Investment Performance Review Period Ending March 31, 2023

# Delray Beach Firefighters' Retirement System



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**1st Quarter 2023 Market Environment** 



## The Economy

- US GDP growth is expected to wane in the coming quarters as the impact from higher interest rates continues to spread through the broader economy. The final measure of 1st quarter GDP was revised downward to 1.7%. Global GDP growth also remains challenged with higher energy prices continuing to act as a headwind, especially in Europe. China has fully reopened after almost three years of COVID-19 restrictions, which boosted estimates and performance for the region.
- The US Federal Reserve Bank (the Fed) continued to increase interest rates during the quarter with two successive 0.25% increases in the Fed Funds rate in January and February. While the Fed's policy remains hawkish on fighting high inflation, the press release from the February meeting took on a more dovish tone.
- The US labor market continues to show its resiliency, adding roughly 236 thousand jobs during the 1st quarter. As a result, the unemployment rate fell to 3.5% in March. Noticeably, the labor market is showing signs of declining growth which could soon signal an inflection point in economic output and the fight against inflation.
- The global banking sector came under duress in the 1st quarter of 2023, triggered by the second and third-largest regional bank failures in US history. The combination of aggressive Fed rate hikes and questionable capital deployment by Silicon Valley Bank led to a flurry of depositor withdrawals and rocked general confidence in the overall banking system.

# Equity (Domestic and International)

- US equities moved broadly higher during the 1st quarter despite concerns regarding stubbornly high inflation, the potential for additional rate hikes, slowing global GDP growth, and shaken confidence in the global banking system. Large cap growth was the best performing domestic segment of the equity market during the period while small cap value performed the worst.
- International stocks also experienced strong returns during the 1st quarter. US Dollar (USD) and local currency (LCL) performance were both solid as the USD remained largely unchanged for the quarter. Non-US GDP growth, particularly in Europe, remained under pressure as restrictive central bank policies and elevated energy prices acted as a headwind. Finally, China's reopening from its restrictive COVID-19 policies is well underway and has proven to be a greater tailwind to the region than previously expected.

# **Fixed Income**

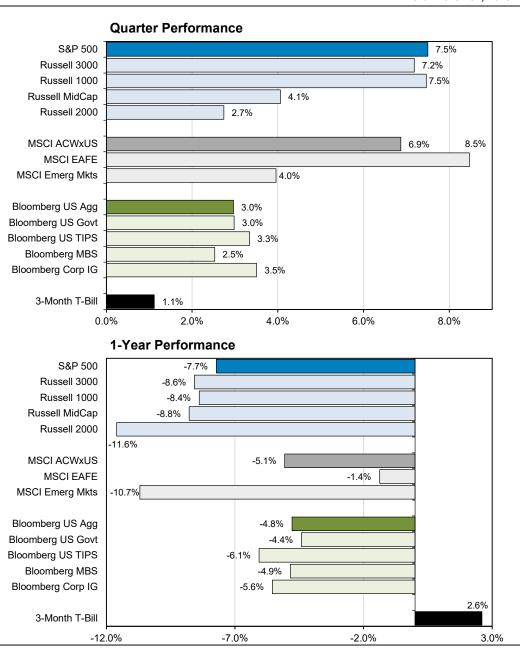
- While inflation continues to decline quarter-over-quarter, the Fed maintained their inflation-fighting policy stance, increasing interest rates twice, totaling 0.50%. Despite the short-term increases, yields beyond 1-year actually fell during the quarter with the bellwether US 10-Year Treasury bond closing March at 3.48%, 0.40% lower than year-end.
- Performance across domestic bond market sectors was positive during the quarter, led by corporate investment grade bonds. Global bonds slightly outperformed domestic fixed income for the quarter.
- A combination of higher coupons and narrower credit spreads were the primary drivers of lower quality corporate results during the period.
- US Treasury bonds rebounded this quarter as yields at longer maturities fell and investors fled to safety amidst troubles in the banking sector.

# **Market Themes**

- Central banks remained vigilant in their fight against inflation with the Fed, the Bank of England, and the European Central Bank continuing on the path of raising interest rates during the quarter. However, recession fears and softening inflation readings led to a recovery in asset prices as market expectations grew there may be fewer, less drastic rate hikes going forward.
- The conflict in Ukraine continues as a major geopolitical event without a clear resolution in sight. Energy costs remain elevated, which continues to negatively impact the economic growth outlook for the region.
- Short-term interest rates rose across most developed markets as central banks continued to tighten. Despite concerns about the potential for slowing economic growth, lower-quality corporate bonds slightly outpaced higher-quality government bonds.
- Both US and international equity markets continued to recover from the disappointing year that was 2022 on expectations that inflation would continue to moderate and central banks would slow the pace of monetary tightening.

- Domestic equity markets started 2023 with solid results led by large cap companies, but each index remains negative over the trailing 1-year period. Factors contributing to the quarter's results include declining inflation readings, expectations the Fed would slow the pace of future interest rate increases, and China's economic reopening from its self-imposed COVID-19 restrictions. For the period, the S&P 500 large cap benchmark returned 7.5%, versus 4.1% for mid cap, and 2.7% for small cap benchmarks.
- Like domestic equities, international developed and emerging market equities delivered positive results for the 1st quarter. Europe continues to face headwinds from higher-than-expected inflation, elevated energy prices, geopolitical risks related to the conflict in Ukraine, and rising interest rates. Emerging markets benefited from China's return to the global economy. The developed market MSCI EAFE Index returned 8.5% for the quarter and the MSCI Emerging Markets Index rose by 4.0%.
- For the quarter, performance of the bond market was broadly positive due to lower inflation and falling yields beyond 1-year maturities. The Bloomberg (BB) US Aggregate Index returned 3.0% for the period while investment grade corporate bonds posted a moderately higher return of 3.5%.
- US equity markets were negative over the trailing 1-year period, though much of this weak performance occurred at the beginning of the timeframe and will continue to roll off in the coming quarters. The S&P 500 Index return of -7.7% for the year was largely driven by concerns related to rising inflation, tighter monetary policy, and recession fears. The weakest relative performance for the year was the Russell 2000 Index, which declined -11.6%.
- Over the trailing 1-year period, international markets also declined. The MSCI EAFE Index returned -1.4% while the MSCI Emerging Markets Index fell a much larger -10.7%. Continued concerns related to Ukraine, elevated inflation, and slowing global economic growth negatively impacted markets. However, USD weakness and easing energy prices acted as a tailwind to international performance in the second half of 2022.
- Bond markets followed a largely similar narrative to equities, finishing the trailing 1-year period in negative territory. While bond market performance was impacted by similar factors to equity market performance, the primary driver of results over the prior year was dramatically higher interest rates, which directly and immediately impact bond prices and index performance. US mortgage backed and Government issues were the least negative sectors returning 4.9% and -4.4%, respectively, for the year. US TIPS suffered the year's largest loss, falling -6.1%.

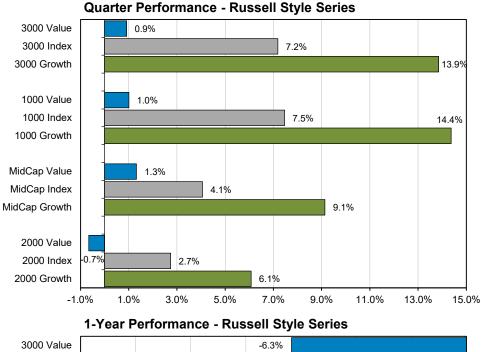
Source: Investment Metrics

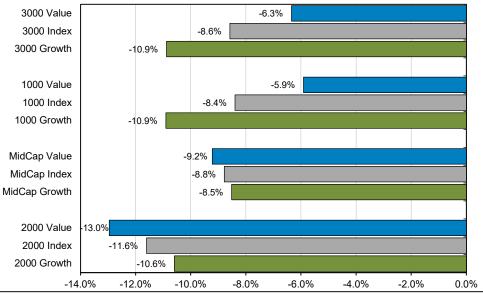




- Domestic equity core benchmarks pulled back from their February highs, but each finished the quarter with solid, positive results. Concerns regarding the regional banking sector and the financial sector's large weight in the value benchmarks weighed heavily on style-based index performance. Large cap stocks led results for the capitalization-based benchmarks and finished well ahead of both the mid cap and small cap indices for the quarter. Growth benchmarks, with their lower weight in the financial sector and larger weight in the information technology sector, produced the quarter's strongest results at all capitalization levels. The Russell 1000 Growth Index topped the guarter. returning 14.4% followed by the Russell Mid Cap Growth Index and the Russell 2000 Growth Index, which rose by 9.1% and 6.1%, respectively.
- Large, mid, and small cap growth stocks each outperformed their value counterparts by a wide margin for the quarter. While it is only a single quarter, this performance reversed 2022's dominant trend of value-based benchmarks outpacing their growth counterparts. Large and mid cap stocks managed small, positive returns of 1.0% and 1.3%, respectively, for the guarter while the Russell 2000 Value Index fell -0.7%.

- The 1st quarter's positive performance was not enough to offset the challenging performance experienced by domestic equity markets during 2022. All market capitalizations and styles remain in sizable negative territory over the trailing 1-year period. Within large cap stocks, the Russell 1000 Value Index returned a disappointing -5.9% but was down much less than the Russell Large Cap Growth Index, which fell -10.9% for the year.
- Outside of large cap issues, 2023's strong 1st quarter growth benchmark results were enough to push growth results over their value equivalents at both mid and small cap levels for the year. The Russell Mid Cap Value Index returned -9.2% and the small cap Russell 2000 Value Index returned -13.0% for the period. The growth benchmark counterparts at both capitalization levels were each down less than value.

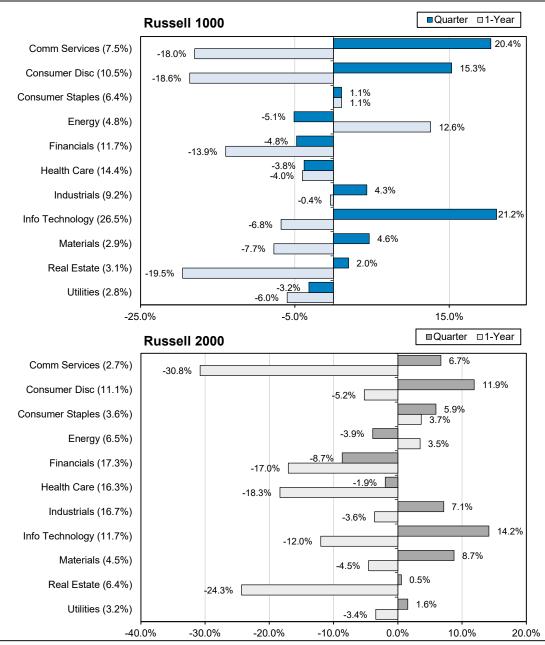




15.0%

Source: Investment Metrics

- Economic sector performance was mixed during the quarter. Seven of 11 economic sectors posted positive absolute performance for the quarter but just three managed to outpace the return of the broad index.
- After a challenging 2022, the information technology sector rebounded during the quarter on hopes that inflation was softening, and that the Fed would soon end its rate hiking cycle. The sector returned an impressive 21.2% in the quarter. The other two sectors that outpaced the headline index's return for the quarter were communication services (20.4%) and consumer discretionary (15.3%). The energy (-5.1%), financials (-4.8%), health care (-3.8%), and utilities (-3.2%) sectors each posted negative performance for the quarter.
- Eight small cap economic sectors posted positive results during the quarter and six exceeded the 2.7% return of the broader Russell 2000 Index. The consumer discretionary (11.9%) and information technology (14.2%) sectors each posted double-digit gains for the quarter while the energy (-3.9%), financials (-8.7%), and health care (1.9%) sectors posted negative returns.
- For the full year, seven economic sectors exceeded the return of the broad large cap benchmark, but only the energy (12.6%) and consumer staples (1.1%) sectors managed to post positive performance for the period. The weakest economic sector in the Russell 1000 for the year was Real Estate, which declined by -19.5% and was heavily impacted by rising interest rates.
- Similar to large cap sector performance, for the trailing 1-year period only two small cap sectors were positive. Energy was the best performing sector followed by consumer staples, which posted returns of 3.5% and 3.7%, respectively. Four of the 11 economic sectors were down less than the broad small cap benchmark's return of -11.6%. The worst performing sector for the year was communication services with a return of -30.8%. However, the information technology (-12.0%), financials (-17.0%), health care (-18.3%), and real estate (-24.3%) sectors were also down significantly for the year.



Source: Morningstar Direct

As a result of the GICS classification changes on 9/28/2018 and certain associated reporting limitations, sector performance represents backward looking performance for the prior year of each sector's current constituency, post creation of the Communication Services sector.



The Market Environment Top 10 Index Weights & Quarterly Performance for the Russell 1000 & 2000 As of March 31, 2023

	Top 10 W	eighted Stoc	:ks	
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector
Apple Inc	6.5%	27.1%	-5.0%	Information Technology
Microsoft Corp	5.7%	20.5%	-5.6%	Information Technology
Amazon.com Inc	2.4%	23.0%	-36.6%	Consumer Discretionary
NVIDIA Corp	1.7%	90.1%	1.9%	Information Technology
Alphabet Inc Class A	1.6%	17.6%	-25.4%	Communication Services
Berkshire Hathaway Inc Class B	1.5%	0.0%	-12.5%	Financials
Alphabet Inc Class C	1.4%	17.2%	-25.5%	Communication Services
Tesla Inc	1.4%	68.4%	-42.2%	Consumer Discretionary
Meta Platforms Inc Class A	1.2%	76.1%	-4.7%	Communication Services
Exxon Mobil Corp	1.2%	0.2%	37.5%	Energy

Top 10 Weighted Stocks						
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector		
Iridium Communications Inc	0.3%	20.7%	53.9%	Communication Services		
ShockWave Medical Inc	0.3%	5.5%	4.6%	Health Care		
EMCOR Group Inc	0.3%	9.9%	45.0%	Industrials		
Crocs Inc	0.3%	16.6%	65.5%	Consumer Discretionary		
Texas Roadhouse Inc	0.3%	19.4%	31.8%	Consumer Discretionary		
Saia Inc	0.3%	29.8%	11.6%	Industrials		
Inspire Medical Systems Inc	0.3%	-7.1%	-8.8%	Health Care		
RBC Bearings Inc	0.3%	11.2%	20.0%	Industrials		
Kinsale Capital Group Inc	0.3%	14.8%	31.9%	Financials		
Apellis Pharmaceuticals Inc	0.3%	27.6%	29.8%	Health Care		

Top 10 Performing Stocks (by Quarter)					
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector	
Sotera Health Co Ordinary Shares	0.0%	115.0%	-17.3%	Health Care	
Carvana Co Class A	0.0%	106.5%	-91.8%	Consumer Discretionary	
Coinbase Global Inc Ordinary Shares	0.0%	90.9%	-64.4%	Financials	
NVIDIA Corp	1.7%	90.1%	1.9%	Information Technology	
Oak Street Health Inc Ordinary Shares	0.0%	79.8%	43.9%	Health Care	
Meta Platforms Inc Class A	1.2%	76.1%	-4.7%	Communication Services	
DraftKings Inc Ordinary Shs - Class A	0.0%	70.0%	-0.6%	Consumer Discretionary	
Spotify Technology SA	0.0%	69.2%	-11.5%	Communication Services	
Tesla Inc	1.4%	68.4%	-42.2%	Consumer Discretionary	
Roku Inc Class A	0.0%	61.7%	-47.5%	Communication Services	

Top 10 Performing Stocks (by Quarter)						
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector		
Cipher Mining Inc	0.0%	316.1%	-36.0%	Information Technology		
SelectQuote Inc Ordinary Shares	0.0%	223.0%	-22.2%	Financials		
C3.ai Inc Ordinary Shares - Class A	0.1%	200.0%	47.9%	Information Technology		
Riot Platforms Inc	0.1%	194.7%	-52.8%	Information Technology		
Oscar Health Inc Class A	0.0%	165.9%	-34.4%	Financials		
Marathon Digital Holdings Inc	0.0%	155.0%	-68.8%	Information Technology		
Aurinia Pharmaceuticals Inc	0.1%	153.7%	-11.5%	Health Care		
Reata Pharmaceuticals Inc Class A	0.1%	139.3%	177.5%	Health Care		
Atlas Technical Consultants Inc	0.0%	136.7%	N/A	Industrials		
Berkshire Grey Inc Ordinary Shares	0.0%	128.5%	-52.1%	Industrials		

Bottor	n 10 Perform	ning Stocks (	by Quarter)		Botton	n 10 Perform	ning Stocks (	by Quarter)	
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector	Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector
First Republic Bank	0.0%	-88.5%	-91.3%	Financials	Cerberus Cyber Sentinel Corp	0.0%	-86.7%	-93.6%	Information Technology
PacWest Bancorp	0.0%	-57.2%	-76.6%	Financials	Cyxtera Technologies Inc	0.0%	-84.1%	-97.5%	Information Technology
Lumen Technologies Inc Ordinary Shs	0.0%	-49.2%	-75.4%	Communication Services	Bed Bath & Beyond Inc	0.0%	-83.0%	-98.1%	Consumer Discretionary
WeWork Inc	0.0%	-45.6%	-88.6%	Real Estate	Pear Therapeutics Inc Class A	0.0%	-78.4%	-95.0%	Health Care
Enviva Inc	0.0%	-44.4%	-61.2%	Energy	Veru Inc	0.0%	-78.0%	-76.0%	Consumer Staples
Western Alliance Bancorp	0.0%	-40.0%	-56.3%	Financials	Sunlight Financial Holdings Inc	0.0%	-75.8%	-93.8%	Financials
Zions Bancorp NA	0.0%	-38.6%	-52.9%	Financials	Esperion Therapeutics Inc	0.0%	-74.5%	-65.7%	Health Care
Charles Schwab Corp	0.2%	-36.9%	-37.1%	Financials	Nektar Therapeutics	0.0%	-68.9%	-87.0%	Health Care
Comerica Inc	0.0%	-34.0%	-49.8%	Financials	Vintage Wine Estates Inc Ordinary Shs	0.0%	-67.2%	-89.2%	Consumer Staples
DISH Network Corp Class A	0.0%	-33.5%	-70.5%	Communication Services	Bright Health Group Inc	0.0%	-66.1%	-88.6%	Financials

Source: Morningstar Direct



- ∎USD □Local Currencv **Quarter Performance** 6.9% AC World x US (48) 6.2% 8.0% WORLD x US (22) 7.1% 8.5% EAFE (21) 7.5% 10.5% Europe & ME (16) 8.6% 4.7% Pacific (5) 5.6% 4.0% Emerging Mkt (26) 3.8% -1.1% EM EMEA (11) 0.1% 4.8% EM Asia (9) 5.0% 3.9% EM Latin Amer (6) -1.3% 0.0% 3.0% 6.0% -3.0% 9.0% 12.0% ∎USD □Local Currency **1-Year Performance** -5.1% AC World x US (48) -0.1% -2.7% WORLD x US (22) 2.7% -1.4% EAFE (21) 3.8% 1.1% Europe & ME (16) 4.7% -6.0% Pacific (5) 2.2% -10.7% Emerging Mkt (26) -6.7% 7.8% EM EMEA (11) -12.3% -9.4% EM Asia (9) -5.3% -11.1% EM Latin Amer (6) -9.6% -15.0% -10.0% -5.0% 0.0% -20.0% 5.0%
- Many of the International developed and emerging market benchmarks posted positive performance in both USD and LCL terms for the 1st quarter. A weakening USD acted as a slight tailwind for non-US index performance during the quarter. Higher energy prices and the reopening of China drove performance, especially in emerging markets. Europe and Middle East sub-index led results, returning a strong 10.5% in USD and 8.6% in LCL. The developed market MSCI EAFE Index returned a solid 8.5% in USD and 7.5% in LCL terms for the period, and the MSCI Emerging Markets Index rose by 4.0% in USD and 3.8% in LCL terms.

The trailing 1-year results for international developed and emerging markets remain in negative territory in USD terms. A strong dollar over most of the trailing 1-year period was the dominant USD performance factor, shaving 5.2% off broad developed market performance and 4.0% from emerging market results. Developed market performance was positive in LCL terms with the MSCI EAFE Index returning -1.4% in USD and 3.8% in LCL terms for the year. The MSCI Emerging Markets Index declined by -10.7% in USD and -6.7% in LCL terms for the period. Performance in the EMEA (Europe, Middle East, and Africa) regional benchmark significantly detracted from emerging market index performance with a return of -17.8% in USD and -12.3% in LCL terms.



Source: MSCI Global Index Monitor (Returns are Net)

The Market Environment

# US Dollar International Index Attribution & Country Detail

As of March 31, 2023

MSCI - EAFE	Sector Weight	Quarter Return	1-Year Return
Communication Services	4.5%	10.5%	-6.5%
Consumer Discretionary	12.0%	17.0%	5.0%
Consumer Staples	10.4%	7.6%	1.3%
Energy	4.5%	0.4%	9.6%
Financials	17.7%	2.5%	-1.1%
Health Care	13.2%	5.4%	-2.6%
Industrials	15.6%	11.9%	-0.5%
Information Technology	8.6%	19.0%	-4.1%
Materials	7.7%	7.6%	-6.5%
Real Estate	2.4%	-2.1%	-20.4%
Utilities	3.4%	8.2%	-1.2%
Total	100.0%	8.5%	-1.4%

MSCI - ACWIXUS	Sector Weight	Quarter Return	1-Year Return
Communication Services	6.1%	11.2%	-7.1%
Consumer Discretionary	11.9%	11.3%	1.7%
Consumer Staples	8.9%	6.5%	1.1%
Energy	5.5%	-0.3%	0.8%
Financials	19.9%	1.4%	-7.5%
Health Care	9.6%	4.2%	-4.4%
Industrials	12.7%	10.0%	-1.8%
Information Technology	11.8%	17.2%	-9.5%
Materials	8.3%	5.9%	-10.5%
Real Estate	2.1%	-1.7%	-19.7%
Utilities	3.2%	3.3%	-5.9%
Total	100.0%	6.9%	-5.1%

MSCI - Emerging Mkt	Sector Weight	Quarter Return	1-Year Return
Communication Services	10.6%	12.6%	-7.4%
Consumer Discretionary	13.9%	1.5%	-3.9%
Consumer Staples	6.3%	2.4%	-0.6%
Energy	4.7%	-0.3%	-4.8%
Financials	21.0%	-0.9%	-13.6%
Health Care	3.8%	-4.9%	-15.4%
Industrials	6.0%	2.2%	-6.3%
Information Technology	20.5%	14.7%	-13.9%
Materials	8.7%	2.4%	-15.6%
Real Estate	1.9%	-1.6%	-18.7%
Utilities	2.6%	-10.5%	-14.4%
Total	100.0%	4.0%	-10.7%

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Country	MSCI-EAFE	MSCI-ACWIxUS Weight	Quarter Return	1- Year Return
Japan	Weight 21.5%	13.9%	6.2%	-5.2%
United Kingdom	14.8%	9.6%	6.1%	-0.8%
France	12.5%	8.1%	14.6%	8.8%
Switzerland	10.0%	6.5%	6.7%	-6.8%
Germany	8.7%	5.6%	14.7%	2.2%
Australia	7.5%	4.8%	2.8%	-9.2%
Netherlands	4.6%	3.0%	16.6%	2.0%
Sweden	3.4%	2.2%	9.5%	-7.2%
Denmark	3.1%	2.0%	12.4%	14.2%
Hong Kong	2.7%	1.8%	-2.4%	-5.3%
Spain	2.6%	1.8%	15.7%	-5.3%
	2.5%	1.6%	14.7%	
Italy		1.0%		<u>9.1%</u> -3.1%
Singapore	1.5%		7.1%	
Belgium	1.0%	0.7%	6.3%	-2.2%
Finland	1.0%	0.6%	-0.3%	-4.2%
Ireland	0.8%	0.5%	21.4%	12.1%
Israel	0.7%	0.4%	0.8%	-20.6%
Norway	0.7%	0.4%	-7.2%	-21.6%
Portugal	0.2%	0.1%	3.4%	1.3%
New Zealand	0.2%	0.1%	8.0%	2.1%
Austria	0.2%	0.1%	2.6%	-5.7%
Total EAFE Countries	100.0%	64.8%	17.3%	-14.5%
Canada		7.5%	4.3%	-13.1%
Total Developed Countries		72.3%	16.2%	-14.3%
China		9.1%	4.7%	-4.7%
Taiwan		4.2%	14.8%	-13.7%
India		3.6%	-6.4%	-12.2%
Korea		3.3%	9.6%	-14.4%
Brazil		1.4%	-3.2%	-18.7%
Saudi Arabia		1.1%	0.1%	-19.0%
South Africa		1.0%	-0.6%	-20.6%
Mexico		0.7%	20.3%	8.6%
Thailand		0.6%	-1.7%	-0.9%
Indonesia		0.5%	6.0%	0.2%
Malaysia		0.4%	-3.6%	-10.9%
United Arab Emirates		0.3%	-7.5%	-28.4%
Qatar		0.3%	-0.7%	-22.6%
Kuwait		0.2%	-3.7%	-11.3%
Philippines		0.2%	2.4%	-13.7%
Poland		0.2%	-1.0%	-20.1%
Turkey		0.2%	-9.4%	52.8%
Chile		0.2%	5.2%	-3.0%
Greece		0.1%	15.8%	14.8%
Peru		0.1%	8.3%	-12.2%
Czech Republic		0.1%	33.0%	10.3%
Hungary		0.1%	2.9%	-12.1%
Columbia		0.1%	-13.5%	-12.1%
			-13.5%	
Eqypt		0.0%		-2.6%
Total Emerging Countries		27.7%	4.0%	-10.7%
Total ACWIxUS Countries		100.0%	6.9%	-5.1%

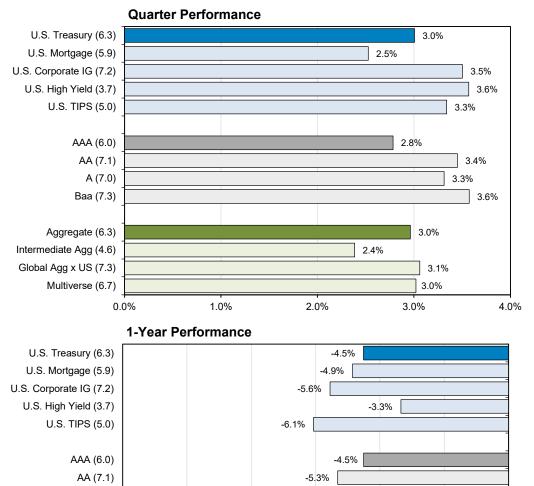
Source: Morningstar Direct, MSCI Global Index Monitor (Returns are Net in USD)

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## The Market Environment Domestic Bond Sector & Broad/Global Bond Market Performance (Duration) As of March 31, 2023

- After a challenging 2022 in fixed income markets brought on by the largest and most rapid increase in interest rates since the early 80's, the 1st quarter's positive bond benchmark results were a welcome relief. Despite two additional rate increases during the quarter, bond prices were aided by softening inflation and expectations that the Fed was nearing the end of its historic rate hiking cycle.
- The BB US Aggregate Bond Index, the bellwether US investment grade benchmark, returned a solid 3.0% for the period. Performance across the investment grade index's segments was also positive during the period with the US Corporate Investment Grade Index returning 3.5% and the US Mortgage Index component posting a return of 2.5%. Outside of the aggregate index's components, high yield bonds rose 3.6% and US TIPS posted a return of 3.3% for the quarter. The Bloomberg Global Aggregate ex US Index posted a similar return to the US bond benchmark with a return of 3.1% for the quarter.



-5.5%

-5.5%

-6.0%

-4.8%

-2.8%

-2.0%

-4.0%

A (7.0)

-10.7%

-10.0%

-12.0%

-7.9%

-8.0%

Baa (7.3)

Aggregate (6.3)

Multiverse (6.7)

Intermediate Agg (4.6)

Global Agg x US (7.3)

- Over the trailing 1-year period, the BB US Aggregate Bond Index declined by -4.8% and each of the benchmark's sub-components fell in a narrow band above and below the broad index's return. US TIPS, which are excluded from the aggregate index, dropped by -6.1% for the year. Lower quality high yield corporate bonds, which have a much shorter duration, were down less than their investment grade counterparts with the Bloomberg US High Yield Index returning -3.3% for the year.
- Performance for non-US bonds was also negative for the year with the developed market Bloomberg Global Aggregate ex US Index falling by -10.7%. The combination of rising interest rates, elevated inflation, geopolitical risks, and USD strength earlier in the year hindered non-US index performance.

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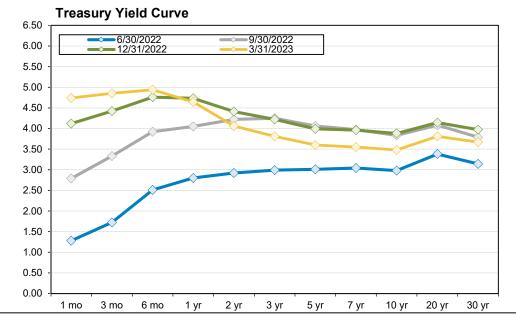
0.0%

Source: Bloomberg

- The gray band across the graph illustrates the range of the current Fed Funds Rate. During the 1st quarter the Fed raised the lower end of its target rate range from 4.25% to 4.75% through two successive 0.25% increases in February and March. After its March meeting, the Federal Open Market Committee (FOMC) altered a phrase in its press release that had been included since the beginning of this rate increase cycle. Their revised release stated - "some additional policy firming may be appropriate" and it removed "ongoing increases in the target range will be appropriate." The FOMC also stated that it would continue its policy of removing liquidity from the market by allowing bonds held on its balance sheet to mature without reinvesting those proceeds. While subtle, the capital market interpreted this change favorably in terms of the future path of interest rates.
- The yield on the US 10-year Treasury (green line) ended the period slightly lower as concerns over the state of the economy and March's banking disruption drove yields. The closing yield on the 10-Year Treasury was 3.88% at year-end but finished the quarter 0.40% lower at 3.48%. The benchmark's rate peaked in October, cresting at just over 4.00% before pulling back to its current level.
- The blue line illustrates changes in the BAA OAS (Option Adjusted Spread). This measure quantifies the additional yield premium that investors require to purchase and hold non-US Treasury investment grade issues. For the full year, the spread widened slightly from 1.42% to 1.80%. High Yield OAS spreads rose from roughly 3.27% at the beginning of the year to 4.74% at year-end. High yield spreads reached their highs in July 2022 at a level of 5.80% before trading lower the remainder of the year. A spike in both the BAA OAS and High Yield spreads is visible in March following a short-lived banking crisis of confidence addressed quickly by the FDIC and supported further by the Fed's aggressive short-term par loan program. Both spread measures traded lower on the news of the Government's intervention but were still elevated from pre-crisis levels at the end of the quarter.
- The lower graph provides a snapshot of the US Treasury yield curve at the end of each of the last four quarters. Short-term rates continued to rise during the 1st quarter as the Fed increased interest rates twice to combat elevated inflation. Despite these short-term rate increases, at the end of the quarter both intermediate and longer-term yields were slightly lower than they were at the end of the 3rd quarter of 2022. The yield curve remains inverted (short-term rates higher than long-term rates) between 2-year and 10-year maturities. Historically, a persistent inversion of these two key rates has been a precursor of an economic recession within 6- to 24-months.



**1-Year Trailing Market Rates** 10.00 Fed Funds Rate BAA OAS 9.00 High Yield OAS 10yr Treasury 8.00 7.00 6.00 5.00 4.00 3.00 2 00 1.00 0.00



Apr-22 May-22 Jun-22 Jul-22 Aug-22 Sep-22 Oct-22 Nov-22 Dec-22 Jan-23 Feb-23 Mar-23



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## Delray Beach Fire Pension Plan Compliance Checklist

As of March 31, 2023

Total Fund Compliance:	Yes	No	N/A
1. The Total Plan return equaled or exceeded the 6.75% actuarial earnings assumption over the trailing three and five year periods.	•		
2. The Total Plan return equaled or exceeded the total plan benchmark over the trailing three and five year periods.	•		
3. The Total Plan return ranked within the top 40th percentile of its peer group over the trailing three and five year periods.	•		

\* Based off net of fees and public plan peer group.

Total Equity Compliance:	Yes	No	N/A
1. Total equity returns meet or exceed the benchmark over the trailing three and five year periods.	•		
2. Total equity returns ranked within the top 40th percentile of its peer group over the trailing three and five year periods.			•
3. The total equity allocation was less than 70% of the total plan assets at market.	•		
4. Total foreign equity was less than 25% of the total plan assets at market.	•		

Total Fixed Income Compliance:		No	N/A
1. Total fixed income returns meet or exceed the benchmark over the trailing three and five year periods.		•	
2. Total fixed income returns ranked within the top 40th percentile of its peer group over the trailing three and five year periods.		•	
3. No more than 15% of the fixed income portfolio was rated below BBB/Baa.	•		

		Newton		Fide	lity Tota	al Mkt	Fide	elity Mid (	Сар
	Yes	No	N/A	Yes	No	N/A	Yes	No	N/A
1. Manager outperformed the index over the trailing three and five year periods.*	٠					٠			•
2. Manager ranked within the top 40th percentile over trailing three and five year periods.*	•					•			•
3. Less than four consecutive quarters of under performance relative to the benchmark.	٠			•			•		
4. Three and five-year down-market capture ratio less than the index.*	•					•			•
5. Manager reports compliance with PFIA.	•					٠			•

	Rhum	bline R1	000G	Pole	en LCG-	3 yrs	Fidel	ity Small	Сар
	Yes	No	N/A	Yes	No	N/A	Yes	No	N/A
1. Manager outperformed the index over the trailing three and five year periods.*			•		•				•
2. Manager ranked within the top 40th percentile over trailing three and five year periods.*	•				•				•
3. Less than four consecutive quarters of under performance relative to the benchmark.			•		•		•		
4. Three and five-year down-market capture ratio less than the index.*			•		•				•
5. Manager reports compliance with PFIA.			•	•					•



\*3 years used when 5 years unavailable

## Delray Beach Fire Pension Plan Compliance Checklist

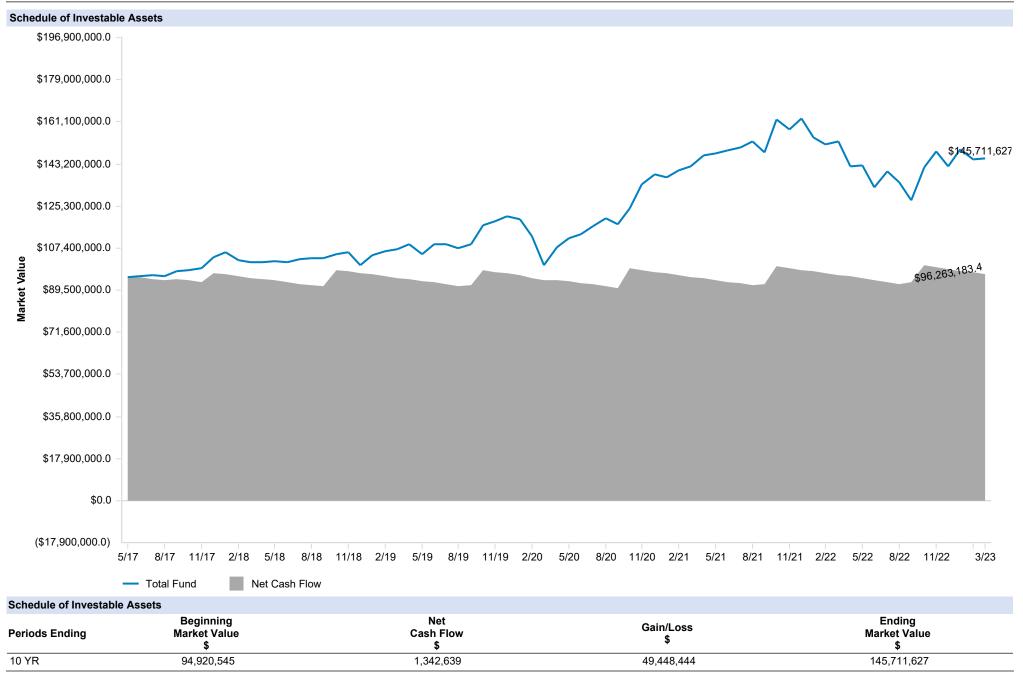
As of March 31, 2023

	H.L.	Intl Equ	ıity	Ма	ass Mut	ual		Baird	
	Yes	No	N/A	Yes	No	N/A	Yes	No	N/A
1. Manager outperformed the index over the trailing three and five year periods.*		•				٠	•		
2. Manager ranked within the top 40th percentile over trailing three and five year periods.*		•				٠		•	
3. Less than four consecutive quarters of under performance relative to the benchmark.	•			٠			•		
4. Three and five-year down-market capture ratio less than the index.*		•				٠		•	
5. Manager reports compliance with PFIA.			•			•			•

	Wes	tern Ass	sets	Pimo	o Diver	sified	Ame	erican Re	alty
	Yes	No	N/A	Yes	No	N/A	Yes	No	N/A
1. Manager outperformed the index over the trailing three and five year periods.*		•				٠		•	
2. Manager ranked within the top 40th percentile over trailing three and five year periods.*		٠				٠		•	
3. Less than four consecutive quarters of under performance relative to the benchmark.	•			٠			•		
4. Three and five-year down-market capture ratio less than the index.*		٠				٠		•	
5. Manager reports compliance with PFIA.			•			•			•

\*3 years used when 5 years unavailable

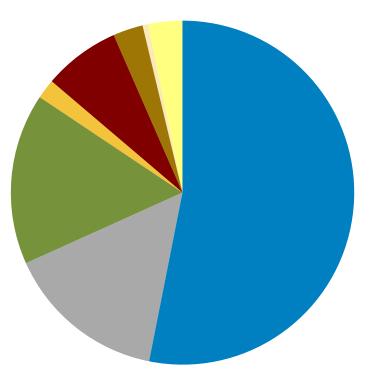




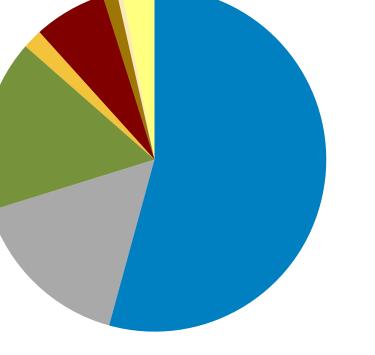


Mar-2023 : \$145,711,627

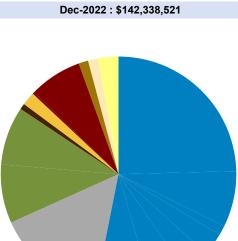
Dec-2022 : \$142,338,521

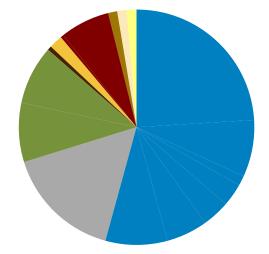


ocation			Allocation		
	Market Value	Allocation		Market Value	Allocation
US Equity	75,607,870	53.1	US Equity	79,068,146	54.3
International Equity	21,562,404	15.1	International Equity	23,238,763	15.9
US Fixed Income	22,910,734	16.1	US Fixed Income	23,664,038	16.2
Global Fixed Income	2,621,209	1.8	Global Fixed Income	2,689,517	1.8
US Private Real Estate	10,288,933	7.2	US Private Real Estate	9,924,034	6.8
Cash	4,021,681	2.8	Cash	1,954,396	1.3
Private Equity	725,035	0.5	Private Equity	720,495	0.5
US Private Equity	4,600,656	3.2	US Private Equity	4,452,239	3.1



# Mar-2023 : \$145,711,627



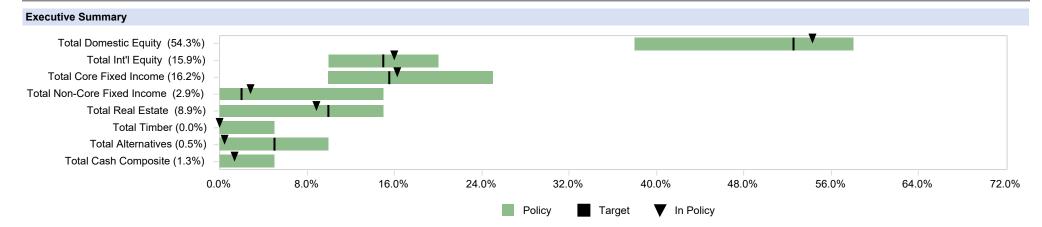


### Allocation

Allocation			Allocation		
	Market Value	Allocation		Market Value	Allocation
Newton LCV	34,984,222	24.6	Newton LCV	34,983,878	24.0
Fidelity Mid Cap Index Institutional (FSMDX)	10,947,998	7.7	Fidelity Mid Cap Index Institutional (FSMDX)	11,391,493	7.8
Fidelity Total Market Ix (FSKAX)	1,851,121	1.3	Fidelity Total Market Ix (FSKAX)	1,985,440	1.4
Fidelity Small Cap Index (FSSNX)	4,448,564	3.1	Fidelity Small Cap Index (FSSNX)	4,573,615	3.1
Mass Mutual Small Cap (MSOOX)	5,281,543	3.7	Mass Mutual Small Cap (MSOOX)	5,476,255	3.8
Polen Capital LCG	7,262,983	5.1	Polen Capital LCG	8,274,195	5.7
Rhumbline R1000G	10,831,439	7.6	Rhumbline R1000G	12,383,270	8.5
Harding Loevner Intl Equity (HLIZX)	21,562,404	15.1	Harding Loevner Intl Equity (HLIZX)	23,238,763	15.9
Baird Aggregate Bond Fund (BAGIX)	11,498,023	8.1	Baird Aggregate Bond Fund (BAGIX)	11,849,622	8.1
Western Assets Core Bond (WACSX)	11,412,711	8.0	Western Assets Core Bond (WACSX)	11,814,416	8.1
Crescent Direct Lending Levered Fund	1,138,441	0.8	Crescent Direct Lending Levered Fund	825,963	0.6
PIMCO Diversified Income Fund (PDIIX)	2,621,209	1.8	PIMCO Diversified Income Fund (PDIIX)	2,689,517	1.8
TCW Direct Lending VIII	399,174	0.3	TCW Direct Lending VIII	643,742	0.4
ARA Core Property	10,288,933	7.2	ARA Core Property	9,924,034	6.8
Angelo Gordon Net Lease Realty Fund III, L.P.	1,858,437	1.3	Angelo Gordon Net Lease Realty Fund III, L.P.	1,807,815	1.2
Dune Real Estate Fund III	1,204,603	0.8	Dune Real Estate Fund III	1,174,718	0.8
Deerpath Capital Advantage VI	725,035	0.5	Deerpath Capital Advantage VI	720,495	0.5
Mutual Fund Cash	245,942	0.2	Mutual Fund Cash	248,452	0.2
R&D	3,775,739	2.7	R&D	1,705,944	1.2

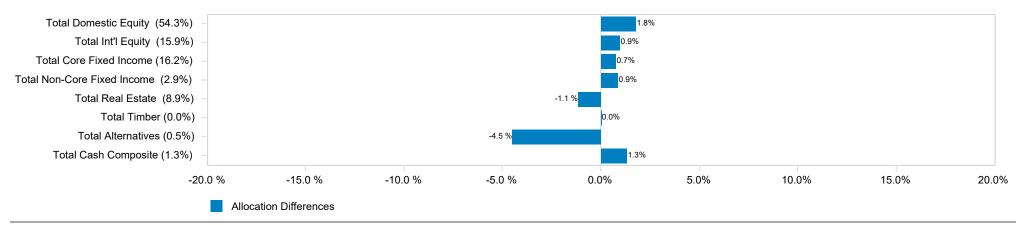


## Asset Allocation Compliance Delray Beach Firefighters' Retirement System Total Fund As of March 31, 2023



Asset Allocation Compliance

	Asset Allocation \$	Current Allocation (%)	Target Allocation (%)	Differences (%)	Target Rebal. (\$000)
Fotal Fund	145,711,627	100.00	100.00	0.00	-
Total Domestic Equity	79,068,146	54.26	52.50	1.76	-2,569,541
Total Int'l Equity	23,238,763	15.95	15.00	0.95	-1,382,019
Total Core Fixed Income	23,664,038	16.24	15.50	0.74	-1,078,736
Total Non-Core Fixed Income	4,159,222	2.85	2.00	0.85	-1,244,990
Total Real Estate	12,906,567	8.86	10.00	-1.14	1,664,595
Total Timber	-	0.00	0.00	0.00	-
Total Alternatives	720,495	0.49	5.00	-4.51	6,565,086
Total Cash Composite	1,954,396	1.34	0.00	1.34	-1,954,396





Financial Reconciliation									
	Market Value 01/01/2023	Net Transfers	Contributions	Distributions	Management Fees	Other Expenses	Income	Apprec./ Deprec.	Market Value 03/31/2023
Total Equity	97,170,273	810	-	-	-45,280	-4,848	218,214	4,967,739	102,306,909
Total Domestic Equity	75,607,870	810	-	-	-45,280	-4,848	218,214	3,291,379	79,068,146
Newton LCV	34,984,222	-	-	-	-33,487	-3,656	202,995	-166,196	34,983,878
Fidelity Total Market Ix (FSKAX)	1,851,121	-	-	-	-	-	-	134,319	1,985,440
Polen Capital LCG	7,262,983	-	-	-	-10,983	-718	9,179	1,013,733	8,274,195
Rhumbline R1000G	10,831,439	810	-	-	-810	-474	6,040	1,546,265	12,383,270
Fidelity Mid Cap Index Inst (FSMDX)	10,947,998	-	-	-	-	-	-	443,495	11,391,493
Fidelity Small Cap Index (FSSNX)	4,448,564	-	-	-	-	-	-	125,052	4,573,615
Mass Mutual Small Cap (MSOOX)	5,281,543	-	-	-	-	-	-	194,711	5,476,255
Total Int'l Equity	21,562,404	-	-	-	-	-	-	1,676,359	23,238,763
Harding Loevner Intl Equity (HLIZX)	21,562,404	-	-	-	-	-	-	1,676,359	23,238,763
Total Fixed Income	27,069,558	-87,911	-	-	-	-	218,391	623,222	27,823,260
Total Core Fixed Income	22,910,734	_	_	_	_	_	187,472	565,832	23,664,038
Baird Aggregate Bond Fund (BAGIX)	11,498,023	_			_		87,467	264,132	11,849,622
Western Assets Core Bond (WACSX)	11,412,711	-	-	-	-	-	100,005	301,700	11,814,416
Total New Core Fixed Income	4 4 5 9 9 9 5	07 044					20.040	<del>57</del> 000	4 4 50 000
Total Non-Core Fixed Income	4,158,825	-87,911	-	-	-	-	30,919	57,390	<b>4,159,222</b> 825,963
Crescent Direct Lending Levered Fund	1,138,441	-332,121	-	-	-	-	-	19,643	
PIMCO Diversified Income Fund (PDIIX)	2,621,209	-	-	-	-	-	30,919	37,389	2,689,517
TCW Direct Lending VIII	399,174	244,210	-	-	-	-	-	358	643,742
Total Real Estate	13,351,973	-64,745	-	-	-27,366	-	102,889	-456,184	12,906,567
ARA Core Property	10,288,933	-	-	-	-27,366	-	102,889	-440,422	9,924,034
Angelo Gordon Net Lease Realty Fund III, L.P.	1,858,437	-64,745	-	-	-	-	-	14,123	1,807,815
Dune Real Estate Fund III	1,204,603	-	-	-	-	-	-	-29,885	1,174,718
Total Alternatives	725,035	-27,098	-	-	-	-	-	22,558	720,495
Deerpath Capital Advantage VI	725,035	-27,098	-	-	-	-	-	22,558	720,495
Total Cash Accounts	4,021,681	178,944	356,699	-2,556,168	-	-74,699	27,939	-	1,954,396
R&D	3,775,739	178,944	356,699	-2,556,168	-	-74,699	25,428	-	1,705,944
Mutual Fund Cash	245,942	-	-	-	-	-	2,510	-	248,452
Total Fund	142,338,521	-	356,699	-2,556,168	-72,646	-79,547	567,433	5,157,335	145,711,627



Financial Reconciliation									
	Market Value 10/01/2022	Net Transfers	Contributions	Distributions	Management Fees	Other Expenses	Income	Apprec./ Deprec.	Market Value 03/31/2023
Total Equity	84,988,566	3,276,193	-	-	-91,946	-9,075	1,303,799	12,839,372	102,306,909
Total Domestic Equity	67,802,336	1,501,193	-	-	-91,946	-9,075	755,356	9,110,282	79,068,146
Newton LCV	30,320,448	-	-	-	-62,924	-6,663	409,362	4,323,653	34,983,878
Fidelity Total Market Ix (FSKAX)	1,043,418	750,000	-	-	-	-	26,582	165,439	1,985,440
Polen Capital LCG	11,140,841	-4,000,000	-	-	-27,830	-1,814	24,754	1,138,244	8,274,195
Rhumbline R1000G	6,215,108	4,751,193	-	-	-1,193	-598	26,253	1,392,508	12,383,270
Fidelity Mid Cap Index Inst (FSMDX)	10,024,704	-	-	-	-	-	139,278	1,227,511	11,391,493
Fidelity Small Cap Index (FSSNX)	4,186,788	-	-	-	-	-	55,270	331,557	4,573,615
Mass Mutual Small Cap (MSOOX)	4,871,028	-	-	-	-	-	73,857	531,370	5,476,255
Total Int'l Equity	17,186,230	1,775,000	-	-	-	-	548,443	3,729,090	23,238,763
Harding Loevner Intl Equity (HLIZX)	17,186,230	1,775,000	-	-	-	-	548,443	3,729,090	23,238,763
Total Fixed Income	18,007,218	8,612,125	-		-	-	419,460	784,457	27,823,260
Total Core Fixed Income	13,896,509	8,725,000	-	-	-	-	343,312	699,217	23,664,038
Baird Aggregate Bond Fund (BAGIX)	7,117,980	4,225,000	-	-	-	-	170,391	336,251	11,849,622
Western Assets Core Bond (WACSX)	6,778,530	4,500,000	-	-	-	-	172,921	362,966	11,814,416
Total Non-Core Fixed Income	4,110,709	-112,875	-	-	-	-	76,148	85,240	4,159,222
Crescent Direct Lending Levered Fund	1,202,732	-343,919	-	-	-	-	-	-32,850	825,963
PIMCO Diversified Income Fund (PDIIX)	2,502,277	-	-	-	-	-	76,148	111,092	2,689,517
TCW Direct Lending VIII	405,700	231,044	-	-	-	-	-	6,998	643,742
Total Real Estate	13,983,733	-112,723	-	-	-55,739	-	211,976	-1,120,680	12,906,567
ARA Core Property	10,908,624	-	-	-	-55,739	-	211,976	-1,140,827	9,924,034
Angelo Gordon Net Lease Realty Fund III, L.P.	1,878,134	-112,723	-	-	-	-	-	42,404	1,807,815
Dune Real Estate Fund III	1,196,975	-	-	-	-	-	-	-22,257	1,174,718
Total Timber	148,009	-147,777	-	-	-	-	-	-232	-
Molpus Woodlands Timber	148,009	-147,777	-	-	-	-	-	-232	-
Total Alternatives	729,285	-41,420	-	-	-	-	-	32,630	720,495
Deerpath Capital Advantage VI	729,285	-41,420	-	-	-	-	-	32,630	720,495
Total Cash Accounts	9,755,833	-11,586,399	8,944,237	-5,182,869	-	-99,716	123,309	-	1,954,396
R&D	1,560,882	-3,586,399	8,944,237	-5,182,869	-	-99,716	69,807	-	1,705,944
Mutual Fund Cash	8,194,951	-8,000,000	-	-	-	-	53,501	-	248,452
Total Fund	127,612,645	-	8,944,237	-5,182,869	-147,685	-108,791	2,058,544	12,535,546	145,711,627



Comparative Performance																	
	Q	ſR	ΥT	D	FY	TD	1 Y	′R	2	ΥR	3 \	(R	5 \	ŕR	Ince	ption	Inception Date
Total Fund (Net)	3.98	(68)	3.98	(68)	10.76	(44)	-5.51	(49)	0.41	(28)	12.15	(15)	6.92	(11)	5.69	(79)	10/01/2005
Total Fund Policy	5.35	(15)	5.35	(15)	11.47	(31)	-6.61	(83)	0.02	(38)	10.21	(61)	6.48	(28)	6.33	(40)	
Difference	-1.37		-1.37		-0.71		1.10		0.39		1.94		0.44		-0.64		
All Public Plans-Total Fund Median	4.44		4.44		10.41		-5.53		-0.45		10.62		5.97		6.16		
Total Fund (Gross)	4.04	(62)	4.04	(62)	10.87	(58)	-5.29	(53)	0.64	(24)	12.41	(7)	7.21	(9)	6.11	(58)	10/01/2005
Total Fund Policy	5.35	(18)	5.35	(18)	11.47	(44)	-6.61	(92)	0.02	(34)	10.21	(37)	6.48	(23)	6.33	(51)	
Difference	-1.31		-1.31		-0.60		1.32		0.62		2.20		0.73		-0.22		
IM Mixed-Asset Target Alloc Moderate (MF) Median	4.42		4.42		11.20		-5.17		-0.64		9.52		5.37		6.37		
Total Equity	5.34		5.34		16.50		-6.10		0.86		18.43		9.29		7.46		10/01/2005
Total Equity Policy	7.26		7.26		16.54		-8.07		-0.52		16.60		8.25		6.92		
Difference	-1.92		-1.92		-0.04		1.97		1.38		1.83		1.04		0.54		
Total Domestic Equity	4.64	(59)	4.64	(59)	14.53	(53)	-6.95	(53)	2.01	(49)	20.32	(30)	11.07	(21)	8.47	(67)	10/01/2005
Total Domestic Equity Policy	7.38	(33)	7.38	(33)	14.60	(53)	-9.21	(72)	0.28	(63)	18.11	(59)	10.13	(37)	9.02	(48)	
Difference	-2.74		-2.74		-0.07		2.26		1.73		2.21		0.94		-0.55		
IM U.S. All Cap Equity (SA+CF+MF) Median	5.74		5.74		14.82		-6.61		1.72		18.71		9.38		9.01		
Total Int'l Equity	7.77	(58)	7.77	(58)	23.70	(64)	-3.34	(58)	-3.73	(81)	11.74	(88)	3.74	(54)	4.32	(19)	05/01/2007
Total Int'l Policy	6.87	(79)	6.87	(79)	22.13	(80)	-5.07	(77)	-3.29	(76)	11.80	(86)	2.47	(80)	1.79	(98)	
Difference	0.90		0.90		1.57		1.73		-0.44		-0.06		1.27		2.53		
IM International Large Cap Core Equity (SA+CF) Median	8.11		8.11		25.22		-2.78		-1.35		13.39		3.84		3.60		
Total Fixed Income	3.12	(62)	3.12	(62)	5.09	(62)	-5.11	(73)	-5.16	(95)	-2.45	(93)	0.27	(99)	3.73	(59)	10/01/2005
Total Fixed Policy	2.96	(72)	2.96	(72)	4.89	(73)	-4.78	(59)	-4.47	(79)	-2.77	(97)	0.90	(94)	3.15	(94)	
Difference	0.16		0.16		0.20		-0.33		-0.69		0.32		-0.63		0.58		
IM U.S. Broad Market Fixed Income (SA+CF+MF) Median	3.22		3.22		5.28		-4.62		-4.04		-0.58		1.64		3.80		
Total Real Estate	-2.65	(41)	-2.65	(41)	-6.52	(25)	-1.02	(22)	10.37	(59)	6.31	(82)	6.47	(77)	4.82	(99)	07/01/2007
NCREIF ODCE	-3.31	(68)	-3.31	(68)	-8.04	(51)	-2.93	(48)	12.27	(33)	9.07	(26)	8.03	(50)	6.16	(59)	
Difference	0.66		0.66		1.52		1.91		-1.90		-2.76		-1.56		-1.34		
IM U.S. Open End Private Real Estate (SA+CF) Median	-2.98		-2.98		-8.04		-2.96		10.95		8.58		8.01		6.37		

^ AndCo does not match the custodian market value for (Garcia) February, due to a correction of a bond price not made by the custodian until the March statement. \* Some Non-Core and Real Estate are on the IRR page.



# Comparative Performance Total Fund Trailing Returns

As of March 31, 2023

	Q	TR	۲۲	D	FY	TD	1 Y	(R	2 `	YR	3 \	/R	5 `	YR	Ince	ption	Inception Date
Total Domestic Equity	4.64		4.64		14.53		-6.95		2.01		20.32		11.07		8.47		10/01/2005
Newton LCV	0.10	(67)	0.10	(67)	15.61	(34)	0.46	(6)	11.16	(1)	28.35	(3)	12.08	(8)	10.98	(9)	01/01/2018
Russell 1000 Value Index	1.01	(46)	1.01	(46)	13.55	(59)	-5.91	(70)	2.50	(78)	17.93	(76)	7.50	(79)	6.54	(79)	
Difference	-0.91		-0.91		2.06		6.37		8.66		10.42		4.58		4.44		
IM U.S. Large Cap Value Equity (SA+CF) Median	0.85		0.85		14.30		-4.52		3.94		19.95		9.03		7.94		
Fidelity Total Market Ix (FSKAX)	7.26	(38)	7.26	(38)	14.95	(59)	-8.76	(71)	0.94	(72)	N/A		N/A		5.50	(63)	12/01/2020
Dow Jones U.S. Total Stock Market Index	7.24	(38)	7.24	(38)	14.94	(59)	-8.77	(71)	0.93	(72)	18.34	(25)	10.32	(49)	5.50	(63)	
Difference	0.02		0.02		0.01		0.01		0.01		N/A		N/A		0.00		
IM U.S. Large Cap Core Equity (MF) Median	6.60		6.60		15.34		-7.77		1.89		17.55		10.27		5.92		
Fidelity Mid Cap Index Institutional (FSMDX)	4.05	(28)	4.05	(28)	13.63	(36)	-8.74	(74)	-1.24	(74)	N/A		N/A		4.35	(81)	12/01/2020
Russell Midcap Index	4.06	(28)	4.06	(28)	13.61	(37)	-8.78	(76)	-1.24	(75)	19.20	(54)	8.05	(27)	4.34	(81)	
Difference	-0.01		-0.01		0.02		0.04		0.00		N/A		N/A		0.01		
IM U.S. Mid Cap Core Equity (MF) Median	2.31		2.31		12.78		-6.60		0.35		19.49		6.91		7.29		
Fidelity Small Cap Index (FSSNX)	2.81	(57)	2.81	(57)	9.24	(78)	-11.41	(70)	-8.67	(75)	N/A		N/A		-2.70	(69)	01/01/2021
Russell 2000 Index	2.74	(59)	2.74	(59)	9.14	(79)	-11.61	(71)	-8.74	(76)	17.51	(67)	4.71	(73)	-2.78	(69)	
Difference	0.07		0.07		0.10		0.20		0.07		N/A		N/A		0.08		
IM U.S. Small Cap Equity (MF) Median	3.29		3.29		12.02		-9.16		-4.22		19.98		5.91		2.57		
Mass Mutual Small Cap (MSOOX)	3.69	(44)	3.69	(44)	12.43	(46)	-7.29	(33)	-2.79	(36)	N/A		N/A		-1.35	(40)	03/01/2021
Russell 2000 Index	2.74	(59)	2.74	(59)	9.14	(79)	-11.61	(71)	-8.74	(76)	17.51	(67)	4.71	(73)	-7.97	(72)	
Difference	0.95		0.95		3.29		4.32		5.95		N/A		N/A		6.62		
IM U.S. Small Cap Equity (MF) Median	3.29		3.29		12.02		-9.16		-4.22		19.98		5.91		-2.72		
Total Growth	14.24	(44)	14.24	(44)	14.49	(76)	-16.94	(92)	-5.75	(85)	12.17	(90)	11.87	(47)	7.19	(100)	07/01/2007
Russell 1000 Growth Index	14.37	(38)	14.37	(38)	16.88	(50)	-10.90	(38)	1.21	(21)	18.58	(15)	13.66	(16)	10.98	(29)	
Difference	-0.13		-0.13		-2.39		-6.04		-6.96		-6.41		-1.79		-3.79		
IM U.S. Large Cap Growth Equity (SA+CF+MF) Median	13.81		13.81		16.86		-11.78		-1.60		15.79		11.78		10.50		
Rhumbline R1000G	14.33	(30)	14.33	(30)	16.85	(47)	-10.90	(52)	1.22	(35)	18.57	(22)	13.67	(18)	13.28	(21)	01/01/2018
Russell 1000 Growth Index	14.37	(30)	14.37	(30)	16.88	(46)	-10.90	(52)	1.21	(35)	18.58	(22)	13.66	(18)	13.27	(21)	
Difference	-0.04		-0.04		-0.03		0.00		0.01		-0.01		0.01		0.01		
IM U.S. Large Cap Growth Equity (SA+CF) Median	12.78		12.78		16.65		-10.67		-1.05		16.35		11.82		11.91		
Polen Capital LCG	14.09	(34)	14.09	(34)	14.40	(76)	-17.63	(94)	-6.46	(86)	11.32	(92)	N/A		12.92	(81)	01/01/2019
Russell 1000 Growth Index	14.37	(30)	14.37	(30)	16.88	(46)	-10.90	(52)	1.21	(35)	18.58	(22)	13.66	(18)	17.06	(18)	
Difference	-0.28		-0.28		-2.48		-6.73		-7.67		-7.26		N/A		-4.14		
IM U.S. Large Cap Growth Equity (SA+CF) Median	12.78		12.78		16.65		-10.67		-1.05		16.35		11.82		14.76		

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# Comparative Performance Total Fund Trailing Returns

As of March 31, 2023

	Q	ſR	ΥT	D	FY	TD	1 Y	′R	2	YR	3 \	/R	5 ٦	/R	Ince	ption	Inception Date
Total Int'l Equity	7.77		7.77		23.70		-3.34		-3.73		11.74		3.74		4.32		05/01/2007
Harding Loevner Intl Equity (HLIZX)	7.77	(38)	7.77	(38)	23.70	(44)	-3.34	(38)	-3.74	(46)	11.74	(49)	3.74	(20)	6.46	(21)	09/01/2016
MSCI AC World ex USA (Net)	6.87	(51)	6.87	(51)	22.13	(53)	-5.07	(51)	-3.29	(43)	11.80	(48)	2.47	(42)	5.47	(42)	
Difference	0.90		0.90		1.57		1.73		-0.45		-0.06		1.27		0.99		
IM International Equity (MF) Median	6.91		6.91		22.55		-4.96		-4.46		11.63		1.99		5.15		
Total Core Fixed Income	3.29		3.29		5.63		-5.62		-5.91		-3.07		0.19		3.00		10/01/2005
Core Fixed Policy	2.96		2.96		4.89		-4.78		-4.47		-2.77		0.90		3.11		
Difference	0.33		0.33		0.74		-0.84		-1.44		-0.30		-0.71		-0.11		
Baird Aggregate Bond Fund (BAGIX)	3.06	(60)	3.06	(60)	5.27	(27)	-4.67	(15)	N/A		N/A		N/A		-7.48	(38)	09/01/2021
Blmbg. U.S. Aggregate Index	2.96	(68)	2.96	(68)	4.89	(49)	-4.78	(22)	-4.47	(26)	-2.77	(86)	0.90	(43)	-7.23	(21)	
Difference	0.10		0.10		0.38		0.11		N/A		N/A		N/A		-0.25		
IM U.S. Broad Market Core Fixed Income (MF) Median	3.14		3.14		4.88		-5.31		-4.77		-1.85		0.85		-7.65		
Western Assets Core Bond (WACSX)	3.52	(14)	3.52	(14)	5.87	(5)	-6.72	(92)	N/A		N/A		N/A		-9.68	(96)	09/01/2021
Blmbg. U.S. Aggregate Index	2.96	(68)	2.96	(68)	4.89	(49)	-4.78	(22)	-4.47	(26)	-2.77	(86)	0.90	(43)	-7.23	(21)	
Difference	0.56		0.56		0.98		-1.94		N/A		N/A		N/A		-2.45		
IM U.S. Broad Market Core Fixed Income (MF) Median	3.14		3.14		4.88		-5.31		-4.77		-1.85		0.85		-7.65		
Total Non-Core Fixed Income *	2.16		2.16		3.98		-2.79		-1.95		0.21		0.73		5.36		07/01/2010
Bloomberg Global Aggregate	3.01		3.01		7.69		-8.07		-7.24		-3.43		-1.34		1.10		
Difference	-0.85		-0.85		-3.71		5.28		5.29		3.64		2.07		4.26		
PIMCO Diversified Income Fund (PDIIX)	2.61	(62)	2.61	(62)	7.48	(37)	-4.75	(40)	-4.53	(36)	N/A		N/A		-2.92	(26)	10/01/2020
Blmbg. Global Credit (Hedged)	2.97	(35)	2.97	(35)	6.38	(46)	-4.83	(41)	-4.68	(38)	0.02	(29)	1.36	(11)	-3.61	(34)	
Difference	-0.36		-0.36		1.10		0.08		0.15		N/A		N/A		0.69		
IM Global Fixed Income (MF) Median	2.76		2.76		6.15		-6.10		-5.96		-1.50		-0.41		-4.52		
Total Real Estate *	-2.65		-2.65		-6.52		-1.02		10.37		6.31		6.47		4.82		07/01/2007
ARA Core Property	-3.28	(67)	-3.28	(67)	-8.52	(55)	-2.50	(35)	12.44	(31)	8.81	(44)	8.14	(39)	6.18	(58)	07/01/2007
NCREIF ODCE	-3.31	(68)	-3.31	(68)	-8.04	(51)	-2.93	(48)	12.27	(33)	9.07	(26)	8.03	(50)	6.16	(59)	
Difference	0.03	× /	0.03	. /	-0.48		0.43	. /	0.17	. /	-0.26		0.11	. /	0.02	· · ·	
IM U.S. Open End Private Real Estate (SA+CF) Median	-2.98		-2.98		-8.04		-2.96		10.95		8.58		8.01		6.37		

\* Some products shown on IRR page.

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# **Comparative Performance - IRR**

## As of March 31, 2023

Comparative Performance - IRR						
	QTR	1 YR	3 YR	5 YR	Inception	Inception Date
Angelo Gordon Net Lease Realty Fund III, L.P.	0.76	5.81	7.14	7.01	6.96	03/10/2014
Dune Real Estate Fund III	-2.48	2.81	-3.19	0.22	6.81	11/06/2014
Crescent Direct Lending Levered Fund	1.93	0.28	5.58	5.40	6.97	10/09/2014
Deerpath Capital Advantage VI	3.16	7.71	N/A	N/A	10.93	12/02/2021
TCW Direct Lending VIII	0.09	N/A	N/A	N/A	0.80	07/21/2022

Comparative Performance Total Fund Trailing Returns As of March 31, 2023

Comparative Performance																	
	Oct-2021	Oct-2020	Oct-2019	Oct-2		Oct-2		Oct-		Oct-		Oct-		Oct-			2012
	To Sep-2022	To Sep-2021	To Sep-2020	T Sep-2		To Sep-2		T Sep-	0 2017	T Sep-:		T Sep-		T Sep-	0 2014	-	Го -2013
Total Fund (Net)	-14.50 (30)	23.38 (4)	8.64 (29)	4.54	(44)	8.29		11.09	(28)	8.82	(49)	-1.22		10.01	(28)	10.96	
Total Fund Policy	-15.17 (37)	18.71 (26)	10.42 (16)	5.02	(34)	8.59	• •	11.90	(16)	10.34	(18)	0.55	•	10.23	(25)	10.24	• •
Difference	0.67	4.67	-1.78	-0.48	. ,	-0.30	. ,	-0.81		-1.52		-1.77		-0.22	. ,	0.72	. ,
IM Mixed-Asset Target Alloc Moderate (MF) Median	-16.36	16.28	6.34	4.00		5.09		9.96		8.77		-2.28		8.33		10.26	
Total Fund (Gross)	-14.29 (54)	23.66 (18)	8.95 (30)	4.89	(31)	8.66	(28)	11.49	(63)	9.41	(66)	-0.72	(47)	10.58	(35)	11.52	(69)
Total Fund Policy	-15.17 (67)	18.71 (74)	10.42 (14)	5.02	(28)	8.59	(29)	11.90	(53)	10.34	(32)	0.55	(17)	10.23	(45)	10.24	(82)
Difference	0.88	4.95	-1.47	-0.13		0.07		-0.41		-0.93		-1.27		0.35		1.28	
All Public Plans-Total Fund Median	-13.78	20.73	7.55	4.27		7.55		12.10		9.84		-0.87		9.93		12.50	
Total Equity	-18.96	32.48	11.86	3.19		13.13		16.40		11.59		-3.61		13.96		21.06	
Total Equity Policy	-20.42	29.97	12.49	1.49		13.60		18.94		13.34		-6.20		11.73		19.62	
Difference	1.46	2.51	-0.63	1.70		-0.47		-2.54		-1.75		2.59		2.23		1.44	
Total Domestic Equity	-16.71 (52)	35.98 (35)	11.18 (47)	5.47	(23)	16.10	(47)	14.99	(85)	12.80	(49)	-1.73	(57)	17.23	(49)	22.56	(62)
Total Domestic Equity Policy	-18.87 (63)	31.98 (52)	15.74 (35)	2.36	(46)	17.73	(39)	18.62	(54)	14.77	(28)	-1.18	(53)	17.67	(43)	22.03	(67)
Difference	2.16	4.00	-4.56	3.11		-1.63		-3.63		-1.97		-0.55		-0.44		0.53	
IM U.S. All Cap Equity (SA+CF+MF) Median	-16.26	32.13	9.90	1.99		15.50		18.91		12.62		-0.81		17.14		24.30	
Total Int'l Equity	-27.22 (75)	20.58 (89)	14.11 (14)	-3.34	(74)	5.85	(15)	18.68	(71)	7.98	(52)	-8.63	(67)	6.07	(46)	16.67	(89)
Total Int'l Policy	-25.17 (49)	23.92 (67)	3.00 (60)	-1.23	(47)	1.76	(61)	19.61	(60)	9.26	(37)	-12.16	(90)	4.77	(64)	16.48	(89)
Difference	-2.05	-3.34	11.11	-2.11		4.09		-0.93		-1.28		3.53		1.30		0.19	
IM International Large Cap Core Equity (SA+CF) Median	-25.44	25.37	4.65	-1.57		2.54		20.46		8.20		-6.93		5.71		22.18	
Total Fixed Income	-15.69 (81)	0.15 (81)	5.22 (81)	7.91	(82)	0.99	(20)	3.93	(24)	5.81	(64)	2.09	(60)	6.00	(34)	2.81	(12)
Total Fixed Policy	-14.60 (52)	-0.90 (95)	6.98 (57)	10.30	(51)	-1.22	(89)	0.07	(94)	5.19	(84)	2.94	(29)	3.96	(86)	-2.35	(97)
Difference	-1.09	1.05	-1.76	-2.39		2.21		3.86		0.62		-0.85		2.04		5.16	
IM U.S. Broad Market Fixed Income (SA+CF+MF) Median	-14.59	1.70	7.20	10.30		-0.46		1.88		6.27		2.46		5.33		-0.43	
Total Real Estate	20.87 (49)	10.61 (85)	-2.00 (82)	5.87	(71)	10.10	(25)	9.82	(26)	9.06	(89)	14.70	(56)	12.33	(71)	8.10	(100)
NCREIF ODCE	22.76 (41)	15.75 (52)	1.74 (44)	6.17	(69)	8.82	(58)	7.81	(51)	10.62	(68)	14.71	(56)	12.39	(69)	12.47	(66)
Difference	-1.89	-5.14	-3.74	-0.30		1.28		2.01		-1.56		-0.01		-0.06		-4.37	
IM U.S. Open End Private Real Estate (SA+CF) Median	20.46	15.91	1.62	6.80		8.98		7.83		11.18		15.20		12.90		13.22	
Total Timber	-43.56	-8.13	-4.04	5.58		-9.38		0.28		6.48		6.70		9.49		4.51	
NCREIF Timberland Index	12.54	5.01	0.19	2.10		4.00		3.28		3.28		9.26		10.38		9.68	
Difference	-56.10	-13.14	-4.23	3.48		-13.38		-3.00		3.20		-2.56		-0.89		-5.17	



Comparative Performance Total Fund Trailing Returns

As of March 31, 2023

													,		arch 51, 2025
	Oct-2021 To Sep-2022	Oct-2020 To Sep-2021	Oct-2019 To Sep-2020	Oct-20 To Sep-20		Oct-2017 To Sep-2018	Т	2016 o 2017	Oct-/ T Sep-	o	Oct-2 To Sep-2	5	Oct-/ T Sep-/	o	Oct-2012 To Sep-2013
Total Domestic Equity	-16.71	35.98	11.18	5.47		16.10	14.99		12.80		-1.73		17.23		22.56
Vanguard Total Stock Mkt (VTSAX)	N/A	N/A	14.99 (33)	N/A		N/A	N/A		N/A		N/A		N/A		N/A
CRSP U.S. Total Market TR Index	-17.98 (53)	32.11 (50)	14.99 (33)	2.92 (	(34)	17.62 (32)	18.64	(40)	14.99	(28)	-0.55	(46)	17.77	(23)	21.59 (55)
Difference	N/A	N/A	0.00	N/A		N/A	N/A		N/A		N/A		N/A		N/A
IM U.S. Equity (MF) Median	-17.39	31.93	4.43	0.15		13.34	17.56		12.15		-0.93		13.77		22.53
Macquarie (Delaware Value)	N/A	N/A	N/A	N/A		N/A	12.49	(89)	19.29	(11)	-3.67	(56)	21.59	(16)	24.74 (38)
Russell 1000 Value Index	-11.36 (66)	35.01 (59)	-5.03 (66)	4.00 (	(39)	9.45 (76)	15.12	(77)	16.19	(25)	-4.42	• •	18.89	(42)	22.30 (58)
Difference	N/A	N/A	N/A	N/A		N/A	-2.63		3.10		0.75	. ,	2.70		2.44
IM U.S. Large Cap Value Equity (SA+CF) Median	-9.57	37.00	-3.28	2.54		11.80	17.80		13.34		-3.39		18.35		23.42
Newton LCV	-0.72 (4)	48.24 (13)	-7.39 (79)	3.47 (	(44)	N/A	N/A		N/A		N/A		N/A		N/A
Russell 1000 Value Index	-11.36 (66)	35.01 (59)	-5.03 (66)	4.00 (	(39)	9.45 (76)	15.12	(77)	16.19	(25)	-4.42	(63)	18.89	(42)	22.30 (58)
Difference	10.64	13.23	-2.36	-0.53		N/A	N/A		N/A		N/A		N/A		N/A
IM U.S. Large Cap Value Equity (SA+CF) Median	-9.57	37.00	-3.28	2.54		11.80	17.80		13.34		-3.39		18.35		23.42
Great Lakes SMid Cap	N/A	N/A	-2.21 (66)	N/A		N/A	N/A		N/A		N/A		N/A		N/A
Russell 2500 Index	-21.11 (69)	45.03 (42)	2.22 (53)	-4.04 (	(63)	16.19 (54)	17.79	(68)	14.44	(33)	0.38	(68)	8.97	(69)	29.79 (60)
Difference	N/A	N/A	-4.43	N/A		N/A	N/A		N/A		N/A		N/A		N/A
IM U.S. SMID Cap Core Equity (SA+CF) Median	-18.31	42.28	3.08	-2.58		16.26	19.18		12.45		2.52		11.13		30.41
Fidelity Total Market Ix (FSKAX)	-18.04 (66)	N/A	N/A	N/A		N/A	N/A		N/A		N/A		N/A		N/A
Dow Jones U.S. Total Stock Market Index	-18.05 (66)	32.13 (11)	14.77 (50)	2.81 (	(58)	17.58 (39)	18.67	(44)	14.93	(24)	-0.55	(33)	17.69	(48)	21.44 (24)
Difference	0.01	N/A	N/A	N/A		N/A	N/A		N/A		N/A		N/A		N/A
IM U.S. Large Cap Core Equity (MF) Median	-17.11	29.04	14.72	3.57		16.73	18.34		13.01		-1.33		17.49		19.82
Fidelity Mid Cap Index Institutional (FSMDX)	-19.38 (90)	N/A	N/A	N/A		N/A	N/A		N/A		N/A		N/A		N/A
Russell Midcap Index	-19.39 (90)	38.11 (47)	4.55 (17)	3.19 (	(37)	13.98 (19)	15.32	(46)	14.25	(27)	-0.25	(30)	15.83	(16)	27.91 (41)
Difference	0.01	N/A	N/A	N/A		N/A	N/A		N/A		N/A		N/A		N/A
IM U.S. Mid Cap Core Equity (MF) Median	-14.07	37.86	-2.64	1.86		9.96	15.17		11.88		-1.28		12.77		27.41
Fidelity Small Cap Index (FSSNX)	-23.39 (64)	N/A	N/A	N/A		N/A	N/A		N/A		N/A		N/A		N/A
Russell 2000 Index	-23.50 (65)	47.68 (53)	0.39 (40)	-8.89 (	(57)	15.24 (41)	20.74	(30)	15.47	(31)	1.25	(48)	3.93	(60)	30.06 (50)
Difference	0.11	N/A	N/A	N/A		N/A	N/A		N/A		N/A		N/A		N/A
IM U.S. Small Cap Equity (MF) Median	-19.95	48.49	-4.24	-8.26		13.44	19.18		12.99		0.97		4.69		29.97
Mass Mutual Small Cap (MSOOX)	-18.57 (41)	N/A	N/A	N/A		N/A	N/A		N/A		N/A		N/A		N/A
Russell 2000 Index	-23.50 (65)	47.68 (53)	0.39 (40)	-8.89 (	(57)	15.24 (41)	20.74	(30)	15.47	(31)	1.25	(48)	3.93	(60)	30.06 (50)
Difference	4.93	N/A	N/A	N/A		N/A	N/A		N/A		N/A		N/A		N/A
IM U.S. Small Cap Equity (MF) Median	-19.95	48.49	-4.24	-8.26		13.44	19.18		12.99		0.97		4.69		29.97



Comparative Performance Total Fund Trailing Returns

As of March 31, 2023

																	1, 2023
	Oct-2021 To Sep-2022	Oct-2020 To Sep-2021	Oct-2019 To Sep-2020	Т	2018 o 2019	Oct-2 To Sep-2	0		2016 o 2017	Т	2015 o 2016	Oct-/ T Sep-/	0	Oct-2 T Sep-2		Oct-2 T Sep-2	o
Total Growth	-32.99 (83)	29.92 (18)	36.35 (40)	11.18	(6)	22.19	(79)	14.70	(97)	7.63	(92)	4.20	(43)	18.19	(51)	18.74	(71)
Russell 1000 Growth Index	-22.59 (27)	27.32 (47)	37.53 (34)	3.71	(46)	26.30	(44)	21.94	(41)	13.76	(21)	3.17	(58)	19.15	(40)	19.27	(65)
Difference	-10.40	2.60	-1.18	7.47		-4.11		-7.24		-6.13		1.03		-0.96		-0.53	
IM U.S. Large Cap Growth Equity (SA+CF+MF) Median	-26.62	27.18	34.98	3.32		25.47		21.32		12.03		3.81		18.25		20.86	
Rhumbline R1000G	-22.55 (40)	27.31 (49)	37.56 (31)	3.70	(52)	N/A		N/A		N/A		N/A		N/A		N/A	
Russell 1000 Growth Index	-22.59 (40)	27.32 (49)	37.53 (31)	3.71	(52)	26.30	(39)	21.94	(39)	13.76	(22)	3.17	(58)	19.15	(39)	19.27	(65)
Difference	0.04	-0.01	0.03	-0.01		N/A		N/A		N/A		N/A		N/A		N/A	
IM U.S. Large Cap Growth Equity (SA+CF) Median	-25.12	27.23	33.78	3.80		24.84		21.08		11.85		3.89		18.17		20.28	
Sawgrass Large Cap Growth	N/A	N/A	N/A	N/A		21.72	(69)	14.70	(95)	7.63	(89)	4.20	(44)	18.19	(50)	18.74	(70)
Russell 1000 Growth Index	-22.59 (40)	27.32 (49)	37.53 (31)	3.71	(52)	26.30	(39)	21.94	(39)	13.76	(22)	3.17	(58)	19.15	(39)	19.27	(65)
Difference	N/A	N/A	N/A	N/A		-4.58		-7.24		-6.13		1.03		-0.96		-0.53	
IM U.S. Large Cap Growth Equity (SA+CF) Median	-25.12	27.23	33.78	3.80		24.84		21.08		11.85		3.89		18.17		20.28	
Polen Capital LCG	-34.35 (91)	30.61 (19)	35.93 (38)	N/A		N/A		N/A		N/A		N/A		N/A		N/A	
Russell 1000 Growth Index	-22.59 (40)	27.32 (49)	37.53 (31)	3.71	(52)	26.30	(39)	21.94	(39)	13.76	(22)	3.17	(58)	19.15	(39)	19.27	(65)
Difference	-11.76	3.29	-1.60	N/A		N/A		N/A		N/A		N/A		N/A		N/A	
IM U.S. Large Cap Growth Equity (SA+CF) Median	-25.12	27.23	33.78	3.80		24.84		21.08		11.85		3.89		18.17		20.28	
Lazard SMid Cap Core	N/A	N/A	N/A	N/A		13.70	(71)	20.53	(36)	10.26	(77)	4.02	(36)	11.99	(37)	31.12	(44)
Russell 2500 Index	-21.11 (69)	45.03 (42)	2.22 (53)	-4.04	(63)	16.19	(54)	17.79	(68)	14.44	(33)	0.38	(68)	8.97	(69)	29.79	(60)
Difference	N/A	N/A	N/A	N/A		-2.49		2.74		-4.18		3.64		3.02		1.33	
IM U.S. SMID Cap Core Equity (SA+CF) Median	-18.31	42.28	3.08	-2.58		16.26		19.18		12.45		2.52		11.13		30.41	
Vanguard Mid-Cap Index (VIMAX)	N/A	N/A	7.08 (10)	3.65	(33)	13.42	(24)	15.30	(46)	12.63	(44)	N/A		N/A		N/A	
CRSP U.S. Mid Cap TR Index	-19.47 (91)	36.12 (66)	7.07 (10)	3.70	(32)	13.44	(24)	15.33	(45)	12.68	(44)	1.76	(18)	15.94	(14)	28.08	(40)
Difference	N/A	N/A	0.01	-0.05		-0.02		-0.03		-0.05		N/A		N/A		N/A	
IM U.S. Mid Cap Core Equity (MF) Median	-14.07	37.86	-2.64	1.86		9.96		15.17		11.88		-1.28		12.77		27.41	
Total Int'l Equity	-27.22	20.58	14.11	-3.34		5.85		18.68		7.98		-8.63		6.07		16.67	
Harding Loevner Intl Equity (HLIZX)	-27.22 (44)	20.58 (64)	14.11 (29)	-3.34	(62)	5.85	(11)	18.65	(58)	N/A		N/A		N/A		N/A	
MSCI AC World ex USA (Net)	-25.17 (29)	23.92 (47)	3.00 (63)	-1.23	(44)	1.76	(35)	19.61	(48)	9.26	(51)	-12.16	(65)	4.77	(43)	16.48	(56)
Difference	-2.05	-3.34	11.11	-2.11		4.09		-0.96		N/A		N/A		N/A		N/A	
IM International Equity (MF) Median	-28.15	23.07	6.53	-1.89		0.18		19.37		9.31		-8.71		4.26		17.85	



Comparative Performance Total Fund Trailing Returns As of March 31, 2023

	Oct-2021 To Sep-2022	Oct-2020 To Sep-2021	Oct-2019 To Sep-2020	Oct-2 T Sep-2	0	Oct-2 To Sep-2	D	Oct-2 T Sep-2	0	Oct-2 To Sep-2	0	Oct-2 To Sep-2	0	Oct-2 T Sep-2	0	Oct-2 To Sep-2	o
Total Core Fixed Income	-17.12	-1.45	7.31	8.74		-0.67		0.82		5.78		3.88		4.40		-1.26	
Core Fixed Policy	-14.60	-0.90	6.98	10.30		-1.22		0.07		5.19		2.94		3.96		-1.68	
Difference	-2.52	-0.55	0.33	-1.56		0.55		0.75		0.59		0.94		0.44		0.42	
Garcia Hamilton Fixed Income	N/A	-7.33 (100)	7.31 (58)	8.74	(95)	N/A		N/A		N/A		N/A		N/A		N/A	
Blmbg. U.S. Aggregate Index	-14.60 (61)	-0.90 (84)	6.98 (77)	10.30	(69)	-1.22	(88)	0.07	(84)	5.19	(80)	2.94	(62)	3.96	(80)	-1.68	(78)
Difference	N/A	-6.43	0.33	-1.56		N/A		N/A		N/A		N/A		N/A		N/A	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	-14.51	-0.04	7.54	10.42		-0.74		0.62		5.66		3.02		4.43		-1.28	
Iutual of America Core Fixed	N/A	N/A	N/A	N/A		N/A		0.82	(39)	5.78	(43)	3.88	(7)	4.43	(51)	-1.01	(37)
Blmbg. U.S. Aggregate Index	-14.60 (61)	-0.90 (84)	6.98 (77)	10.30	(69)	-1.22	(88)	0.07	(84)	5.19	(80)	2.94	(62)	3.96	(80)	-1.68	(78)
Difference	N/A	N/A	N/A	N/A		N/A		0.75		0.59		0.94		0.47		0.67	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	-14.51	-0.04	7.54	10.42		-0.74		0.62		5.66		3.02		4.43		-1.28	
Baird Aggregate Bond Fund (BAGIX)	-15.26 (66)	N/A	N/A	N/A		N/A		N/A		N/A		N/A		N/A		N/A	
Blmbg. U.S. Aggregate Index	-14.60 (38)	-0.90 (93)	6.98 (70)	10.30	(63)	-1.22	(83)	0.07	(90)	5.19	(84)	2.94	(32)	3.96	(84)	-1.68	(83)
Difference	-0.66	N/A	N/A	N/A		N/A		N/A		N/A		N/A		N/A		N/A	
IM U.S. Broad Market Core Fixed Income (MF) Median	-14.79	0.82	7.63	10.46		-0.70		1.17		5.94		2.73		5.10		-0.86	
Western Assets Core Bond (WACSX)	-18.76 (100)	N/A	N/A	N/A		N/A		N/A		N/A		N/A		N/A		N/A	
Blmbg. U.S. Aggregate Index	-14.60 (38)	-0.90 (93)	6.98 (70)	10.30	(63)	-1.22	(83)	0.07	(90)	5.19	(84)	2.94	(32)	3.96	(84)	-1.68	(83)
Difference	-4.16	N/A	N/A	N/A		N/A		N/A		N/A		N/A		N/A		N/A	
IM U.S. Broad Market Core Fixed Income (MF) Median	-14.79	0.82	7.63	10.46		-0.70		1.17		5.94		2.73		5.10		-0.86	
Total Non-Core Fixed Income	-10.49	6.87	-2.18	5.13		4.97		11.18		6.07		-2.56		9.33		11.74	
Bloomberg Global Aggregate	-20.43	-0.91	6.24	7.60		-1.31		-1.26		8.83		-3.26		1.19		-2.64	
Difference	9.94	7.78	-8.42	-2.47		6.28		12.44		-2.76		0.70		8.14		14.38	
Templeton Global Total Return (FTTRX)	N/A	N/A	-4.29 (100)	2.50	(99)	-1.90	(64)	13.82	(1)	2.64	(95)	-8.23	(95)	5.71	(22)	5.29	• •
Blmbg. Global Multiverse	-20.34 (63)	-0.45 (79)	5.99 (33)	7.54	(51)	-1.32	(50)		(78)	9.23	(25)	-3.56	(42)	1.40	(79)	-2.22	(57)
Difference	N/A	N/A	-10.28	-5.04		-0.58		14.38		-6.59		-4.67		4.31		7.51	
IM Global Fixed Income (MF) Median	-17.63	0.89	5.39	7.65		-1.33		1.10		7.40		-3.88		3.35		-1.81	
PIMCO Diversified Income Fund (PDIIX)	-17.58 (50)	4.82 (6)	N/A	N/A		N/A		N/A		N/A		N/A		N/A		N/A	
Blmbg. Global Credit (Hedged)	-16.53 (49)	2.72 (22)	5.26 (53)	10.83	(12)	0.39	(16)	3.04	(29)	9.19	(25)	0.86	(19)	6.83	(10)	1.46	(9)
Difference	-1.05	2.10	N/A	N/A		N/A		N/A		N/A		N/A		N/A		N/A	
IM Global Fixed Income (MF) Median	-17.63	0.89	5.39	7.65		-1.33		1.10		7.40		-3.88		3.35		-1.81	
Total Real Estate	20.87	10.61	-2.00	5.87		10.10		9.82		9.06		14.70		12.33		8.10	
ARA Core Property	25.79 (20)	13.51 (74)	1.62 (50)	6.81	(49)	8.50	(63)	7.52	(55)	9.04	(89)	13.98	(60)	12.49	(67)	12.27	(69)
NCREIF ODCE	22.76 (41)	15.75 (52)	1.74 (44)	6.17	(69)	8.82	(58)	7.81	(51)	10.62	(68)	14.71	(56)	12.39	(69)	12.47	(66)
Difference	3.03	-2.24	-0.12	0.64		-0.32		-0.29		-1.58		-0.73		0.10		-0.20	
IM U.S. Open End Private Real Estate (SA+CF) Median	20.46	15.91	1.62	6.80		8.98		7.83		11.18		15.20		12.90		13.22	



# Comparative Performance Total Fund Trailing Returns As of March 31, 2023

To Sep-2022         To Sep-2021         To Sep-2020         To Sep-2019         To Sep-2018         To Sep-2017         To Sep-2016         To Sep-2017         To Sep-2017         To Sep-2016         To Sep-2016         To Sep-2016         To Sep-2016         To Sep-2017         To Sep-2016         Sep-2016         Sep-2016																	
Amsouth Timber Fund       N/A       N/A       N/A       N/A       N/A       N/A       N/A       -15.26       -0.52       6.12       11.73       7.98         NCREIF Timberland Index       12.54       5.01       0.19       2.10       4.00       3.28       3.28       9.26       10.38         Difference       N/A       N/A       N/A       N/A       N/A       N/A       -19.26       -3.80       2.84       2.47       -2.40         Molpus Woodlands Timber       -43.56       -8.13       -4.04       5.90       -2.66       1.18       6.08       1.64       10.96         NCREIF Timberland Index       12.54       5.01       0.19       2.10       4.00       3.28       3.28       9.26       10.38         Difference       -56.10       -13.14       -4.23       3.80       -6.66       -2.10       2.80       -7.62       0.58         Alternatives       Use       U	То	Oct-2013 To Sep-2014	То	Тс	0	Т	0	Т	0	Т	0	т	То	То	То		
NCREIF Timberland Index       12.54       5.01       0.19       2.10       4.00       3.28       3.28       9.26       10.38         Difference       N/A       N/A       N/A       N/A       N/A       N/A       -19.26       -3.80       2.84       2.47       -2.40         Molpus Woodlands Timber       -43.56       -8.13       -4.04       5.90       -2.66       1.18       6.08       1.64       10.96         NCREIF Timberland Index       12.54       5.01       0.19       2.10       4.00       3.28       3.28       9.26       10.38         Difference       -56.10       -13.14       -4.23       3.80       -6.66       -2.10       2.80       -7.62       0.58         Alternatives       V/A       N/A       N/A       N/A       A.94       (35)       8.14       (64)       9.20       (41)       -3.83       (45)       N/A         Alternatives Policy       -14.75       (50)       13.80       (68)       11.70       13       7.72       (15)       8.07       (19)       9.04       (54)       10.41       (25)       1.09       (12)       7.56       (14)         Difference       N/A       N/A       N/A	4.51	9.49	)	6.70		6.48		0.28		-9.38		5.58	-4.04	-8.13	3.56	-43.8	Total Timber
Difference       N/A       N/A       N/A       N/A       -19.26       -3.80       2.84       2.47       -2.40         Molpus Woodlands Timber       -43.56       -8.13       -4.04       5.90       -2.66       1.18       6.08       1.64       10.96         NCREIF Timberland Index       12.54       5.01       0.19       2.10       4.00       3.28       3.28       9.26       10.38         Difference       -56.10       -13.14       -4.23       3.80       -6.66       -2.10       2.80       -7.62       0.58         Alternatives       V/A       N/A       N/A       N/A       N/A       4.94       (35)       8.14       (64)       9.20       (41)       -3.83       (45)       N/A         Alternatives Policy       -14.75       (50)       13.80       (68)       11.70       13       7.72       (15)       8.07       (19)       9.04       (54)       10.41       (25)       1.09       (12)       7.56       (13)         Difference       N/A       N/A       N/A       N/A       N/A       -3.13       -0.90       -1.21       4.92       N/A	3.85	7.98	3	11.73		6.12		-0.52		-15.26		N/A	N/A	N/A	N/A	N	Amsouth Timber Fund
Molpus Woodlands Timber       -43.56       -8.13       -4.04       5.90       -2.66       1.18       6.08       1.64       10.96         NCREIF Timberland Index       12.54       5.01       0.19       2.10       4.00       3.28       3.28       9.26       10.38         Difference       -56.10       -13.14       -4.23       3.80       -6.66       -2.10       2.80       -7.62       0.58         Alternatives       Vestwood Income Opportunity Fund (WHGIX)       N/A       N/A       N/A       N/A       4.94       (35)       8.14       (64)       9.20       (41)       -3.83       (45)       N/A         Alternatives Policy       -14.75       (50)       13.80       (68)       11.70       (13)       7.72       (15)       8.07       (19)       9.04       (54)       10.41       (25)       1.09       (12)       7.56       (41)         Difference       N/A       N/A       N/A       N/A       -3.13       -0.90       -1.21       -4.92       N/A	9.68	10.38	3	9.26		3.28		3.28		4.00		2.10	0.19	5.01	2.54	12.5	NCREIF Timberland Index
NCREIF Timberland Index       12.54       5.01       0.19       2.10       4.00       3.28       3.28       9.26       10.38         Difference       -56.10       -13.14       -4.23       3.80       -6.66       -2.10       2.80       -7.62       0.58         Alternatives	-5.83	-2.40	·	2.47		2.84		-3.80		-19.26		N/A	N/A	N/A	N/A	N.	Difference
Difference       -56.10       -13.14       -4.23       3.80       -6.66       -2.10       2.80       -7.62       0.58         Alternatives       Westwood Income Opportunity Fund (WHGIX)       N/A       N/A       N/A       N/A       4.94       (35)       8.14       (64)       9.20       (41)       -3.83       (45)       N/A         Alternatives Policy       -14.75       (50)       13.80       (68)       11.70       (13)       7.72       (15)       8.07       (19)       9.04       (54)       10.41       (25)       1.09       (12)       7.56       (41)         Difference       N/A       N/A       N/A       N/A       -3.13       -0.90       -1.21       -4.92       N/A	5.25	10.96	ł	1.64		6.08		1.18		-2.66		5.90	-4.04	-8.13	3.56	-43.9	Molpus Woodlands Timber
Alternatives         Westwood Income Opportunity Fund (WHGIX)       N/A       N/A       N/A       N/A       4.94       (35)       8.14       (64)       9.20       (41)       -3.83       (45)       N/A         Alternatives Policy       -14.75       (50)       13.80       (68)       11.70       (13)       7.72       (15)       8.07       (19)       9.04       (54)       10.41       (25)       1.09       (12)       7.56       (41)         Difference       N/A       N/A       N/A       N/A       -3.13       -0.90       -1.21       -4.92       N/A	9.68	10.38	3	9.26		3.28		3.28		4.00		2.10	0.19	5.01	2.54	12.5	NCREIF Timberland Index
Westwood Income Opportunity Fund (WHGIX)         N/A         N/A         N/A         N/A         4.94         (35)         8.14         (64)         9.20         (41)         -3.83         (45)         N/A           Alternatives Policy         -14.75         (50)         13.80         (68)         11.70         (13)         7.72         (15)         8.07         (19)         9.04         (54)         10.41         (25)         1.09         (12)         7.56         (41)           Difference         N/A         N/A         N/A         N/A         -3.13         -0.90         -1.21         -4.92         N/A	-4.43	0.58	2	-7.62		2.80		-2.10		-6.66		3.80	-4.23	-13.14	3.10	-56.7	Difference
Alternatives Policy         -14.75 (50)         13.80 (68)         11.70 (13)         7.72 (15)         8.07 (19)         9.04 (54)         10.41 (25)         1.09 (12)         7.56 (50)           Difference         N/A         N/A         N/A         N/A         -4.92         N/A																	Alternatives
Difference N/A N/A N/A N/A -3.13 -0.90 -1.21 -4.92 N/A	N/A	N/A	3 (45)	-3.83	(41)	9.20	(64)	8.14	(35)	4.94		N/A	N/A	N/A	N/A	/ Fund (WHGIX) N	Westwood Income Opportunity Fund (
	7) -3.91 (95)	7.56 (57)	) (12)	1.09	(25)	10.41	(54)	9.04	(19)	8.07	(15)	7.72	11.70 (13)	13.80 (68)	4.75 (50)	-14.7	Alternatives Policy
IM Flexible Portfolio (MF) Median         -14.79         16.31         2.56         2.63         3.45         9.51         8.68         -4.37         8.19	N/A	N/A	2	-4.92		-1.21		-0.90		-3.13		N/A	N/A	N/A	N/A	N	Difference
	8.68	8.19	,	-4.37		8.68		9.51		3.45		2.63	2.56	16.31	1.79	edian -14.7	IM Flexible Portfolio (MF) Median

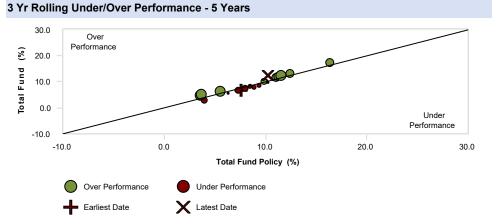


## Performance Review Total Fund As of March 31, 2023

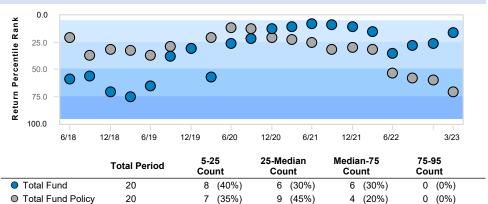




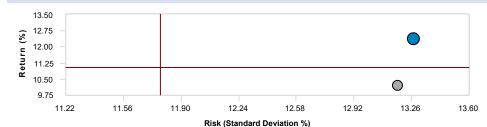
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#### 3 Yr Rolling Percentile Ranking - 5 Years



#### Peer Group Scattergram - 3 Years

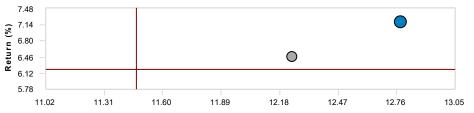


100.00

100.00

## Peer Group Scattergram - 5 Years

N/A



Risk (Standard Deviation %)

0.46

	Return	Standard Deviation		Return	Standard Deviation
Total Fund	12.41	13.27	Total Fund	7.21	12.78
Total Fund Policy	10.21	13.18	Total Fund Policy	6.48	12.24
Median	11.03	11.78	Median	6.19	11.47

#### **Historical Statistics - 3 Years**

0.00

Total Fund	Tracking Error 1.99	Up Market Capture 106.24	Down Market Capture 96.90	Alpha	Information Ratio	Sharpe Ratio	<b>Beta</b>	Downside Risk 7.84
Total Fund Policy	0.00	100.00	100.00	0.00	N/A	0.74	1.00	8.19
Historical Statistic	s - 5 Years							
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Fund	1.92	105.76	103.18	0.53	0.40	0.50	1.03	8.63

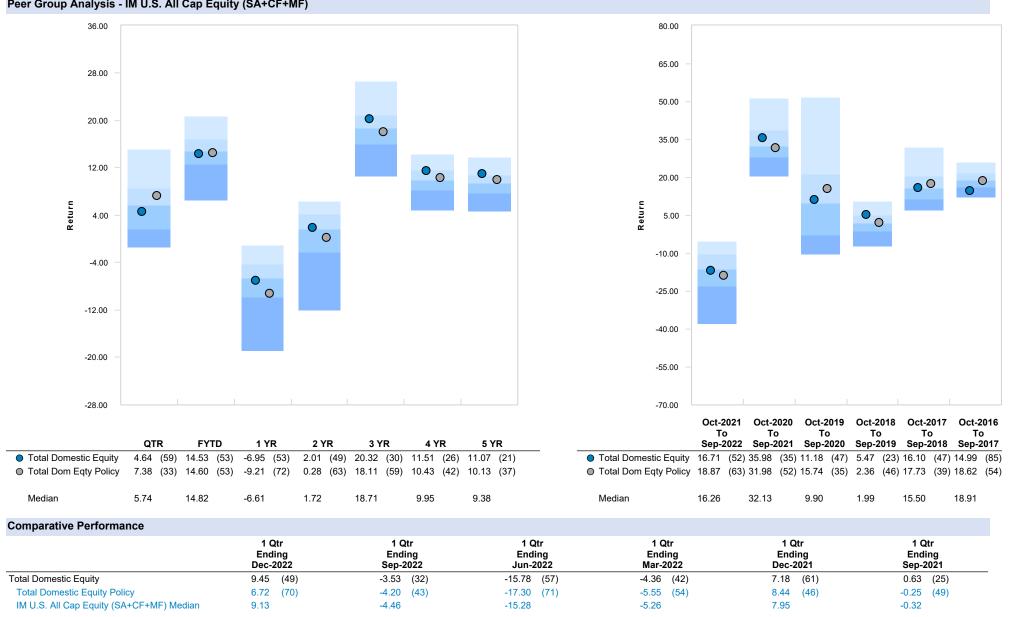
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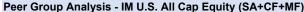


8.27

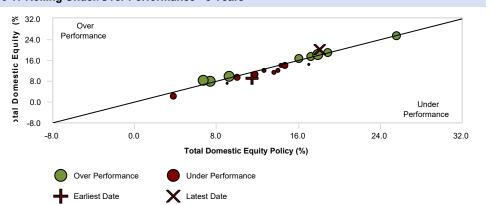
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**Total Fund Policy** 



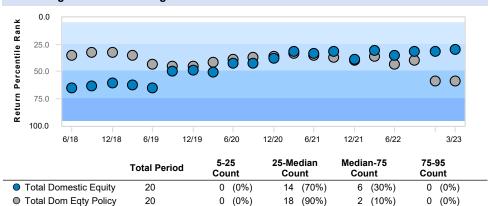




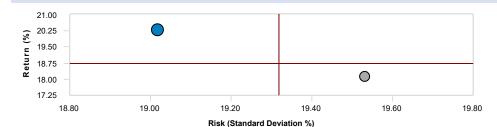


#### 3 Yr Rolling Under/Over Performance - 5 Years

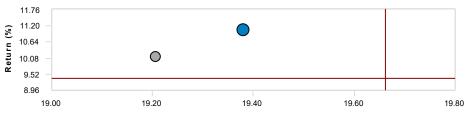
3 Yr Rolling Percentile Ranking - 5 Years



Poor Group	Scattergram	2 Voare
Peer Group	Scatteruram	- S rears



## Peer Group Scattergram - 5 Years



Risk (Standard Deviation %)

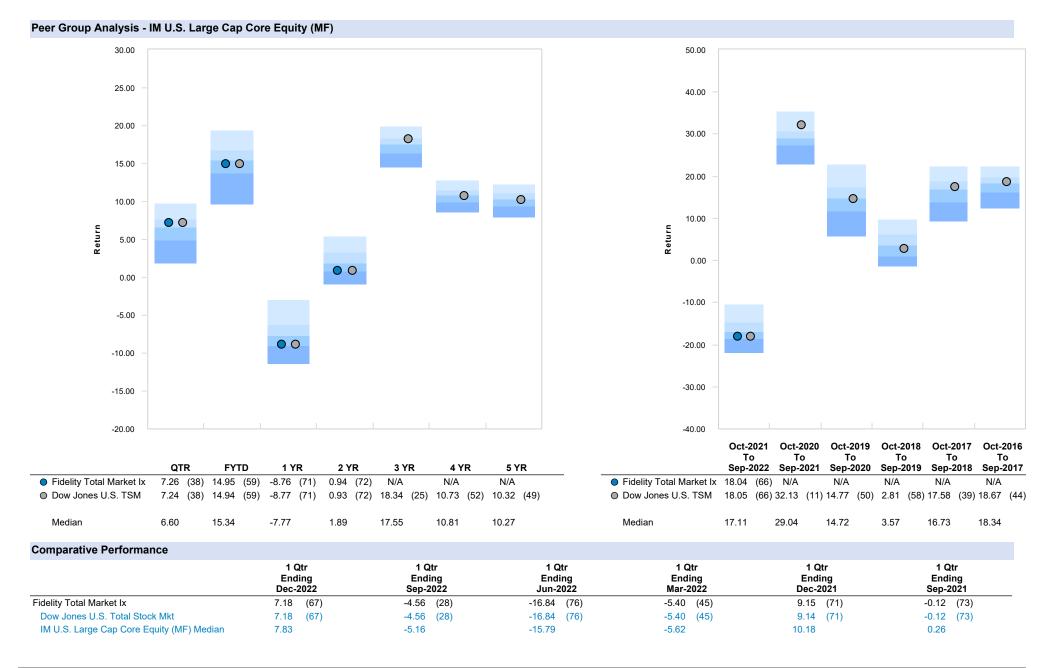
	Return	Standard Deviation		Return	Standard Deviation
Total Domestic Equity	20.32	19.02	Total Domestic Equity	11.07	19.38
Total Dom Eqty Policy	18.11	19.53	Total Dom Eqty Policy	10.13	19.21
Median	18.71	19.32	Median	9.38	19.66

#### **Historical Statistics - 3 Years**

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Domestic Equity	2.97	99.47	90.06	2.50	0.60	1.02	0.96	10.52
Total Dom Eqty Policy	0.00	100.00	100.00	0.00	N/A	0.91	1.00	11.28
Historical Statistics -	5 Years							
	<b>T</b>	Up	Down		1. <b>1</b>	0		

	Tracking Error	Market Capture	Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Domestic Equity	2.77	100.65	96.79	0.92	0.33	0.57	1.00	13.08
Total Dom Eqty Policy	0.00	100.00	100.00	0.00	N/A	0.53	1.00	12.87

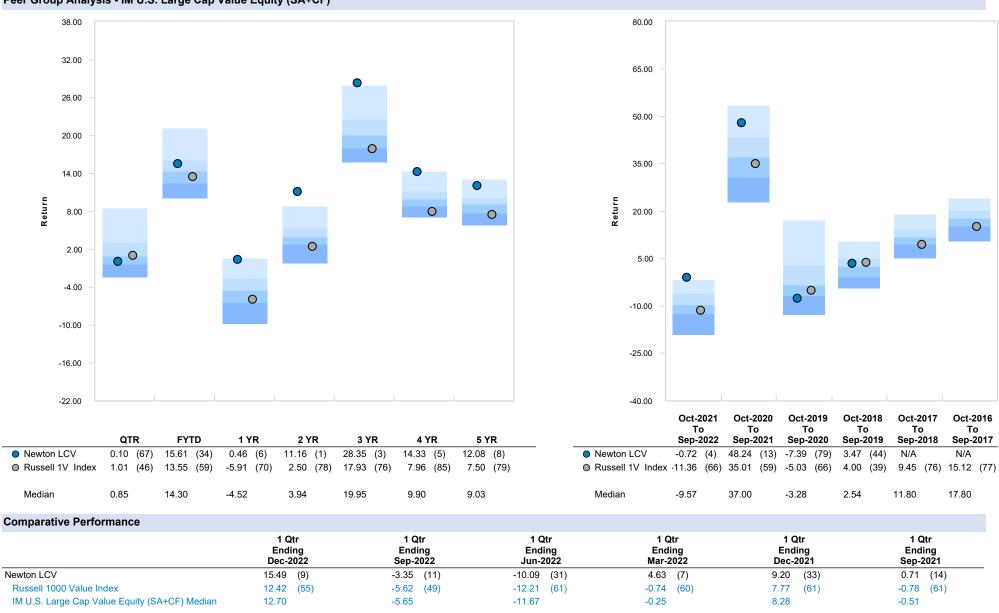






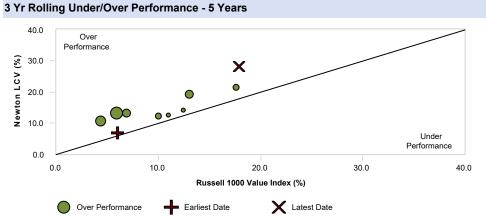
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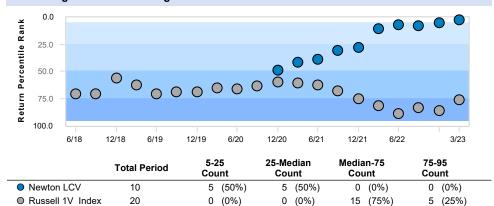




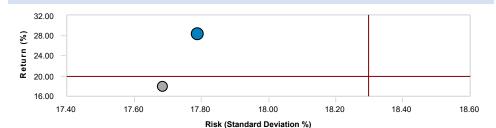




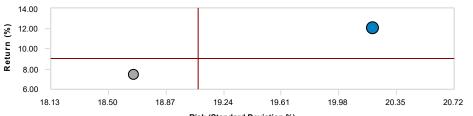




### Peer Group Scattergram - 3 Years



# Peer Group Scattergram - 5 Years



Risk (Standard Deviation %)

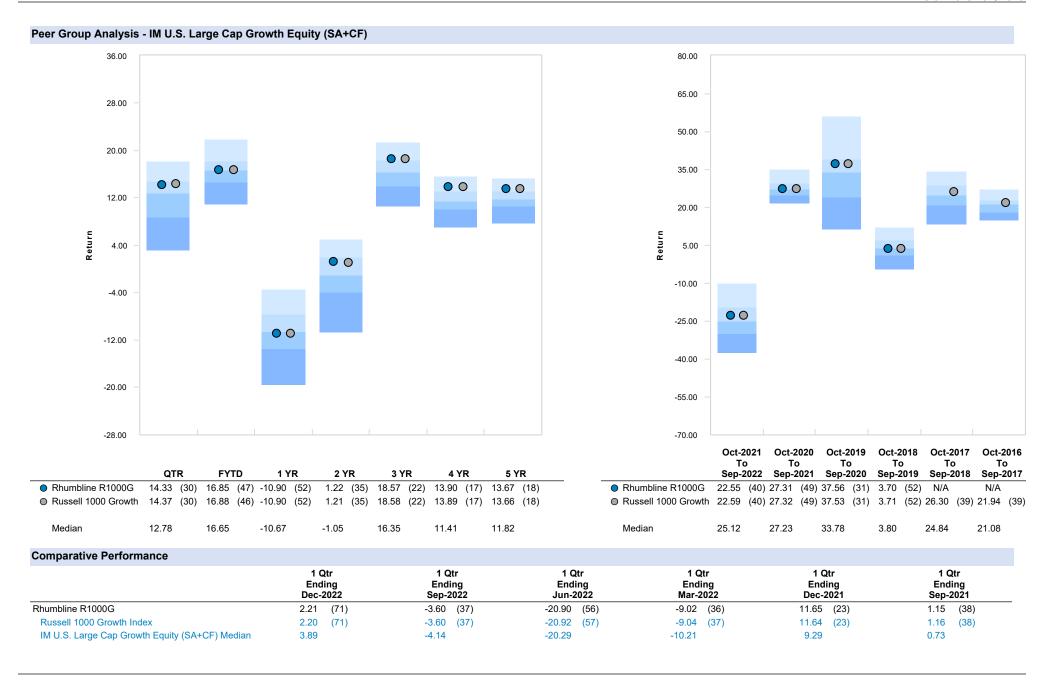
	Return	Standard Deviation		Return	Standard Deviation
Newton LCV	28.35	17.79	Newton LCV	12.08	20.19
Russell 1V Index	17.93	17.68	Russell 1V Index	7.50	18.66
Median	19.95	18.30	Median	9.03	19.08

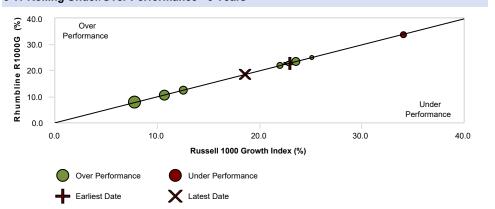
### **Historical Statistics - 3 Years**

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Newton LCV	3.32	110.62	71.37	9.19	2.60	1.45	0.99	8.21
Russell 1V Index	0.00	100.00	100.00	0.00	N/A	0.97	1.00	9.39
<b>Historical Statistic</b>	s - 5 Years							

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Newton LCV	3.80	111.27	94.43	4.01	1.19	0.60	1.06	13.76
Russell 1V Index	0.00	100.00	100.00	0.00	N/A	0.41	1.00	12.84

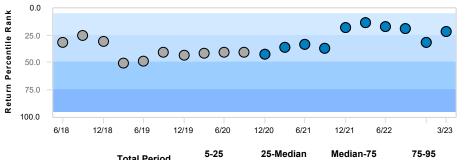






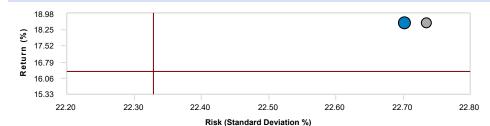
# 3 Yr Rolling Under/Over Performance - 5 Years

3 Yr Rolling Percentile Ranking - 5 Years

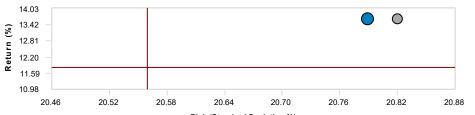


	Total Period	Count	Count	Count	Count	
Rhumbline R1000G	10	5 (50%)	5 (50%)	0 (0%)	0 (0%)	
Russell 1000 Growth	20	6 (30%)	13 (65%)	1 (5%)	0 (0%)	

### Peer Group Scattergram - 3 Years



### Peer Group Scattergram - 5 Years



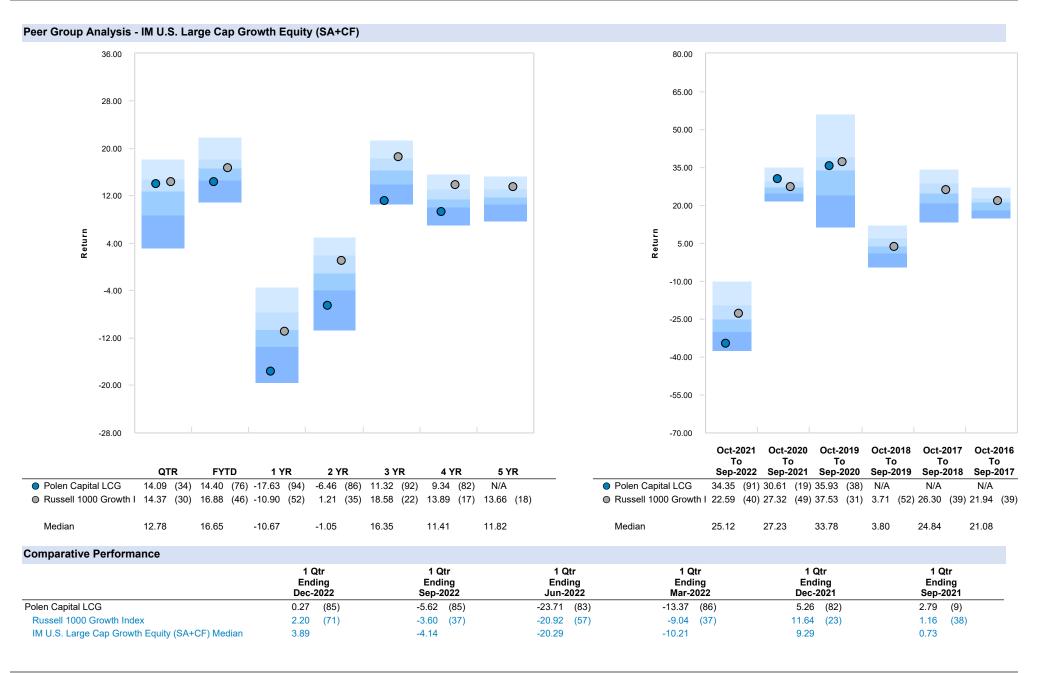
Risk (Standard Deviation %)

	Return	Standard Deviation		Return	Standard Deviation
Rhumbline R1000G	18.57	22.70	Rhumbline R1000G	13.67	20.79
Russell 1000 Growth	18.58	22.73	Russell 1000 Growth	13.66	20.82
Median	16.35	22.33	Median	11.82	20.56

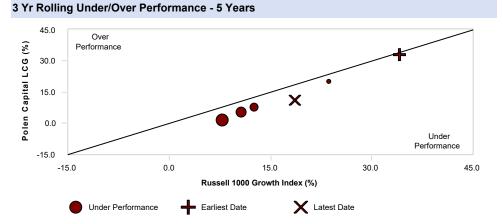
### **Historical Statistics - 3 Years**

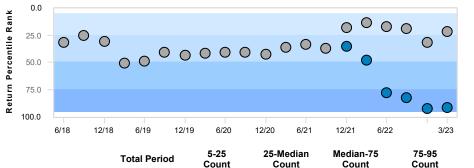
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Rhumbline R1000G	0.04	99.89	99.85	0.02	-0.30	0.83	1.00	13.51
Russell 1000 Growth	0.00	100.00	100.00	0.00	N/A	0.83	1.00	13.53
Historical Statistics -	5 Years							
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Rhumbline R1000G	0.04	99.90	99.83	0.02	0.01	0.65	1.00	13.30
Russell 1000 Growth	0.00	100.00	100.00	0.00	N/A	0.65	1.00	13.32











	Total Fellou	Count	Count	Count	Count	
Polen Capital LCG	6	0 (0%)	2 (33%)	0 (0%)	4 (67%)	
Russell 1000 Growth I	20	6 (30%)	13 (65%)	1 (5%)	0 (0%)	

### Peer Group Scattergram - 3 Years



## Peer Group Scattergram - 5 Years



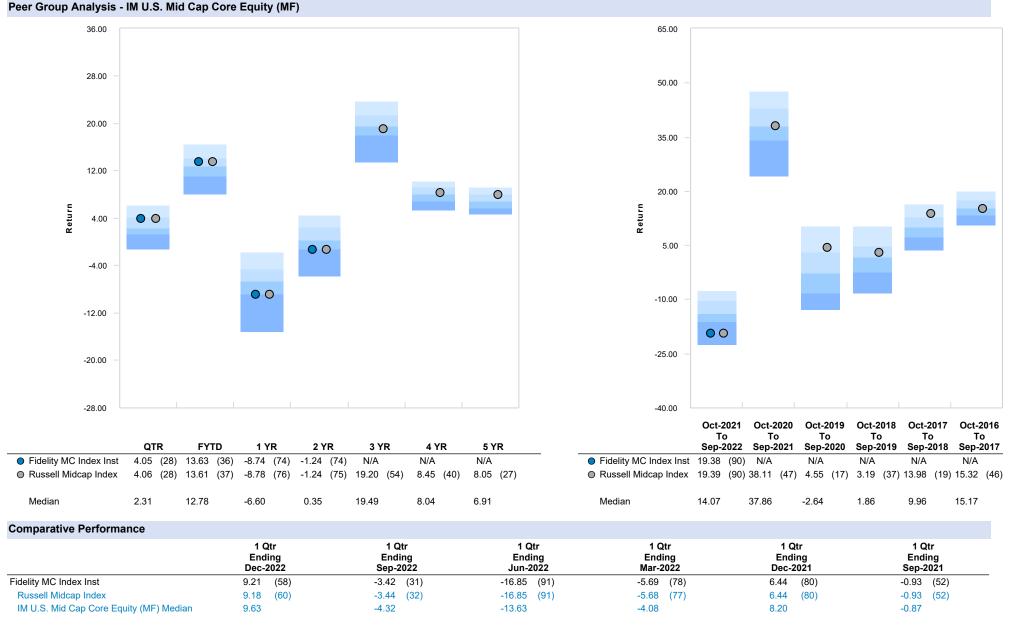
Risk (Standard Deviation %)

	Return	Standard Deviation		Return	Standard Deviation
Polen Capital LCG	11.32	23.71	Polen Capital LCG	N/A	N/A
Russell 1000 Growth I	18.58	22.73	Russell 1000 Growth I	13.66	20.82
Median	16.35	22.33	Median	11.82	20.56

### **Historical Statistics - 3 Years**

Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
5.72	91.24	109.09	-6.20	-1.07	0.54	1.01	15.13
0.00	100.00	100.00	0.00	N/A	0.83	1.00	13.53
5 Years							
Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
0.00	100.00	100.00	0.00	N/A	0.65	1.00	13.32
	Error 5.72 0.00 5 Years Tracking Error N/A	Fracking ErrorMarket Capture5.7291.240.00100.005 YearsUp Market CaptureN/AN/A	Fracking ErrorMarket CaptureMarket Capture5.7291.24109.090.00100.00100.005 YearsTracking ErrorUp Market CaptureDown Market CaptureN/AN/AN/A	Fracking ErrorMarket CaptureMarket CaptureAlpha5.7291.24109.09-6.200.00100.00100.000.005 YearsTracking ErrorUp Market CaptureN/AN/AN/AN/A	Fracking ErrorMarket CaptureMarket CaptureAlphaInformation Ratio5.7291.24109.09-6.20-1.070.00100.00100.000.00N/A5 YearsTracking ErrorUp Market CaptureDown Market CaptureAlphaInformation RatioN/AN/AN/AN/A	Fracking ErrorMarket CaptureMarket CaptureAlphaInformation RatioSharpe Ratio5.7291.24109.09-6.20-1.070.540.00100.000.00N/A0.835 YearsTracking ErrorUp Market CaptureDown Market CaptureAlphaInformation RatioSharpe RatioN/AN/AN/AN/AN/AN/A	Fracking ErrorMarket CaptureMarket CaptureAlphaInformation RatioSharpe RatioBeta5.7291.24109.09-6.20-1.070.541.010.00100.000.00N/A0.831.005 YearsTracking ErrorUp Market CaptureDown Market CaptureAlphaInformation RatioSharpe RatioBetaN/AN/AN/AN/AN/AN/AN/A

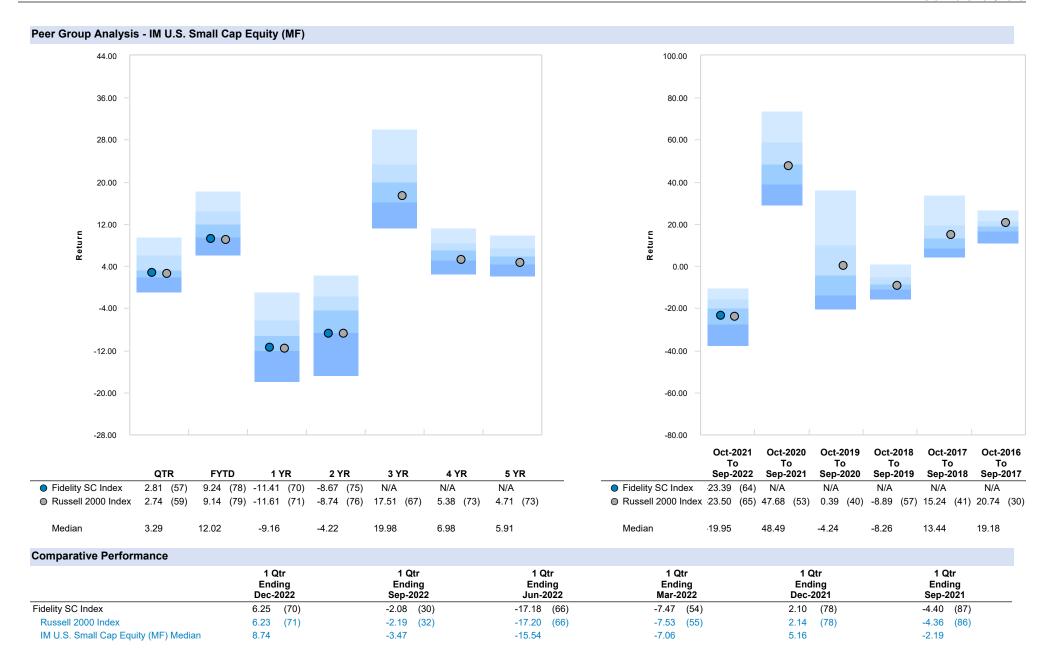






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# **Performance Review** Mass Mutual SC As of March 31, 2023

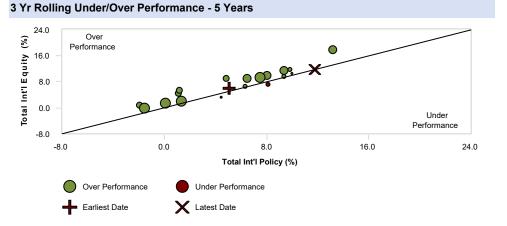


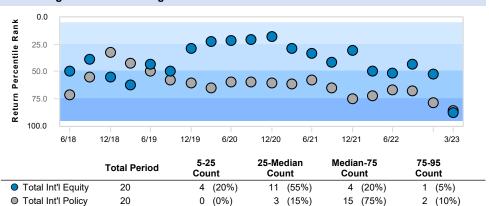




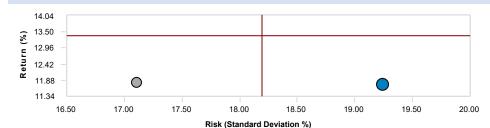








# Peer Group Scattergram - 3 Years



# Peer Group Scattergram - 5 Years



Risk (Standard Deviation %)

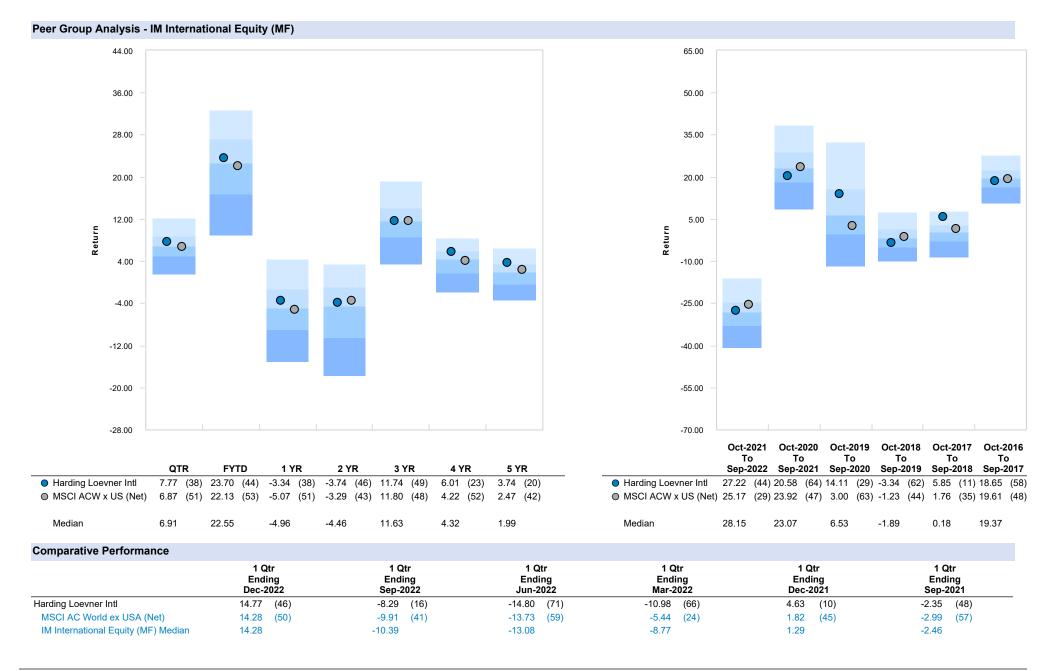
	Return	Standard Deviation		Return	Standard Deviation
Total Int'l Equity	11.74	19.24	Total Int'l Equity	3.74	18.26
Total Int'l Policy	11.80	17.11	Total Int'l Policy	2.47	17.22
Median	13.39	18.20	Median	3.84	17.92

### **Historical Statistics - 3 Years**

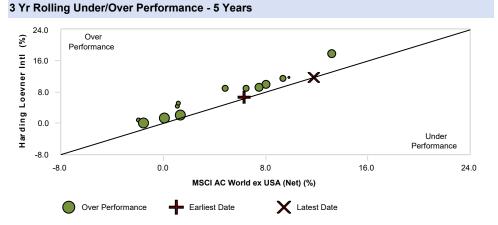
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Int'l Equity	6.17	107.94	111.89	-0.54	0.05	0.63	1.07	10.97
Total Int'l Policy	0.00	100.00	100.00	0.00	N/A	0.69	1.00	9.97
Historical Statistic	cs - 5 Years							
	Treaking	Up	Down		Information	Charma		Downoido

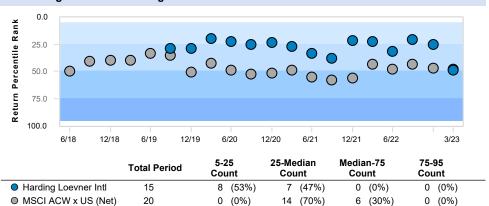
	Error	Market Capture	Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Int'l Equity	5.30	106.85	101.55	1.35	0.26	0.22	1.01	11.99
Total Int'l Policy	0.00	100.00	100.00	0.00	N/A	0.15	1.00	11.98







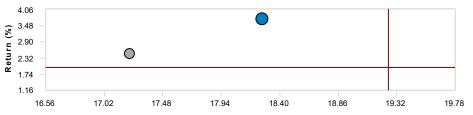




#### Peer Group Scattergram - 3 Years



### Peer Group Scattergram - 5 Years



Risk (Standard Deviation %)

	Return	Standard Deviation		Return	Standard Deviation
Harding Loevner Intl	11.74	19.24	Harding Loevner Intl	3.74	18.26
MSCI ACW x US (Net)	11.80	17.11	MSCI ACW x US (Net)	2.47	17.22
Median	11.63	19.28	Median	1.99	19.26

### **Historical Statistics - 3 Years**

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Harding Loevner Intl	6.17	107.94	111.89	-0.54	0.05	0.63	1.07	10.97
MSCI ACW x US (Net)	0.00	100.00	100.00	0.00	N/A	0.69	1.00	9.97

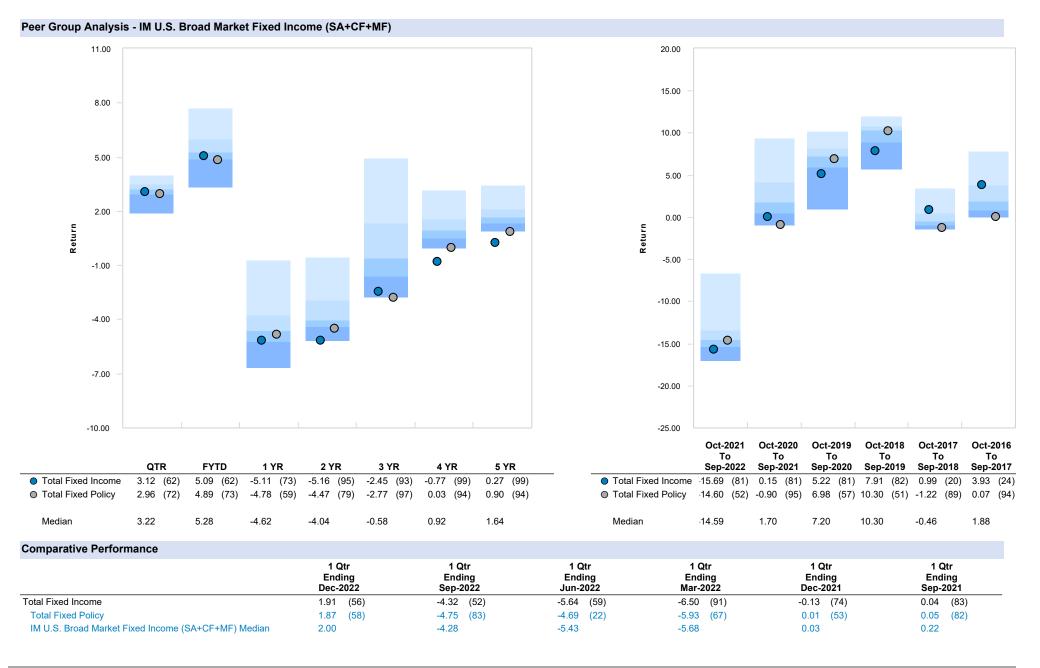
### **Historical Statistics - 5 Years**

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Harding Loevner Intl	5.30	106.85	101.55	1.34	0.26	0.22	1.01	11.99
MSCI ACW x US (Net)	0.00	100.00	100.00	0.00	N/A	0.15	1.00	11.98

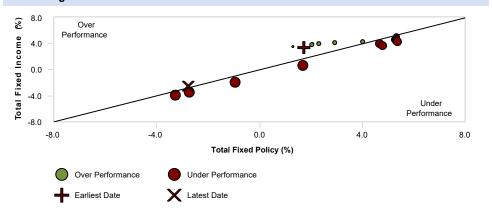


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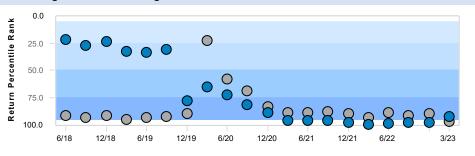






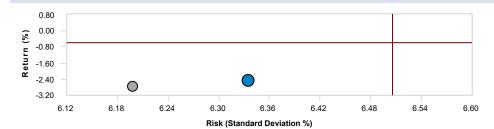
# 3 Yr Rolling Under/Over Performance - 5 Years

3 Yr Rolling Percentile Ranking - 5 Years



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Total Fixed Income	20	2 (10%)	4 (20%)	2 (10%)	12 (60%)
Total Fixed Policy	20	1 (5%)	0 (0%)	2 (10%)	17 (85%)

### Peer Group Scattergram - 3 Years

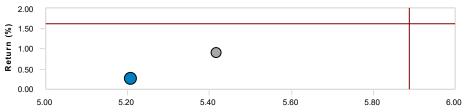


100.00

100.00

## Peer Group Scattergram - 5 Years

N/A



Risk (Standard Deviation %)

-0.07

	Return	Standard Deviation		Return	Standard Deviation
Total Fixed Income	-2.45	6.33	Total Fixed Income	0.27	5.21
Total Fixed Policy	-2.77	6.20	Total Fixed Policy	0.90	5.42
Median	-0.58	6.51	Median	1.64	5.89

### **Historical Statistics - 3 Years**

0.00

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Fixed Income	1.13	100.67	96.93	0.36	0.31	-0.50	1.01	4.95
Total Fixed Policy	0.00	100.00	100.00	0.00	N/A	-0.57	1.00	4.88
Historical Statistics	- 5 Years							
	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Total Fixed Income	1.68	83.06	90.22	-0.55	-0.38	-0.19	0.91	3.93

0.00



3.84

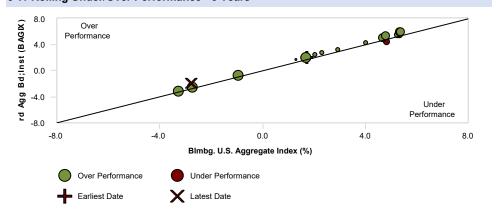
1.00

**Total Fixed Policy** 



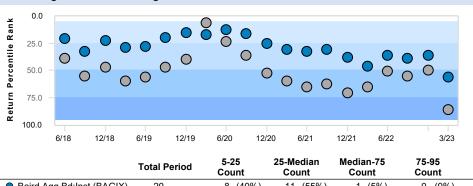


# Performance Review Baird Agg Bd;Inst (BAGIX)- MGR As of March 31, 2023



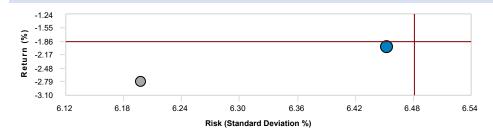
# 3 Yr Rolling Under/Over Performance - 5 Years

3 Yr Rolling Percentile Ranking - 5 Years

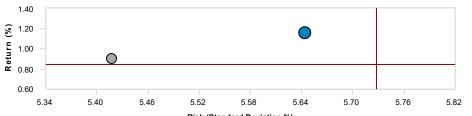


		oount	eeune	oount	oount
<ul> <li>Baird Agg Bd;Inst (BAGIX)</li> </ul>	20	8 (40%)	11 (55%)	1 (5%)	0 (0%)
Blmbg. U.S. Agg Index	20	2 (10%)	6 (30%)	11 (55%)	1 (5%)

### Peer Group Scattergram - 3 Years



# Peer Group Scattergram - 5 Years



Risk (Standard Deviation %)

	Return	Standard Deviation		Return	Standard Deviation
Baird Agg Bd;Inst (BAGIX)	-1.98	6.45	Baird Agg Bd;Inst (BAGIX)	1.16	5.64
Blmbg. U.S. Agg Index	-2.77	6.20	BImbg. U.S. Agg Index	0.90	5.42
Median	-1.85	6.48	Median	0.85	5.73

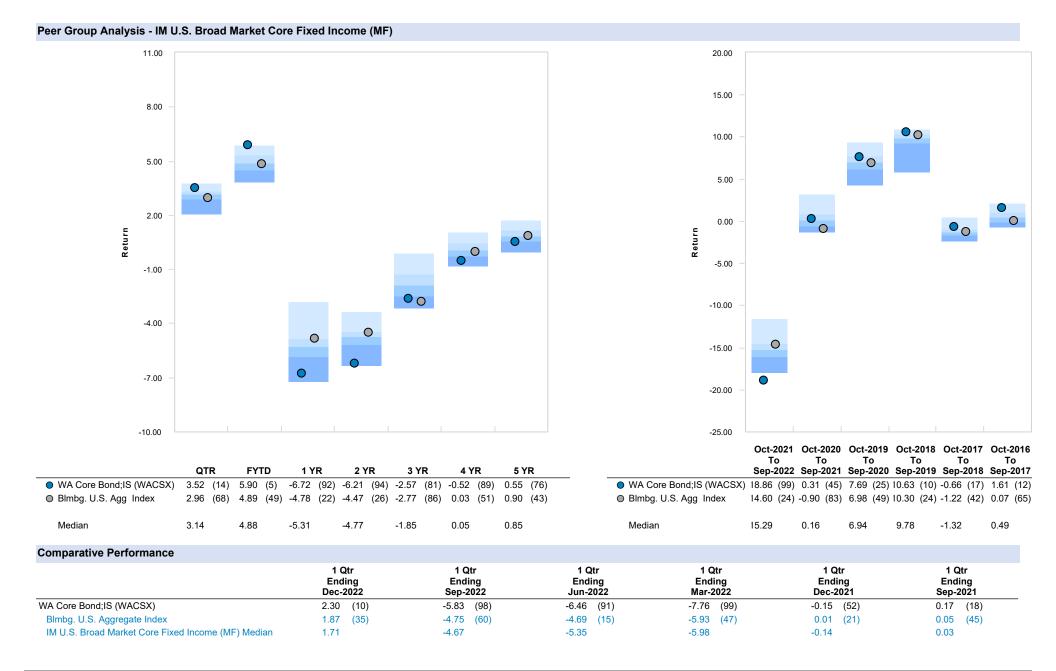
### **Historical Statistics - 3 Years**

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Baird Agg Bd;Inst (BAGIX)	0.77	111.67	99.93	0.92	1.07	-0.42	1.03	4.90
Blmbg. U.S. Agg Index	0.00	100.00	100.00	0.00	N/A	-0.57	1.00	4.88

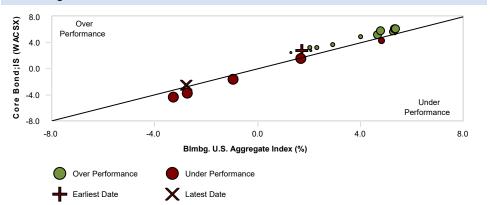
### **Historical Statistics - 5 Years**

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
Baird Agg Bd;Inst (BAGIX)	0.94	106.71	103.69	0.24	0.28	-0.01	1.03	3.96
Blmbg. U.S. Agg Index	0.00	100.00	100.00	0.00	N/A	-0.07	1.00	3.84



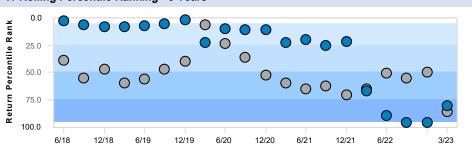






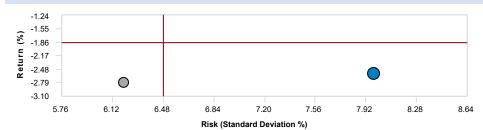
# 3 Yr Rolling Under/Over Performance - 5 Years

3 Yr Rolling Percentile Ranking - 5 Years

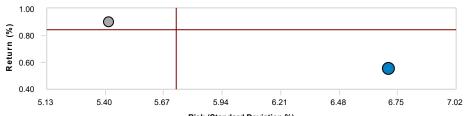


	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
• WA Core Bond;IS (WACSX)	20	15 (75%)	0 (0%)	1 (5%)	4 (20%)
Blmbg. U.S. Agg Index	20	2 (10%)	6 (30%)	11 (55%)	1 (5%)

Peer Group Scattergram - 3 Years



## Peer Group Scattergram - 5 Years



Risk (Standard Deviation %)

	Return	Standard Deviation		Return	Standard Deviation
WA Core Bond; IS (WACSX)	-2.57	7.98	WA Core Bond; IS (WACSX)	0.55	6.71
Blmbg. U.S. Agg Index	-2.77	6.20	Blmbg. U.S. Agg Index	0.90	5.42
Median	-1.85	6.48	Median	0.85	5.73

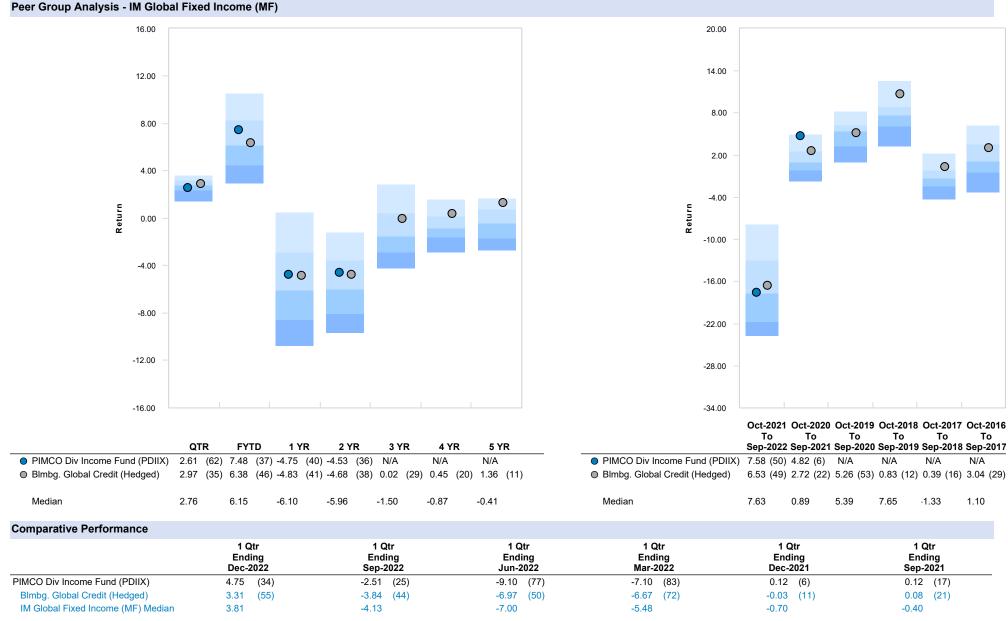
**Historical Statistics - 3 Years** 

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
WA Core Bond; IS (WACSX)	2.10	136.96	123.48	1.05	0.16	-0.40	1.27	6.07
Blmbg. U.S. Agg Index	0.00	100.00	100.00	0.00	N/A	-0.57	1.00	4.88

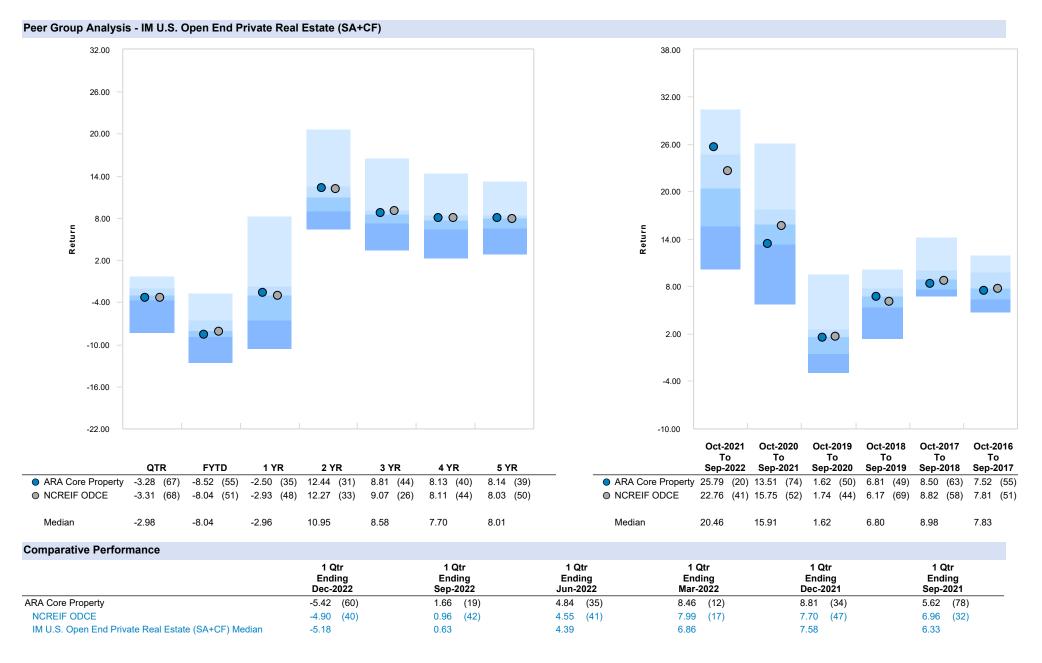
#### **Historical Statistics - 5 Years**

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
WA Core Bond; IS (WACSX)	2.03	117.87	124.92	-0.48	-0.13	-0.09	1.20	4.90
Blmbg. U.S. Agg Index	0.00	100.00	100.00	0.00	N/A	-0.07	1.00	3.84

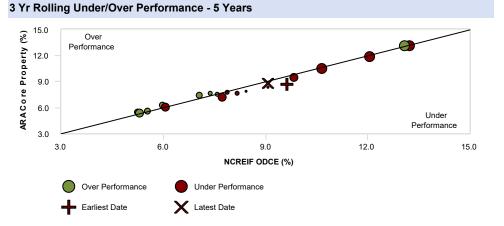


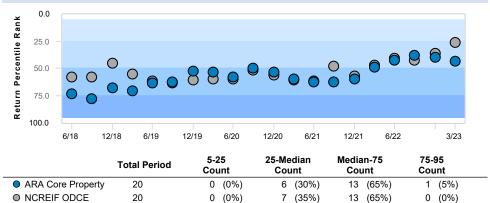




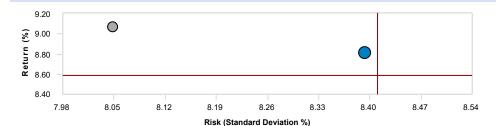




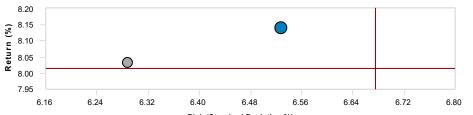




### Peer Group Scattergram - 3 Years



### Peer Group Scattergram - 5 Years



Risk (Standard Deviation %)

	Return	Standard Deviation		Return	Standard Deviation
ARA Core Property	8.81	8.39	ARA Core Property	8.14	6.53
NCREIF ODCE	9.07	8.05	NCREIF ODCE	8.03	6.29
Median	8.58	8.41	Median	8.01	6.67

### **Historical Statistics - 3 Years**

ARA Core Property

NCREIF ODCE

	Tracking Error	Up Market Capture	Down Market Capture	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk
ARA Core Property	1.28	99.49	104.78	-0.41	-0.17	0.86	1.02	3.73
NCREIF ODCE	0.00	100.00	100.00	0.00	N/A	0.91	1.00	3.49
Historical Statistics	s - 5 Years							
	Tracking Frror	Up Market	Down Market	Alpha	Information Ratio	Sharpe Ratio	Beta	Downside Risk





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	Market Value	Uncalled Capital Commitment	QTD IRR	Inception IRR	Inception Date	Expected Termination
*Angelo Gordon Net Lease Realty Fund III, L.P.	\$1,807,815	\$84,111	0.76	6.96	3/10/2014	4/1/2027
*Crescent Direct Lending Levered Fund	\$825,963	\$432,746	1.93	6.97	10/9/2014	12/1/2022
*Dune Real Estate Fund III *Deerpath Capital Advantage VI * TCW Direct Lending VIII	\$1,174,718 \$720,495 \$643,742	\$0 \$750,000 \$839,703	-2.48 3.16 0.09	6.81 10.93 0.8	11/6/2014 11/29/2021 7/21/2022	12/1/2024 TBD TBD

\* Market Value as of 12/31/22

Market Value includes contributions & distributions since end of period.



Allocation Mandate	Weight (%)	Allocation Mandate	Weight (%)
Jan-1978		Oct-2013	
S&P 500 Index	65.00	FT Wilshire 5000 Total Market (full-cap) Index	35.00
BImbg. U.S. Gov't/Credit	30.00	MSCI AC World ex USA (Net)	15.00
FTSE 3 Month T-Bill	5.00	Blmbg. U.S. Aggregate Index	27.50
		NCREIF ODCE	5.00
Apr-2007		Quadrant Custom Policy	5.00
Blmbg. U.S. Gov't/Credit	30.00	NCREIF Timberland Index	5.00
Blmbg. U.S. TIPS 1-10 Year	5.00	CPI+5%	7.50
S&P 500 Index	60.00		
MSCI EAFE (Net) Index	5.00	May-2014	
Dct-2007		FT Wilshire 5000 Total Market (full-cap) Index	35.00
MSCI EAFE (Net) Index	10.00	MSCI AC World ex USA (Net)	15.00
	30.00	Blmbg. U.S. Aggregate Index	27.50
Bloomberg Intermed Aggregate Index	5.00	NCREIF ODCE	10.00
Blmbg. U.S. TIPS 1-10 Year Russell 3000 Index		NCREIF Timberland Index	5.00
	50.00 5.00	CPI+5%	7.50
NCREIF Property Index	5.00	Jul-2015	
an-2010		FT Wilshire 5000 Total Market (full-cap) Index	35.00
/ISCI AC World ex USA (Net)	15.00	MSCI AC World ex USA (Net)	15.00
Bimbg, U.S. Aggregate Index	30.00	Blmbg. U.S. Aggregate Index	27.50
Bloomberg U.S. TIPS Index	5.00	NCREIF ODCE	10.00
Russell 3000 Index	45.00	NCREIF ODCE	5.00
NCREIF Property Index	5.00	Alternatives Policy	7.50
		Alternatives Folicy	7.50
ul-2010		Nov-2015	
T Wilshire 5000 Total Market (full-cap) Index	35.00	FT Wilshire 5000 Total Market (full-cap) Index	42.50
/ISCI AC World ex USA (Net)	15.00	MSCI AC World ex USA (Net)	15.00
Blmbg. U.S. Aggregate Index	25.00	Blmbg. U.S. Aggregate Index	27.50
Bloomberg U.S. TIPS Index	5.00	NCREIF ODCE	10.00
NCREIF ODCE	5.00	Alternatives Policy	5.00
Barclay BTOP 50	5.00		
Quadrant Custom Policy	5.00	Jul-2021	
NCREIF Timberland Index	5.00	FT Wilshire 5000 Total Market (full-cap) Index	52.50
		MSCI AC World ex USA (Net)	15.00
		Blmbg. U.S. Aggregate Index	17.50
		NCREIF ODCE	10.00
		··· ·· - ··	

Alternatives Policy



5.00

Total Equity Policy	
Allocation Mandate	Weight (%)
Oct-2005	
S&P 500 Index	95.00
FTSE 3 Month T-Bill	5.00
Apr-2007	
S&P 500 Index	85.00
FTSE 3 Month T-Bill	5.00
MSCI EAFE (Net) Index	10.00
Oct-2007	
Russell 3000 Index	85.00
MSCI EAFE (Net) Index	15.00
Jan-2010	
Russell 3000 Index	75.00
MSCI AC World ex USA (Net)	25.00
	20.00
Jul-2010	
FT Wilshire 5000 Total Market (full-cap) Index	55.00
MSCI AC World ex USA (Net)	45.00
Nov-2015	
FT Wilshire 5000 Total Market (full-cap) Index	75.00
MSCI AC World ex USA (Net)	25.00
	23.00

Domestic Equity Policy		
Allocation Mandate	Weight (%)	
Oct-2005		
S&P 500 Index	100.00	
Oct-2007		
Russell 3000 Index	100.00	
Jul-2010		
FT Wilshire 5000 Total Market (full-cap) Index	100.00	

Allocation Mandate	Weight (%)
Jan-1970	
MSCI EAFE (Net) Index	100.00
Jan-2010	
MSCI AC World ex USA (Net)	100.00
Alternatives Policy	
Allocation Mandate	Weight (%)
Aug-2010	
Barclay BTOP 50	100.00
Nov-2013	
CPI+5%	100.00
Jul-2015	
S&P 500 Index	50.00
Blmbg. U.S. Aggregate Index	50.00
Total Fixed Policy	
Allocation Mandate	Weight (%)
Oct-2005	
Blmbg. U.S. Gov't/Credit	95.00
FTSE 3 Month T-Bill	5.00
Jan-2007	
Blmbg. U.S. Gov't/Credit	85.00
Blmbg. U.S. TIPS 1-10 Year	15.00
Oct-2007	
Bloomberg Intermed Aggregate Index	85.00
Blmbg. U.S. TIPS 1-10 Year	15.00
Jan-2010	
	85.00
Jan-2010 Bimbg. U.S. Aggregate Index Bloomberg U.S. TIPS Index	85.00 15.00
Blmbg. U.S. Aggregate Index	



# Delray Beach Firefighters' Retirement System Fee Analysis As of March 31, 2023

	Market Value (\$)	Estimated Annual Fee (\$)	Estimated Annual Fee (%)	Fee Schedule
Newton LCV	34,983,878	182,427	0.52	0.55 % of First \$25 M 0.45 % of Next \$25 M 0.35 % of Next \$50 M 0.25 % Thereafter
Fidelity Total Market Ix (FSKAX)	1,985,440	199	0.01	0.01 % of Assets
Rhumbline R1000G	12,383,270	4,953	0.04	0.04 % of Assets
Polen Capital LCG	8,274,195	49,645	0.60	0.60 % of Assets
Fidelity Mid Cap Index Institutional (FSMDX)	11,391,493	3,417	0.03	0.03 % of Assets
Fidelity Small Cap Index (FSSNX)	4,573,615	1,372	0.03	0.03 % of Assets
Mass Mutual Small Cap (MSOOX)	5,476,255	37,786	0.69	0.69 % of Assets
Harding Loevner Intl Equity (HLIZX)	23,238,763	169,643	0.73	0.73 % of Assets
Baird Aggregate Bond Fund (BAGIX)	11,849,622	35,549	0.30	0.30 % of Assets
Western Assets Core Bond (WACSX)	11,814,416	50,802	0.43	0.43 % of Assets
PIMCO Diversified Income Fund (PDIIX)	2,689,517	20,709	0.77	0.77 % of Assets
ARA Core Property	9,924,034	109,164	1.10	1.10 % of Assets
Total Fund	145,711,627	680,919	0.47	



Active Return	- Arithmetic difference between the manager's performance and the designated benchmark return over a specified time period.
Alpha	- A measure of the difference between a portfolio's actual performance and its expected return based on its level of risk as determined by beta. It determines the portfolio's non-systemic return, or its historical performance not explained by movements of the market.
Beta	- A measure of the sensitivity of a portfolio to the movements in the market. It is a measure of the portfolio's systematic risk.
Consistency	- The percentage of quarters that a product achieved a rate of return higher than that of its benchmark. Higher consistency indicates the manager has contributed more to the product's performance.
Distributed to Paid In (DPI)	- The ratio of money distributed to Limited Partners by the fund, relative to contributions. It is calculated by dividing cumulative distributions by paid in capital. This multiple shows the investor how much money they got back. It is a good measure for evaluating a fund later in its life because there are more distributions to measure against.
Down Market Capture	- The ratio of average portfolio performance over the designated benchmark during periods of negative returns. A lower value indicates better product performance
Downside Risk	- A measure similar to standard deviation that utilizes only the negative movements of the return series. It is calculated by taking the standard deviation of the negative quarterly set of returns. A higher factor is indicative of a riskier product.
Excess Return	- Arithmetic difference between the manager's performance and the risk-free return over a specified time period.
Excess Risk	- A measure of the standard deviation of a portfolio's performance relative to the risk free return.
Information Ratio	- This calculates the value-added contribution of the manager and is derived by dividing the active rate of return of the portfolio by the tracking error. The higher the Information Ratio, the more the manager has added value to the portfolio.
Public Market Equivalent (PME)	- Designs a set of analyses used in the Private Equity Industry to evaluate the performance of a Private Equity Fund against a public benchmark or index.
R-Squared	- The percentage of a portfolio's performance that can be explained by the behavior of the appropriate benchmark. A high R-Squared means the portfolio's performance has historically moved in the same direction as the appropriate benchmark.
Return	- Compounded rate of return for the period.
Sharpe Ratio	- Represents the excess rate of return over the risk free return divided by the standard deviation of the excess return. The result is an absolute rate of return per unit of risk. A higher value demonstrates better historical risk-adjusted performance.
Standard Deviation	- A statistical measure of the range of a portfolio's performance. It represents the variability of returns around the average return over a specified time period.
Total Value to Paid In (TVPI)	- The ratio of the current value of remaining investments within a fund, plus the total value of all distributions to date, relative to the total amount of capital paid into the fund to date. It is a good measure of performance before the end of a fund's life
Tracking Error	- This is a measure of the standard deviation of a portfolio's returns in relation to the performance of its designated market benchmark.
Treynor Ratio	- Similar to Sharpe ratio but utilizes beta rather than excess risk as determined by standard deviation. It is calculated by taking the excess rate of return above the risk free rate divided by beta to derive the absolute rate of return per unit of risk. A higher value indicates a product has achieved better historical risk-adjusted performance.
Up Market Capture	- The ratio of average portfolio performance over the designated benchmark during periods of positive returns. A higher value indicates better product performance.

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