 (%)	2020 (%)	2019 (%)	2018 (%)	2017 (%)	Inception (%)	Inception Date
									Ending September 30, 2022							
Absolute Return*	**858,324,394**	**100.0**	**2.7**	**6.5**	**6.5**	**9.8**	**6.7**	**4.1**	**4.8**	**15.0**	**-0.6**	**1.8**	**-2.2**	**3.3**	**4.1**	**Sep-11**
Absolute Return Blend			*-0.2*	*-6.7*	*-6.7*	*-6.3*	*4.2*	*3.1*	*3.8*	*6.2*	*10.9*	*8.4*	*-4.0*	*6.0*	*3.8*	*Sep-11*

Relative Performance



	Return (Rank)							
5th Percentile	3.6		4.7		8.1		6.3	
25th Percentile	1.2		-1.7		6.2		5.1	
Median	-0.2		-6.8		4.1		3.9	
75th Percentile	-2.8		-10.0		2.4		2.1	
95th Percentile	-3.9		-19.9		-3.1		-3.1	
# of Portfolios	133		124		122		108	
● Absolute Return	2.7	(8)	9.8	(3)	6.7	(19)	4.1	(47)
▲ Absolute Return Blend	-0.2	(50)	-6.3	(48)	4.2	(49)	3.1	(66)

Portfolio Statistics* (as of 9/30/2022)

	Benchmark HFRI FoF Composite	Absolute Return Portfolio	MSCI ACWI
Max Drawdown	-9.0	-10.5	-25.3
Sharpe Ratio	0.51	0.72	0.56
Beta	0.29	0.09	1.00
Correlation to MSCI ACWI	0.83	0.29	1.00
Annualized StDev	4.9	4.3	14.5

*Since inception of AR Portfolio (9/2011)

Portfolio performance and risk targets are:

- AR portfolio returns to exceed benchmark
- Correlation to global equities less than or equal to 0.5

Appendix

Glossary

Beta - A measure of systematic (undiversifiable) 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.

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 optimize the benefits of diversification when constructing an investment portfolio.

Internal Rate of Return (IRR) – the interest rate which is the net present value of all the cash flows (both positive and negative) of an investment.

Maximum Drawdown – the maximum loss from a peak to a trough of a portfolio before a new peak attained. Maximum drawdown measures the downside risk over a specified time period.

Standard Deviation - A measure of volatility, or risk. Measures risk by indicating how far from the average, or mean, return one is likely to fall in any given time period. The rules of statistics dictate that you will fall within 1 standard deviation of the mean 2/3 of the time and within 2 standard deviations 95% of the time. 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%.

Glossary

Sharpe Ratio - A measure of that explains the return of an investment compared to its risk. The Sharpe Ratio indicates excess portfolio return for each unit of risk over the risk free rate (usually short-term Treasuries or LIBOR) per unit of volatility. The higher the Sharpe Ratio, the greater its risk-adjusted return.

Time Weighted Return – A measure of the compound rate of growth in a portfolio, which eliminates the distorting effects of growth rates created by inflows and outflows of money.