



QUARTERLY INVESTMENT REPORT

December 2022



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“Every new beginning comes from some other beginning's end.”
— Seneca, *The Elder*

MERS' Portfolio Characteristics

- Disciplined asset allocation
- Globally diversified
- May lag in periods of extended bull markets
- Valuation focused investors
- Focus on risk-adjusted returns

MERS' Office of Investments Goals

- Maintain adequate liquidity
- Exceed the actuarial rate assumption on a long-term basis
- Minimize costs
- Exceed the Policy Benchmark ⁽¹⁾ on a long-term basis

Economic and Market Summary

Financial markets experienced a rebound in the fourth quarter of 2022 to complete a tumultuous year. The S&P 500 returned 7.55% as investors focused on decelerating inflation data despite efforts by the Federal Reserve to tame markets through their insistence that they will keep interest rates higher for longer. Year-over-year inflation has declined every month from 9.10% in June to 6.50% in December. Robust labor markets helped fuel this rally as unemployment remains at a 50-year low of 3.50% despite companies undergoing margin pressures and rising borrowing costs. 223,000 jobs were created in the month of December, exceeding expectations. Q4 GDP came in at 2.90%, marking two straight quarters of growth. As economic data continued to surprise to the upside during the quarter, this has also led to strong performance by mid and small cap companies. These stocks have outperformed large cap by 3.21% and 1.61% during the quarter. Value stocks have continued to outperform growth stocks as tightening monetary policy has impacted growth companies the most. The S&P 500 value index outperformed the growth index by 24.16% on the year. In the Eurozone, due to a mild winter, fears of an energy crisis have been subdued, which paved the way for the MSCI Europe index to return 19.92% during the quarter. In emerging markets, the index returned 9.64%. The reopening of China and a weakening U.S. dollar were the main contributors to strong performance in emerging markets. While Q4 was an excellent quarter for financial markets, 2022 on the year still produced historically negative returns. Due to surging interest rates, high inflation, and geopolitical events, markets sold off. 2022 was the sixth time since 1926 that both the S&P 500 and Bloomberg U.S. Aggregate declined. It is the only time in history when they each fell by more than 10%. Going into 2023, the labor market, inflation, and financial conditions will be monitored closely to gauge the next step in Federal Reserve policy.

Portfolio Performance Review

MERS' Total Portfolio returned 6.86% (net) for the fourth quarter, underperforming the Policy Benchmark by 44 bps. The Global Equity Portfolio returned 11.65%, outperforming the Global Equity Policy Blend by 227 bps primarily due to its underweight in U.S. equities and overweight in international and emerging market equities. The MERS U.S. Equity Portfolio outperformed the Russell 3000 benchmark by 158 bps. Being overweight to U.S. Mid, Small, and Micro Cap added value to the portfolio and selection within U.S. Large Cap. The MERS International Equity Portfolio underperformed its benchmark by 104 bps as an underweight to Europe detracted. The Emerging Market Equity Portfolio outperformed its benchmark by 118 bps. The Global Fixed Income Portfolio returned 3.72% on the quarter, beating the Global Fixed Policy Blend by 45 bps. An underweight to interest rate duration and an overweight to emerging market debt, and high yield contributed to the outperformance. The Private Investments Portfolio delivered a return of 0.40%, which contributed to the underperformance of the Total Market Portfolio during the quarter. The Total Market Portfolio will often underperform during strong up markets, as there is a time lag before private market values update to reflect this market strength. MERS' Defined Benefit (DB) portfolio assets are \$10.85 billion, and MERS' total assets are \$13.96 billion.

Risks and Trends

Economic Risks

- Covid-19 resurgence
- Monetary policy mistakes
- Corporate/government debt levels
- Eurozone instability
- Fiscal policy implementation
- Supply-chain disruptions

Medium-Term Trends

- Rise of populism
- Investment industry consolidation
- Rise of active investing
- Amplification of country and regional investment risks
- In-sourcing | Supply chain realignment

Long-Term Trends

- Aging population/workforce
- Rising taxes/entitlement costs
- Aging infrastructure
- Deglobalization | Competition for resources
- Geopolitical instability
- Rise of ESG

Projects and Initiatives

- Incorporating ETFs into the asset allocation program and internal strategies
- Researching the role of active management in sub-asset classes
- Enhancing internal equity portfolio models
- Internal fixed income portfolio development

¹ The Policy Benchmark consists of: 45% Russell 3000, 20% MSCI ACWI ex USA IMI (net), 25% Bloomberg US Aggregate, and 10% Bloomberg Global Aggregate ex U.S.

Asset Class Valuation Summary

Value/Price Discrepancy¹

Asset Class	Overvalued	Undervalued
US Equity	-48.41%	
Europe Equity	-16.20%	
Asia Pacific Equity		44.35%
EM Equity		37.54%
US Treasury	-4.38%	
EMD	-3.79%	
US HY	-10.76%	

¹ The value/price discrepancy is a ratio that compares the estimated fair value of an asset relative to its current market price. Overvalued assets have prices above estimated fair value and are expressed as a negative percentage and undervalued assets have prices below estimated fair value and are expressed as a positive percentage.

Equity Market Outlook

- Valuation multiples are still historically elevated in the U.S., and current earnings remain above estimated trend earnings contributing to that market's overvaluation.
- Valuation multiples and earnings are expected to revert to long-term averages resulting in lower expected returns for US equities.
- Valuations are more favorable in Asia Pacific and Emerging Markets.
- Asia Pacific earnings are currently below trend, which is expected to drive higher returns in the future as earnings recover to long-term cyclically-adjusted levels.
- In Emerging Markets, recovery from current below-trend earnings and strong trend earnings growth is expected to provide positive support going forward.

Fixed Income Market Outlook

- All fixed income asset classes are currently overvalued on MERS valuation models
- Rising cash rates throughout 2022 has increased discount rates for longer duration assets such as US Treasuries and EM Debt
- EM Debt is the most attractively priced fixed income segment, with spreads above long term averages
- US high yield credit is overvalued due to spreads that are below historical averages, and the absence of a meaningful risk premium being priced into that market as of year-end.

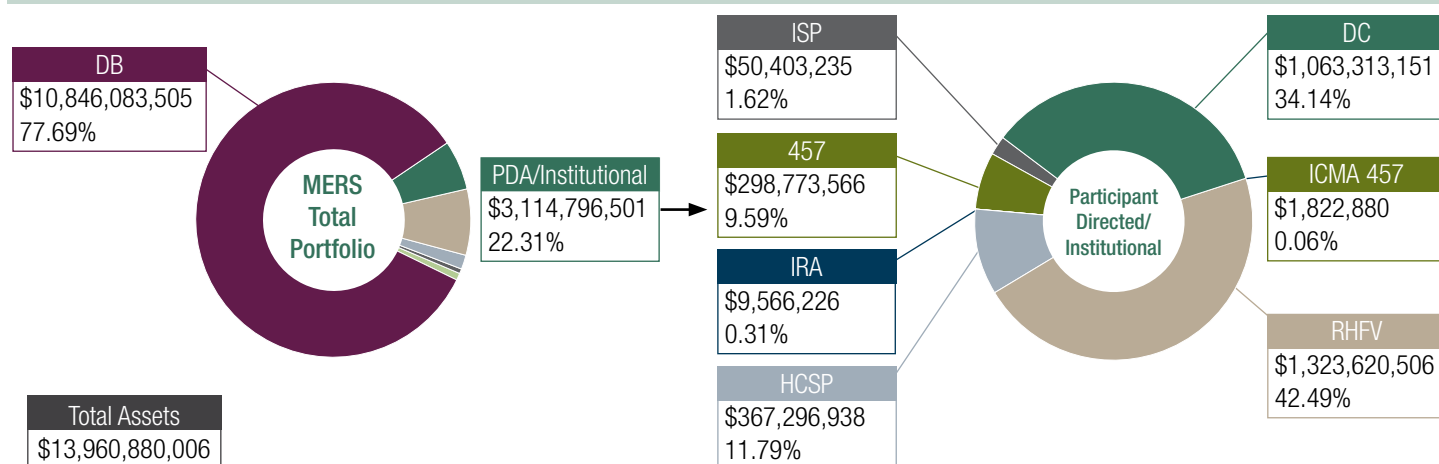
Chart of the Quarter

Source: Callan

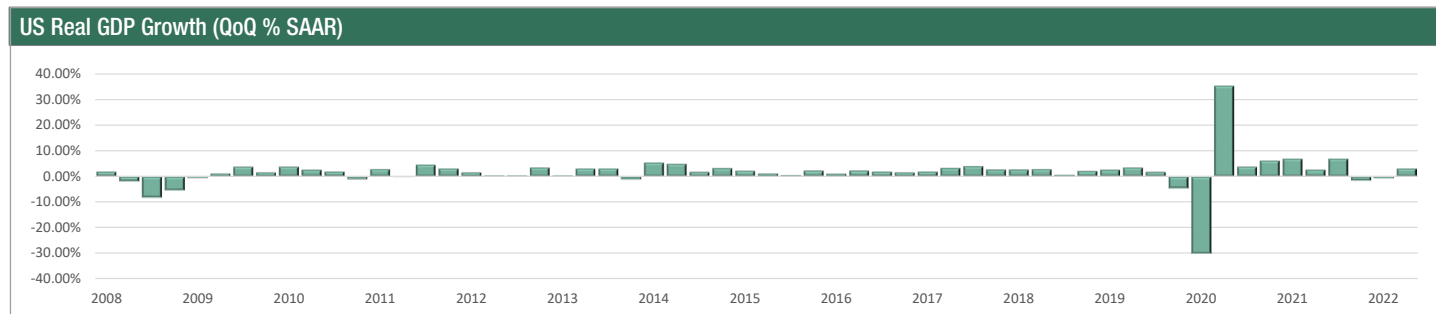
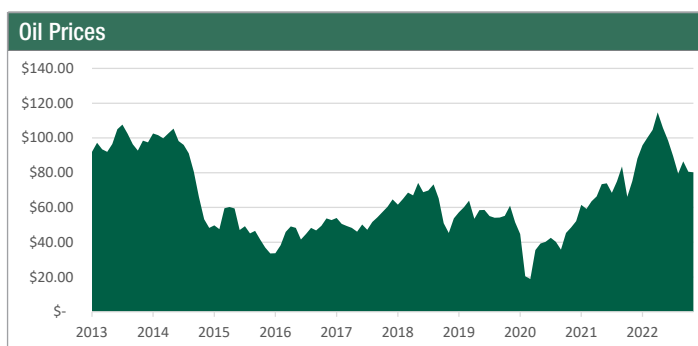
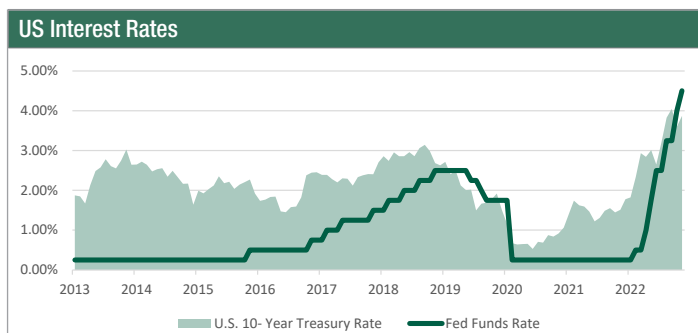
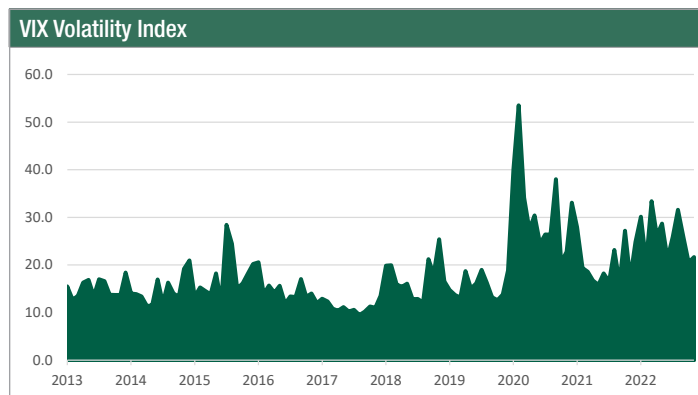
2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Emerging Market Equity	Real Estate	Emerging Market Equity	Real Estate	Emerging Market Equity	Real Estate	Emerging Market Equity	Real Estate	Emerging Market Equity	Real Estate	Emerging Market Equity	Real Estate	Emerging Market Equity	Real Estate	Emerging Market Equity	Real Estate	Emerging Market Equity	Real Estate	Emerging Market Equity	Real Estate
58.82%	37.96%	34.09%	42.12%	39.38%	5.24%	78.61%	26.85%	7.84%	27.73%	38.82%	15.02%	1.38%	21.31%	37.28%	1.87%	31.49%	19.96%	28.71%	1.46%
Small Cap Equity	Emerging Market Equity	Real Estate	Emerging Market Equity	Dev ex- U.S. Equity	Glob ex- U.S. Equity	High Yield	Real Estate	High Yield	Emerging Market Equity	Large Cap Equity	Large Cap Equity	U.S. Fixed Income	High Yield	Dev ex- U.S. Equity	U.S. Fixed Income	Small Cap Equity	Large Cap Equity	Real Estate	High Yield
47.23%	25.55%	15.35%	32.17%	12.44%	4.39%	68.21%	19.63%	4.98%	18.23%	32.39%	13.68%	0.55%	17.13%	24.21%	0.01%	25.52%	18.40%	26.09%	-11.19%
Real Estate	Dev ex- U.S. Equity	Dev ex- U.S. Equity	Dev ex- U.S. Equity	Glob ex- U.S. Equity	Cash Equivalent	Real Estate	Emerging Market Equity	Dev ex- U.S. Equity	Dev ex- U.S. Equity	Dev ex- U.S. Equity	U.S. Fixed Income	U.S. Fixed Income	U.S. Fixed Income	U.S. Fixed Income	U.S. Fixed Income	U.S. Fixed Income	U.S. Fixed Income	U.S. Fixed Income	U.S. Fixed Income
40.68%	20.38%	14.47%	25.71%	11.03%	2.09%	37.13%	18.58%	4.36%	16.41%	21.02%	5.97%	0.05%	11.96%	21.83%	-2.08%	22.49%	18.31%	14.82%	-13.01%
Dev ex- U.S. Equity	Small Cap Equity	Large Cap Equity	Small Cap Equity	U.S. Fixed Income	High Yield	Dev ex- U.S. Equity	High Yield	Large Cap Equity	Small Cap Equity	High Yield	Small Cap Equity	Real Estate	Emerging Market Equity	Small Cap Equity	Glob ex- U.S. Equity	Real Estate	Glob ex- U.S. Equity	Dev ex- U.S. Equity	Dev ex- U.S. Equity
39.42%	16.33%	4.91%	18.37%	8.97%	-26.16%	33.05%	16.12%	2.11%	16.35%	7.44%	4.89%	-6.78%	11.19%	14.65%	-2.10%	21.91%	10.11%	12.42%	14.29%
High Yield	Glob ex- U.S. Equity	Small Cap Equity	Large Cap Equity	Large Cap Equity	Large Cap Equity	Small Cap Equity	Large Cap Equity	Cash Equivalent	Small Cap Equity	High Yield	Real Estate	High Yield	Dev ex- U.S. Equity	Real Estate	Large Cap Equity	Emerging Market Equity	Dev ex- U.S. Equity	U.S. Fixed Income	U.S. Fixed Income
28.97%	12.54%	4.55%	15.79%	5.49%	-33.79%	27.17%	15.06%	0.10%	3.67%	2.45%	-3.04%	4.06%	10.51%	-4.35%	18.44%	High Yield	U.S. Fixed Income	Cash Equivalent	Glob ex- U.S. Equity
Large Cap Equity	High Yield	Cash Equivalent	High Yield	Cash Equivalent	Cash Equivalent	Large Cap Equity	Small Cap Equity	High Yield	Cash Equivalent	Cash Equivalent	Small Cap Equity	Dev ex- U.S. Equity	Real Estate	Real Estate	Real Estate	High Yield	U.S. Fixed Income	Cash Equivalent	Glob ex- U.S. Equity
28.68%	11.13%	3.07%	11.85%	5.00%	-37.00%	26.47%	8.95%	-4.18%	15.81%	0.07%	0.63%	-4.41%	10.36%	-5.53%	14.32%	7.51%	0.08%	-18.70%	-18.70%
Glob ex- U.S. Equity	Large Cap Equity	High Yield	Glob ex- U.S. Equity	High Yield	Dev ex- U.S. Equity	Glob ex- U.S. Equity	U.S. Fixed Income	Real Estate	U.S. Fixed Income	U.S. Fixed Income	Emerging Market Equity	High Yield	U.S. Fixed Income	High Yield	Small Cap Equity	U.S. Fixed Income	High Yield	U.S. Fixed Income	Emerging Market Equity
19.36%	10.88%	2.74%	8.16%	1.87%	-43.56%	7.53%	6.54%	-6.46%	4.21%	-2.02%	-2.19%	-4.47%	2.65%	7.50%	-11.01%	8.72%	7.11%	-1.54%	-20.44%
U.S. Fixed Income	U.S. Fixed Income	U.S. Fixed Income	Cash Equivalent	Small Cap Equity	Real Estate	Real Estate	Glob ex- U.S. Equity	Glob ex- U.S. Equity	Glob ex- U.S. Equity	Glob ex- U.S. Equity	Glob ex- U.S. Equity	Glob ex- U.S. Equity	Glob ex- U.S. Equity	Glob ex- U.S. Equity	Glob ex- U.S. Equity	Glob ex- U.S. Equity	Glob ex- U.S. Equity	Glob ex- U.S. Equity	Glob ex- U.S. Equity
4.10%	4.34%	2.43%	4.85%	-1.57%	-48.21%	4.93%	4.95%	4.09%	-2.60%	-3.99%	-3.99%	-3.99%	-3.99%	-3.99%	-3.99%	-3.99%	-3.99%	-3.99%	-3.99%
Cash Equivalent	Cash Equivalent	Glob ex- U.S. Equity	Real Estate	Emerging Market Equity	Cash Equivalent	Cash Equivalent	Cash Equivalent	Cash Equivalent	Cash Equivalent	Cash Equivalent	Dev ex- U.S. Equity	Emerging Market Equity	Cash Equivalent	Cash Equivalent	Cash Equivalent	Cash Equivalent	Cash Equivalent	Real Estate	Glob ex- U.S. Equity
1.15%	1.33%	-8.65%	4.33%	-7.39%	-53.33%	0.21%	0.13%	-18.42%	0.11%	-3.08%	-4.32%	-14.92%	0.33%	0.88%	-14.57%	2.28%	-9.04%	-7.85%	-25.10%

Most major markets entered bear market territory in 2022. Factors such as rapidly escalating inflation, rising interest rates, recession fears, frothy starting valuations, and the war in Ukraine negatively impacted returns. The Callan Periodic Table of Investment Returns conveys a strong case for diversification across various asset classes. A year after large cap equities, real estate equities, and small cap equities were the top-performing asset classes; they were among the worst-performing in 2022. MERS continues to maintain a diversified portfolio to protect itself from the uncertainty of capital markets, as mean reversion remains a powerful force in markets.

Assets by Program

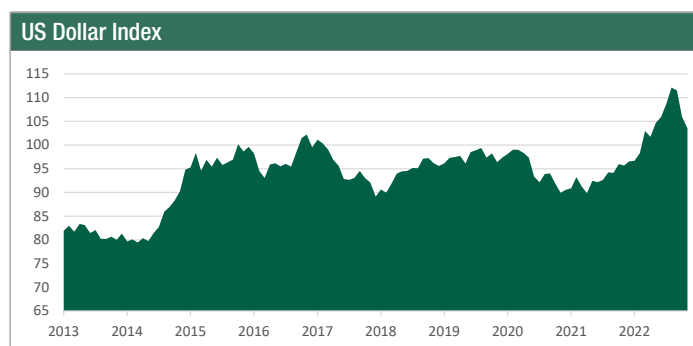
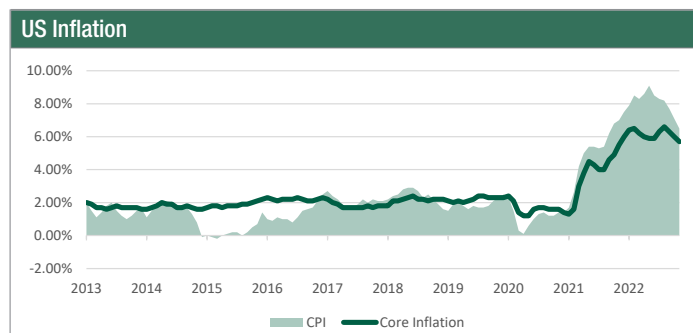
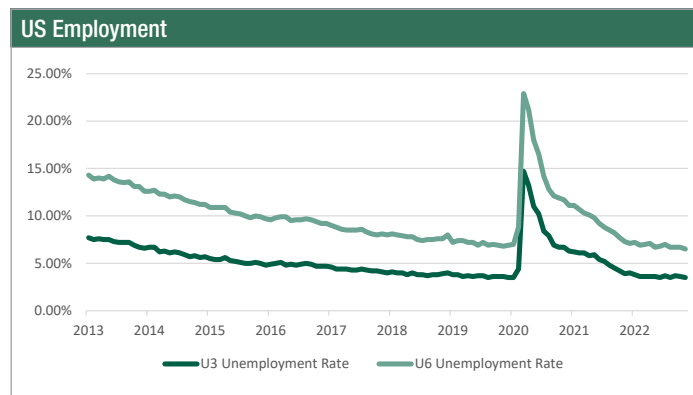


Market Indicators	Current	Prior Quarter
10 Year Treasury Yield	3.87%	3.83%
Fed Funds Rate	4.50%	3.25%
Crude Oil	\$80.3 /barrel	\$79.5 /barrel
Gold	\$1,824.0 /oz.	\$1,660.6 /oz.
30 Year Fixed Mortgage Rates	6.66%	7.06%
US Investment Grade Credit Spread	1.30%	1.59%
US High Yield Credit Spread	4.69%	5.52%
US Leading Economic Indicators	-6.00%	-1.60%

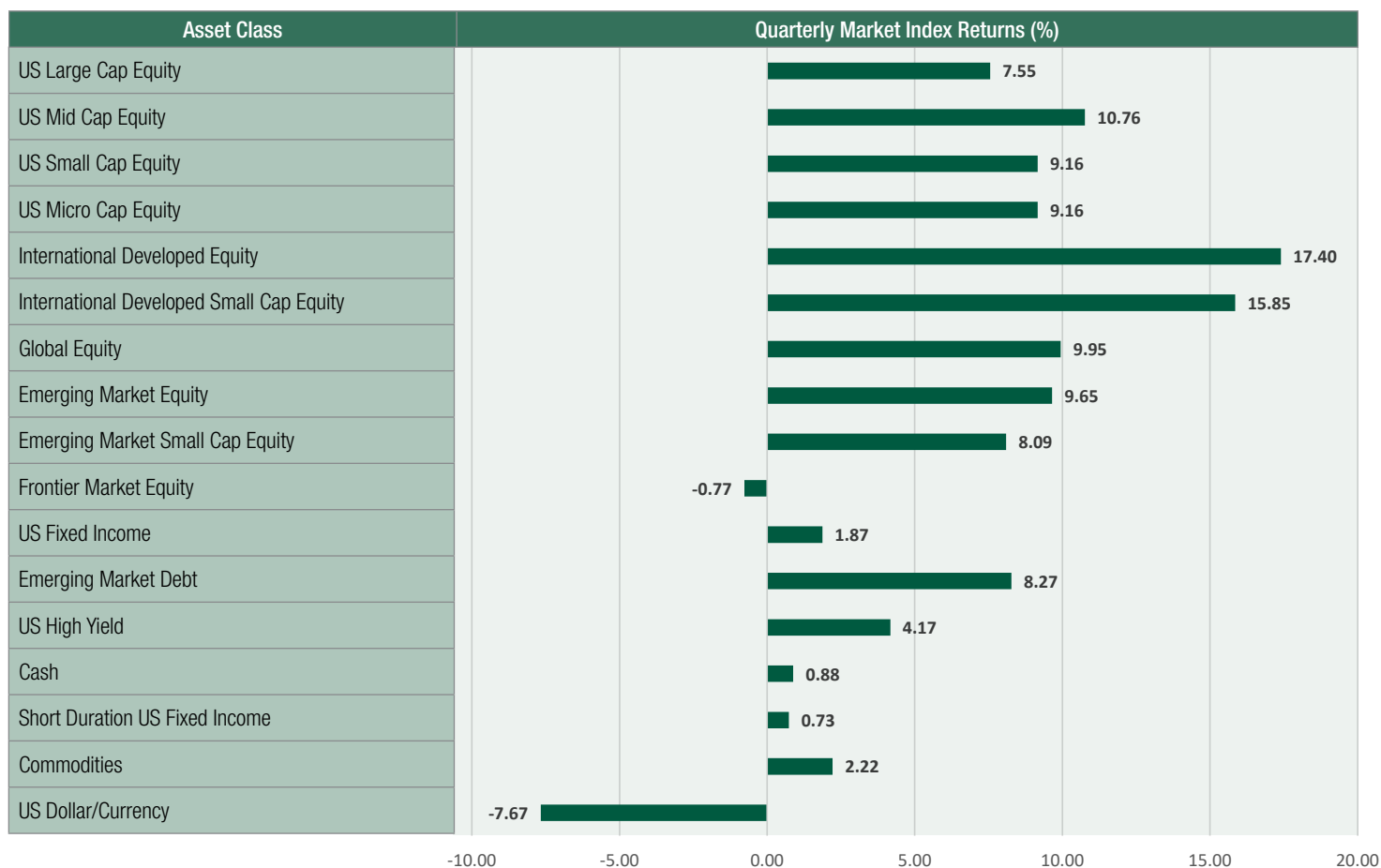


Economic Releases	Current	Prior Quarter
ISM Manufacturing	48.40	50.90
ISM Non-Manufacturing	49.60	56.70
U of M Consumer Sentiment	59.70	58.60
US Real GDP*	1.90%	1.80%
Eurozone Real GDP*	2.30%	4.30%
UK GDP*	1.90%	4.00%
Japan GDP*	1.50%	1.60%
China GDP*	3.90%	0.40%

* All GDP data is lagged 1 quarter

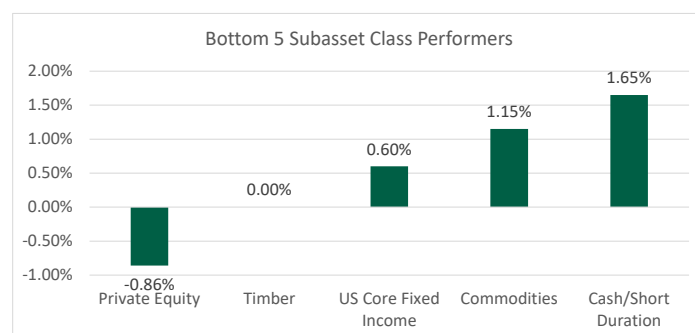
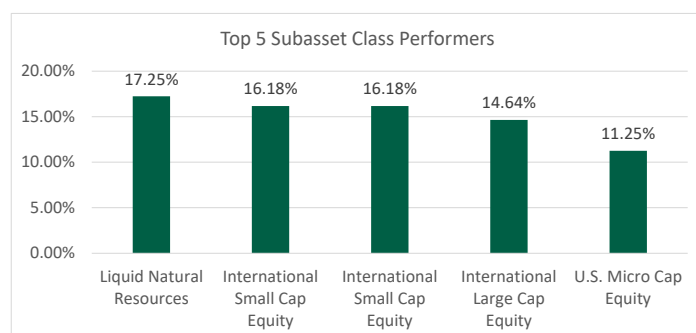
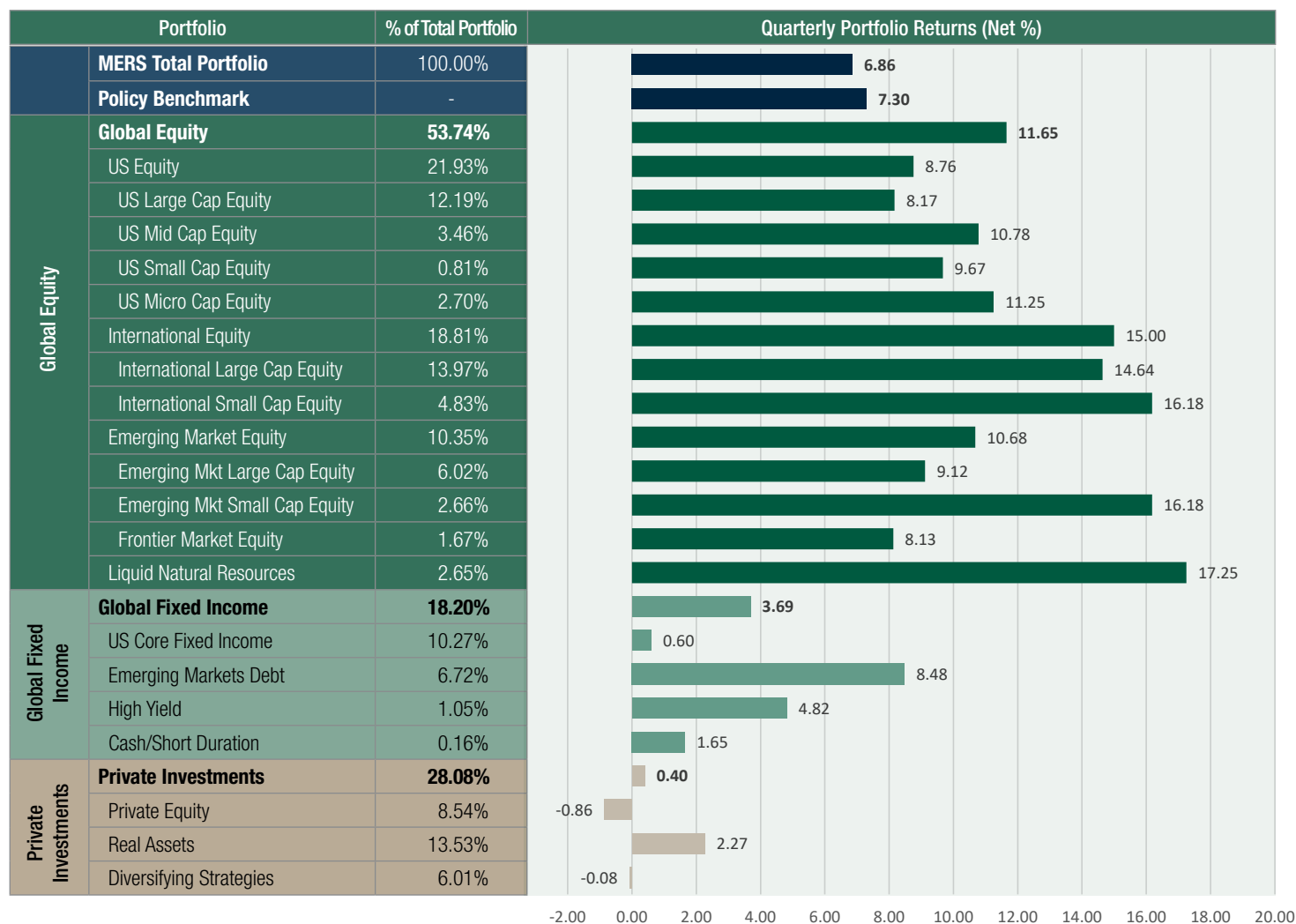


Quarterly Market Performance Review



Market Index Returns

Market Index	Asset Class	QTD	YTD	1 Year	3 Year	5 Year	7 Year	10 Year
S&P 500	US Large Cap Equity	7.55	-18.13	-18.13	7.64	9.41	11.47	12.55
S&P 400	US Mid Cap Equity	10.76	-13.10	-13.10	7.20	6.68	9.92	10.76
S&P 600	US Small Cap Equity	9.16	-16.15	-16.15	5.74	5.83	9.60	10.77
Russell Microcap	US Micro Cap Equity	4.71	-21.98	-21.98	4.02	3.69	7.25	8.86
MSCI EAFE	International Developed Equity	17.40	-13.92	-13.92	1.44	2.13	5.12	5.27
MSCI EAFE Small Cap	International Developed Small Cap Equity	15.85	-21.01	-21.01	-0.52	0.36	4.85	6.59
MSCI ACWI IMI	Global Equity	9.95	-18.00	-18.00	4.39	5.51	8.55	8.53
MSCI Emerging Markets	Emerging Market Equity	9.65	-19.91	-19.91	-2.41	-1.09	5.53	1.78
MSCI Emerging Markets Small Cap	Emerging Market Small Cap Equity	8.09	-17.87	-17.87	5.38	1.33	5.64	3.46
MSCI Frontier Markets Index	Frontier Market Equity	-0.77	-26.15	-26.15	-3.47	-2.37	2.66	3.25
Bloomberg U.S. Aggregate	US Fixed Income	1.87	-13.01	-13.01	-2.71	0.02	0.89	1.06
JPMorgan EMBI Global Diversified Index	Emerging Market Debt	8.27	-17.43	-17.43	-5.34	-1.63	1.38	1.19
ICE BofA Merrill Lynch Global High Yield	US High Yield	4.17	-11.19	-11.19	0.05	2.31	5.05	4.03
91 Day Treasury Bill	Cash	0.88	1.52	1.52	0.70	1.22	1.03	0.73
Bloomberg 1-3 Year Treasury	Short Duration US Fixed Income	0.73	-3.81	-3.81	-0.46	0.74	0.71	0.65
Bloomberg Commodity Index Total Return	Commodities	2.22	16.09	16.09	12.65	6.44	6.49	-1.28
Bloomberg Dollar Spot Index	US Dollar/Currency	-7.67	8.21	8.21	7.40	2.36	0.69	2.64

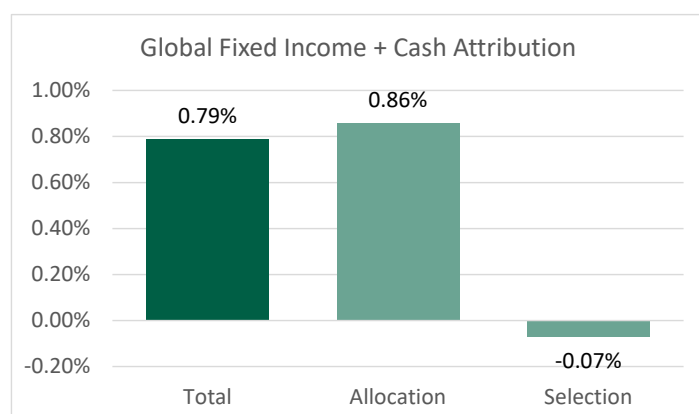
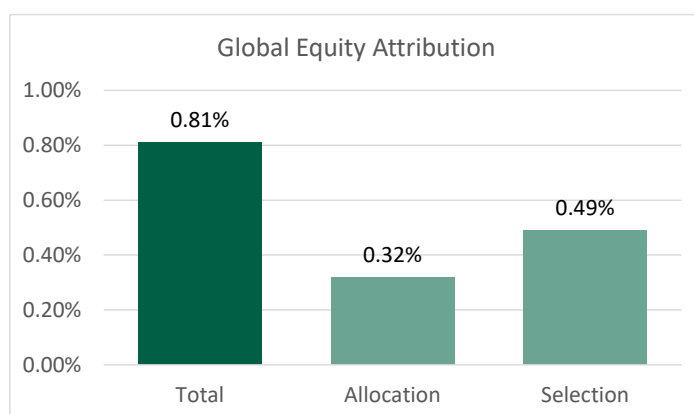
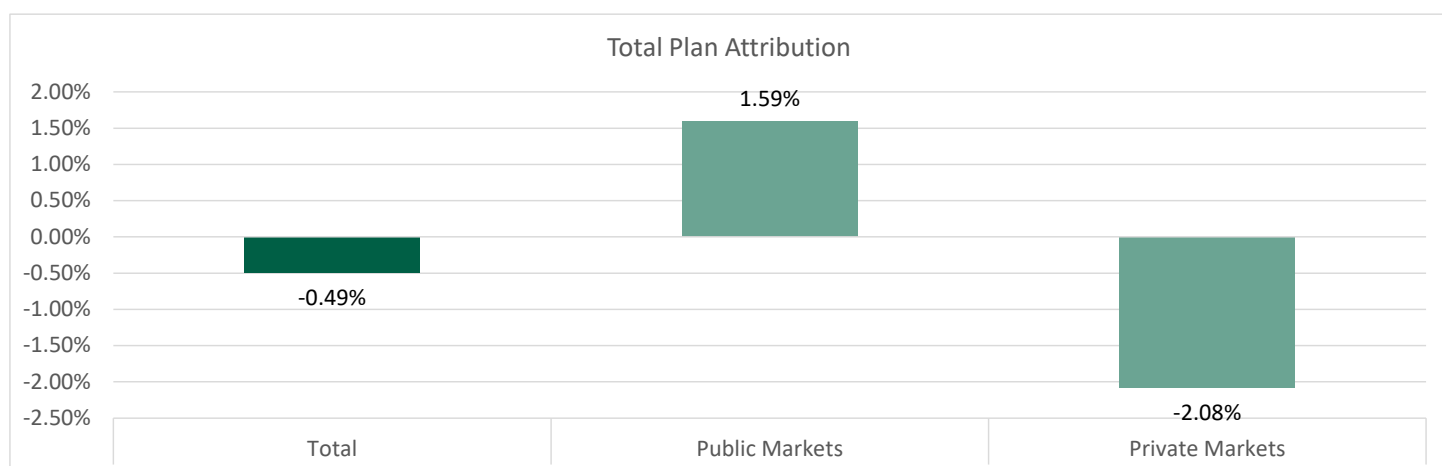


QUARTERLY PORTFOLIO ATTRIBUTION SUMMARY

2022
DECEMBER

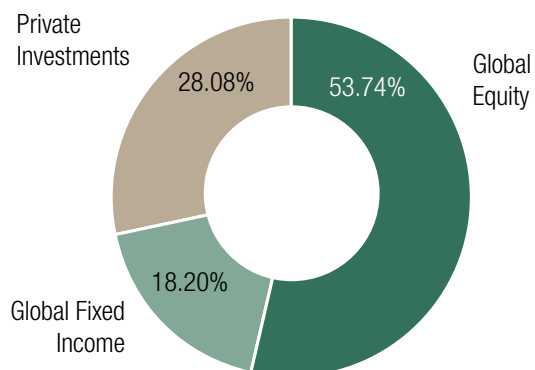
	Avg Weight			Return (Net)			Attribution Totals		
	Portfolio	Benchmark	Difference	Portfolio	Benchmark	Difference	Allocation	Selection	Total
Total Plan	100.00%	100.00%	0.00%	6.87%	7.36%	-0.49%	1.16%	-1.65%	-0.49%
Public Markets	71.26%	100.00%	-28.74%	9.59%	7.36%	2.23%	1.18%	0.42%	1.59%
Global Equity	53.10%	65.00%	-11.90%	11.61%	9.47%	2.14%	0.32%	0.49%	0.81%
U.S. Equity	22.45%	45.00%	-22.55%	8.73%	7.18%	1.55%	-0.06%	0.34%	0.29%
International Equity	18.30%	15.00%	3.30%	14.96%	16.04%	-1.08%	0.27%	-0.19%	0.07%
Emerging Market Equity	9.84%	5.00%	4.84%	10.66%	9.50%	1.16%	0.11%	0.10%	0.21%
Liquid Natural Resources	2.51%	0.00%	2.51%	17.01%	7.30%	9.71%	0.00%	0.24%	0.24%
Global Fixed Income	18.32%	35.00%	-16.68%	3.69%	3.27%	0.42%	0.83%	-0.11%	0.72%
U.S. Core Fixed Income	10.52%	25.00%	-14.48%	0.60%	1.87%	-1.27%	0.76%	-0.14%	0.63%
Global Agg ex USD	0.00%	10.00%	-10.00%	0.00%	6.81%	-6.81%	0.04%	0.00%	0.04%
Emerging Markets Debt	6.71%	0.00%	6.71%	8.42%	8.11%	0.31%	0.05%	0.02%	0.08%
U.S. High Yield	1.08%	0.00%	1.08%	4.82%	4.17%	0.65%	-0.04%	0.01%	-0.03%
Cash	-0.15%	0.00%	-0.15%	11.97%	0.85%	11.12%	0.03%	0.04%	0.07%
Private Investments	28.74%	0.00%	28.74%	0.39%	7.30%	-6.91%	-0.02%	-2.07%	-2.08%

- Underperformance was driven by the Private Investments Portfolio (-208bps) due to a lag in mark to market gains.
- The Global Equity and Global Fixed income portfolios added value (+81bps & +72bps).
- Underweight to U.S. Core fixed income Selection was the largest sub-asset class contributor (+76bps).
- Selection in U.S. Equity and overweight to International Equity also added value (+34bps & +27bps).

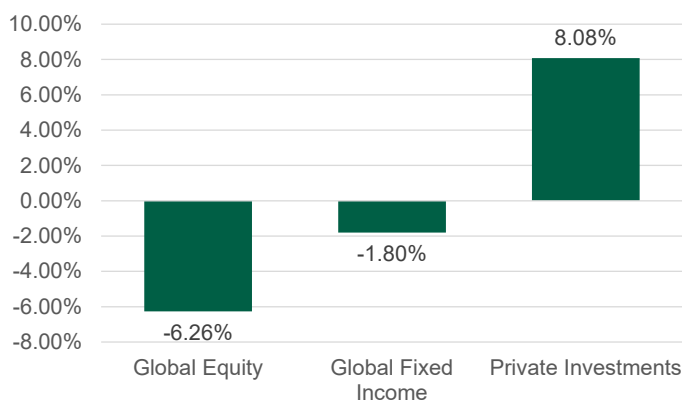


Asset Class	Market Value	% of Fund	Base Allocation	Over/Under Weight	Minimum Allocation	Maximum Allocation
Global Equity	\$6,583,284,507	53.74%	60.00%	-6.26%	30.00%	70.00%
Global Fixed Income	\$2,227,899,982	18.20%	20.00%	-1.80%	10.00%	60.00%
Private Investments	\$3,439,636,658	28.08%	20.00%	8.08%	No Minimum	30.00%
Total	\$12,250,821,147	100.00%	100.00%			

Asset Allocation

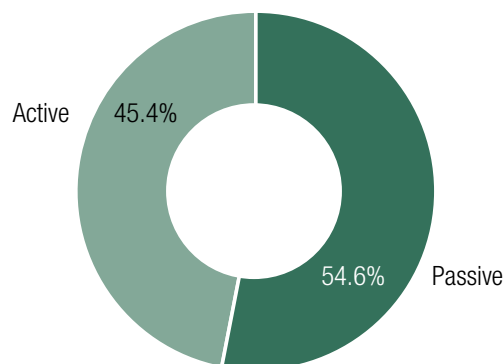


Asset Class Over/Under Weights



Asset Class	MERS Public Markets ¹	Policy Benchmark ²	Over/Under Weight
U.S. Equity	34.18%	45.00%	-10.82%
International Equity	25.15%	14.40%	10.75%
Emerging Market Equity	14.39%	5.60%	8.79%
U.S. Treasury	14.26%	20.81%	-6.54%
U.S. Investment Grade	0.02%	14.19%	-14.17%
U.S. High Yield	1.46%	0.00%	1.46%
Emerging Market Debt	9.35%	0.00%	9.35%
Cash/Short Duration	0.19%	0.00%	0.19%

MERS Public Markets

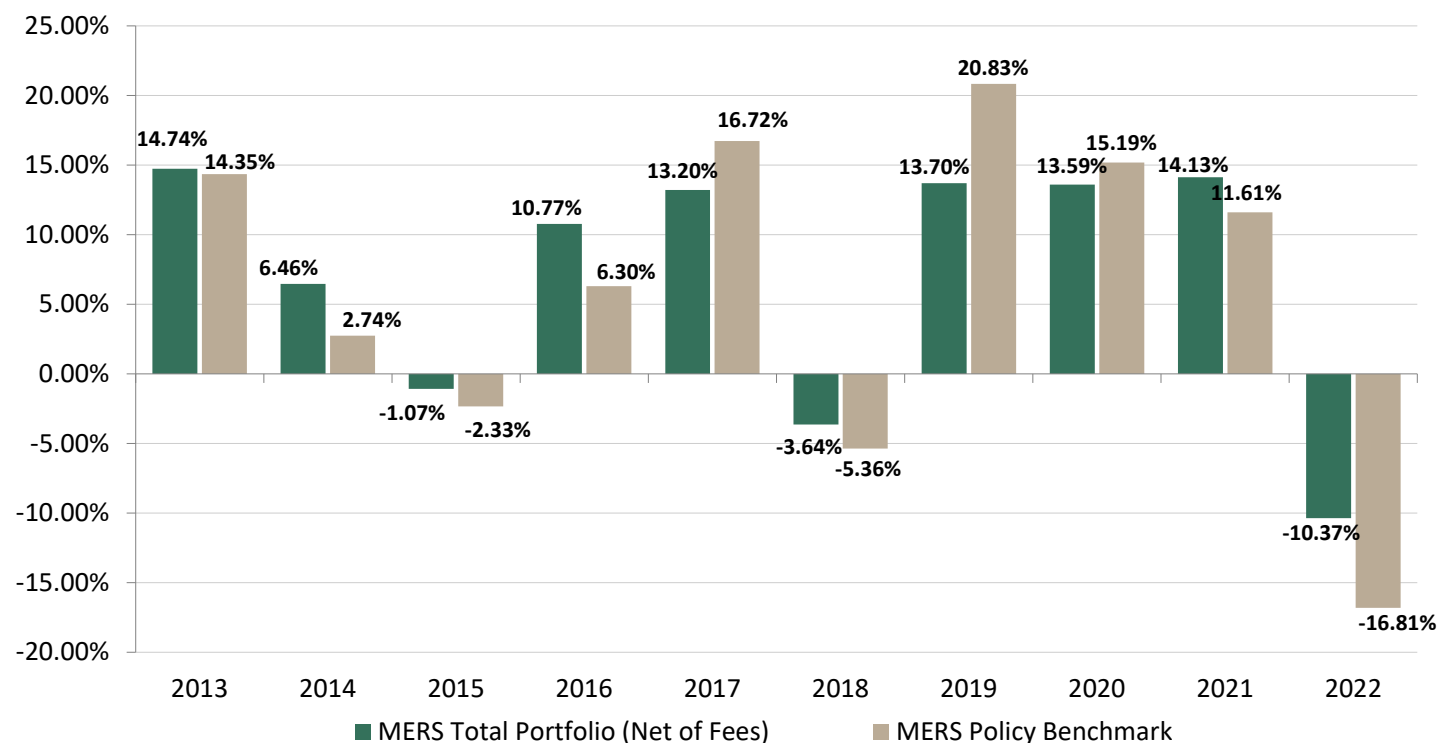


¹ MERS' Public Markets is made up of the Global Equity and Global Fixed Income Asset Classes

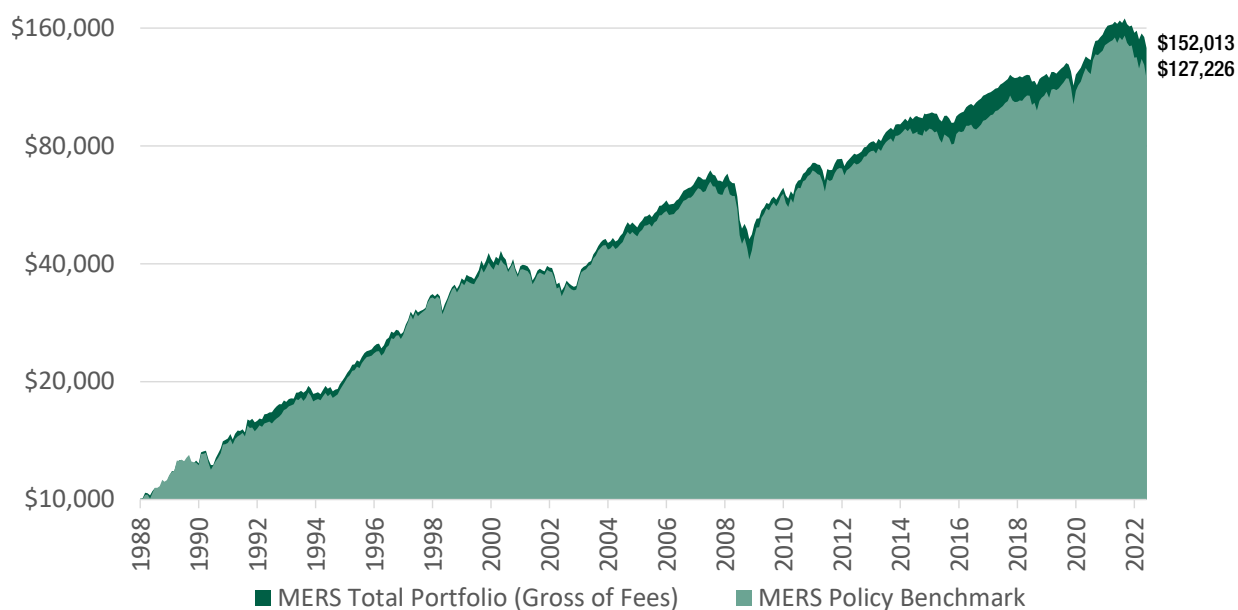
² 45% Russell 3000, 20% MSCI ACWI ex USA IMI (net), 25% Bloomberg Barclays US Aggregate, and 10% Bloomberg Barclays Global Aggregate ex U.S.

	QTD	YTD	1 Year	3 Year	5 Year	7 Year	10 Year
MERS Total Portfolio - Gross of Fees (%)	6.91	-10.24	-10.24	5.30	5.10	7.09	6.99
MERS Total Portfolio - Net of Fees (%)	6.86	-10.37	-10.37	5.13	4.95	6.91	6.79
Policy Benchmark (%)	7.30	-16.81	-16.81	2.26	4.11	6.14	5.70
Excess (Net) (%)	-0.44	6.44	6.44	2.87	0.84	0.77	1.09

Calendar Year Performance – Last 10 Years

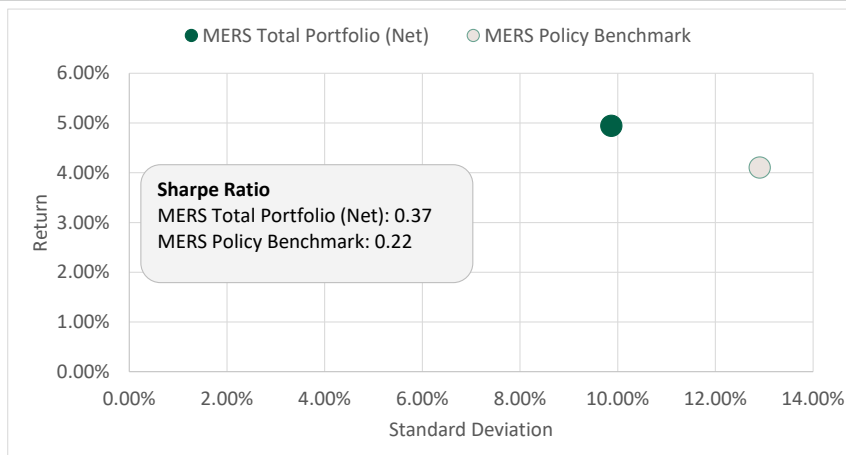


Growth of \$10,000 Comparison



5-Year

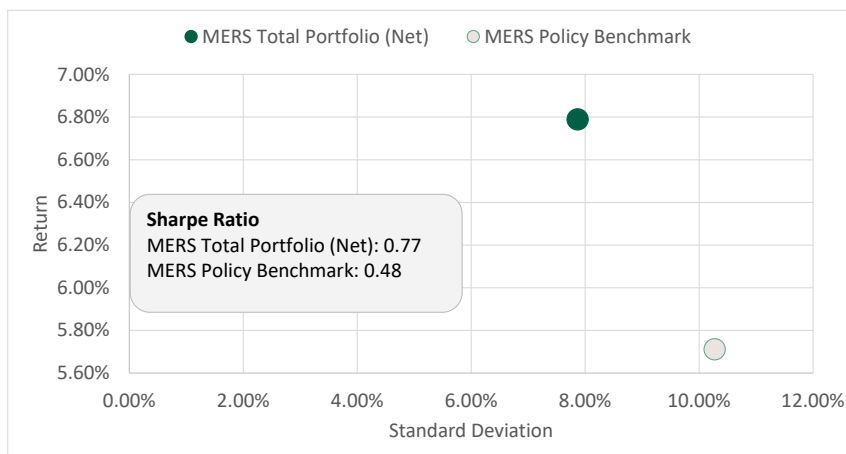
	Return	Standard Deviation	Downside Risk	Beta	R-Squared	Tracking Error
MERS Total Portfolio (Net)	4.94%	9.87%	7.32%	0.75	95.63	3.86%
MERS Policy Benchmark	4.11%	12.90%	9.62%	1.00	100	



	# of Months		Average Return		Up Capture	Down Capture
	Up	Down	Up	Down		
MERS Total Portfolio (Net)	37	23	2.16%	-2.32%	77.80%	74.10%
MERS Policy Benchmark	37	23	2.68%	-3.26%		

10-Year

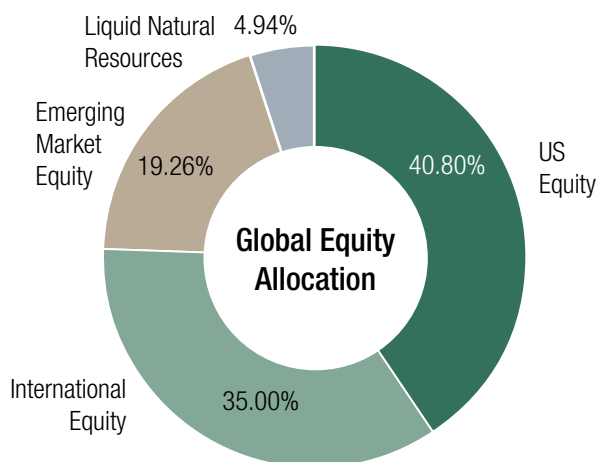
	Return	Standard Deviation	Downside Risk	Beta	R-Squared	Tracking Error
MERS Total Portfolio (Net)	6.79%	7.87%	5.91%	0.74	92.96	3.40%
MERS Policy Benchmark	5.71%	10.27%	7.69%	1.00	100.00	



	# of Months		Average Return		Up Capture	Down Capture
	Up	Down	Up	Down		
MERS Total Portfolio (Net)	81	39	1.75%	-1.87%	81.20%	68.40%
MERS Policy Benchmark	79	41	2.11%	-2.59%		

Market Value	\$6,583,284,507
Assets – % of Portfolio	53.74%

Sub Asset Class	Market Value
US Equity	\$2,686,270,038
International Equity	\$2,304,073,582
Emerging Market Equity	\$1,267,916,877
Liquid Natural Resources	\$325,024,010
Total	\$6,583,284,507



Performance (Net)

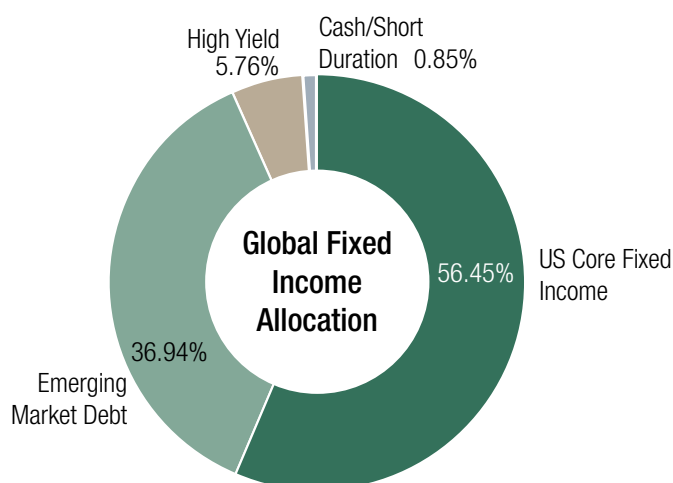
	Market Value	% OF PLAN	QTD	YTD	1 Year	3 Year	5 Year	7 Year	10 Year
Global Equity	\$6,583,284,507	53.74	11.65	-16.10	-16.10	3.86	4.15	7.36	8.25
<i>Global Equity Policy Blend ¹</i>			9.38	-18.29	-18.29	5.00	6.36	8.91	9.30
<i>MSCI ACWI</i>			9.76	-18.36	-18.36	4.00	5.23	8.10	7.98
US Equity	\$2,686,270,038	21.93	8.76	-16.44	-16.44	6.90			
<i>Russell 3000</i>			7.24	-19.13	-19.13	7.35			
US Large Cap Equity	\$1,493,052,796	12.19	8.17	-16.90	-16.90	7.52	8.88	11.44	12.97
<i>Russell 1000</i>			7.56	-18.11	-18.11	7.66	9.42	11.48	12.56
US Mid Cap Equity	\$423,323,627	3.46	10.78	-13.32	-13.32	7.06	6.68	8.94	10.28
<i>Russell Midcap</i>			9.18	-17.32	-17.32	5.88	7.10	9.61	10.96
US Small Cap Equity	\$99,719,421	0.81	9.67	-15.18	-15.18	6.64	6.11	9.63	9.51
<i>Russell 2000</i>			6.23	-20.44	-20.44	3.10	4.13	7.90	9.01
US Micro Cap Equity	\$330,985,345	2.70	11.25	-14.81	-14.81	8.67	5.57	8.55	9.60
<i>Russell Microcap</i>			4.72	-21.96	-21.96	4.05	3.69	7.26	8.86
International Equity	\$2,304,073,582	18.81	15.00	-16.87	-16.87	0.71			
<i>MSCI World ex USA IMI</i>			16.04	-15.26	-15.26	1.05			
International Large Cap Equity	\$1,712,029,794	13.97	14.64	-16.19	-16.19	0.04	1.64		
<i>MSCI World ex USA</i>			16.18	-14.29	-14.29	1.27	1.79		
International Small Cap Equity	\$592,043,788	4.83	16.18	-18.62	-18.62	2.37	1.86	6.96	8.33
<i>MSCI World ex USA Small Cap</i>			15.21	-20.59	-20.59	-0.15	0.45	4.90	5.77
Emerging Market Equity	\$1,267,916,877	10.35	10.68	-20.29	-20.29	0.80	-0.49	5.08	2.68
<i>MSCI Emerging Markets IMI</i>			9.50	-19.83	-19.83	-1.82	-1.10	5.16	1.64
Emerging Market Large Cap Equity	\$737,740,284	6.02	9.12	-22.26	-22.26	-3.43	-2.18	4.43	0.53
<i>MSCI Emerging Markets</i>			9.70	-20.09	-20.09	-2.69	-1.40	5.17	1.44
Emerging Market Small Cap Equity	\$326,010,536	2.66	16.18	-17.75	-17.75	8.35	3.52	8.26	
<i>MSCI Emerging Markets Small Cap</i>			8.20	-18.02	-18.02	5.11	1.06	5.38	
Frontier Market Equity	\$204,166,057	1.67	8.13	-13.18	-13.18	2.48	-0.83	3.64	3.62
<i>MSCI Frontier Markets</i>			-0.83	-26.34	-26.34	-3.65	-2.47	2.57	3.23
Liquid Natural Resources	\$325,024,010	2.65	17.25	7.99	7.99				
<i>Policy Benchmark ²</i>			7.30	-16.81	-16.81				

¹ 70% Russell 3000, 30% MSCI ACWI ex USA IMI (net)

² 45% Russell 3000, 20% MSCI ACWI ex USA IMI (net), 25% Bloomberg Barclays US Aggregate, and 10% Bloomberg Barclays Global Aggregate ex U.S.

Market Value	\$2,227,899,982
Assets – % of Portfolio	18.19%

Sub Asset Class	Market Value
US Core Fixed Income	\$1,257,625,378
Emerging Market Debt	\$822,922,421
High Yield	\$128,352,748
Cash/Short Duration	\$18,999,435
Total	\$2,227,899,982



Performance (Net)

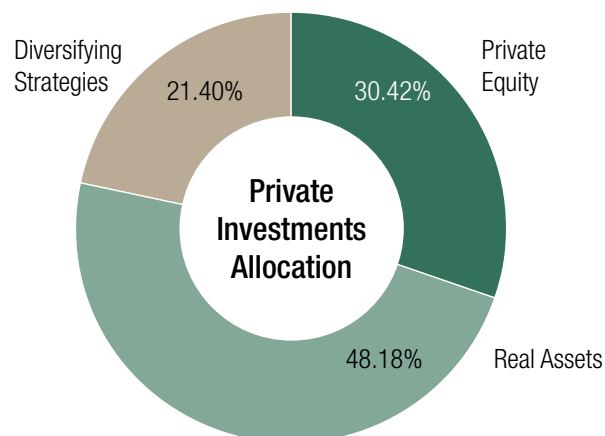
	Market Value	% OF PLAN	QTD	YTD	1 Year	3 Year	5 Year	7 Year	10 Year
Global Fixed Income ex Cash	\$2,208,900,547	18.03	3.69	-12.55	-12.55	-0.79	1.43	2.60	2.33
<i>Global Fixed Income Policy Blend ¹</i>			3.27	-14.64	-14.64	-3.62	-0.85	0.46	-0.01
<i>Bloomberg Barclays Global Aggregate</i>			4.55	-16.25	-16.25	-4.48	-1.66	0.12	-0.44
US Core Fixed Income	\$1,257,625,378	10.27	0.60	-10.96	-10.96	-2.49	0.27	0.94	1.20
<i>Bloomberg Barclays U.S. Aggregate</i>			1.87	-13.01	-13.01	-2.71	0.02	0.89	1.06
Emerging Market Debt	\$822,922,421	6.72	8.48	-16.75	-16.75	-4.33	-0.48	2.97	1.37
<i>JP Morgan EMBI Global Diversified</i>			8.11	-17.78	-17.78	-5.28	-1.31	1.85	1.59
High Yield	\$128,352,748	1.05	4.82	-10.57	-10.57				
<i>Bloomberg Barclays U.S. Corporate High Yield</i>			4.17	-11.19	-11.19				
Cash/Short Duration ²	\$18,999,435	0.16	1.65	3.88	3.88	1.97	2.19	1.62	1.18
<i>91 Day Treasury Bill</i>			0.85	1.47	1.47	0.73	1.27	1.07	0.77

¹ 70% Bloomberg Barclays U.S. Aggregate, 30% Bloomberg Barclays Global Aggregate ex U.S.

² Cash/Short Duration market value reflects collateral for futures positions

Market Value	\$3,439,636,658
Assets – % of Portfolio	28.08%

Sub Asset Class	Market Value
Private Equity	\$1,046,327,716
Real Assets	\$1,657,528,451
Diversifying Strategies	\$736,140,128
Currency Hedge	(\$359,638)
Total	\$3,439,636,658



Performance (Net)

	Market Value	% OF PLAN	QTD	YTD	1 Year	3 Year	5 Year	7 Year	10 Year
Private Investments	\$3,439,636,658	28.08	0.40	4.41	4.41	12.72			
<i>Public Markets</i>			9.57	-14.91	-14.91	2.92			
<i>Policy Benchmark¹</i>			7.30	-16.81	-16.81	2.26			
Private Equity	\$1,046,327,716	8.54	-0.86	10.66	10.66	25.45	20.77	16.80	16.14
<i>Private Equity Blend²</i>			11.12	-20.71	-20.71	1.24	2.18	6.34	7.78
Real Assets	\$1,657,528,451	13.53	2.27	3.60	3.60	10.24	9.37	9.64	7.46
<i>Real Assets Blend³</i>			0.73	9.45	9.45	7.92	5.80	6.19	4.84
Diversified Real Assets	\$1,328,038,163	10.84	1.71	1.29	1.29	10.30	8.52		
<i>Real Assets Blend</i>			0.73	9.45	9.45	7.92	5.80		
Real Estate	\$328,537,468	2.68	4.65	14.59	14.59	12.39	10.96	11.92	12.62
<i>Real Estate Blend⁴</i>			-4.97	7.47	7.47	9.93	8.99	8.84	8.92
Timber	\$36,654,976	0.30	0.00	-1.53	-1.53	8.54	8.09	9.50	7.73
<i>S&P Global Timber & Forestry Index Net</i>			10.93	-19.40	-19.40	4.22	2.12	7.75	6.68
Infrastructure	\$366,629,195	2.99	4.01	19.67	19.67	18.03	11.37	9.52	8.39
<i>Private Infrastructure Blend⁵</i>			6.97	-14.60	-14.60	-0.53	2.13	3.05	3.49
Commodities	\$305,073,340	2.49	1.15	-20.23	-20.23	1.36	1.50	7.76	1.25
<i>Bloomberg Commodity Index Total Return</i>			2.22	16.09	16.09	12.65	6.44	6.49	-1.28
Agriculture & Farmland	\$409,258,091	3.34	1.72	0.45	0.45	11.63	15.99	11.81	
<i>S&P Global Agribusiness Equity Index TR</i>			8.01	2.15	2.15	11.49	7.81	9.92	
Diversifying Strategies	\$736,140,128	6.01	-0.08	-1.76	-1.76	6.38	4.96	5.27	5.99
<i>Diversifying Strategies Blend⁶</i>			5.49	-15.82	-15.82	-0.33	1.95	2.92	3.54

¹ 45% Russell 3000, 20% MSCI ACWI ex USA IMI (net), 25% Bloomberg Barclays US Aggregate, and 10% Bloomberg Barclays Global Aggregate ex U.S.

² 50% Russell 2000, 50% MSCI EAFE Small Cap (net)

³ 100% CPI + 3%

⁴ 100% NCREIF ODCE Value Weighted

⁵ 50% DJ Brookfield Global Infrastructure Index, 50% Bloomberg Barclays Global Inflation-Linked

⁶ 25% Russell 3000, 10% MSCI ACWI ex U.S. IMI (net), 45% Bloomberg Barclays U.S. Aggregate, 20% Bloomberg Barclays Global Aggregate ex U.S.

PDA Funds

Program	Assets	Participants	Average Account Size	Weighted Average Fee	Default Option
DC/Hybrid Plan	\$1,063,313,151	33,145	\$32,081	0.38%	Retirement Strategies
HCSP	\$367,296,938	36,464	\$10,073	0.37%	Retirement Strategies
457 Program	\$300,596,446	10,893	\$27,595	0.39%	Retirement Strategies
MERS IRA	\$9,566,226	880	\$10,871	0.39%	Retirement Strategies
TOTAL	\$1,740,772,760	81,382	\$21,390		

Institutional Funds

Program	Assets	Municipalities	Average Account Size	Weighted Average Fee
RHFV	\$1,323,620,506	322	\$4,110,623	0.46%
ISP	\$50,403,235	5	\$10,080,647	0.46%
TOTAL	\$1,374,023,741	327	\$4,201,907	

Investment Allocations

	PDA	Institutional Funds	Total
Retirement Strategies	\$1,278,870,226		\$1,278,870,226
Total Market Fund	\$41,128,353	\$1,373,021,055	\$1,414,149,408
Asset Allocation Portfolios	\$37,349,770	\$184,087	\$37,533,857
Asset Specific funds	\$354,472,285	\$818,599	\$355,290,884
Self-directed Brokerage	\$8,822,084		\$8,822,084
Other	\$20,130,043		\$20,130,043
TOTAL	\$1,740,772,760	\$1,374,023,741	\$3,114,796,501

Program Highlights

- Added default option for RHFV plan (Total Market Portfolio)
- RHFV full plan reset (completed June 2021)
- Completed Record Keeper RFP by continuing relationship with Alerus Retirement Services
- Entered into relationship with Vergence Institutional Partners to review plans

Future Research

- RFP for Target Date Funds Provider (Q1 2023)
- Review investment menu and design (Q1 2023)
- RFP for Stable Value Fund (Q1 2023)
- Review options for Managed Account Solution

Retirement Strategies for PDA Accounts

MERS Retirement Strategies	Assets	Expense Ratio	1 Year	3 Year	5 Year	10 Year
Retirement Income Fund	\$20,532,203	0.38%	-10.86	0.82	2.21	-10.86
MERS 2010 Retirement Strategy	\$22,800,959	0.37%	-11.29	0.99	2.39	-11.29
MERS 2015 Retirement Strategy	\$74,045,067	0.38%	-12.31	1.55	2.92	-12.31
MERS 2020 Retirement Strategy	\$89,479,681	0.39%	-13.49	1.92	3.30	-13.49
MERS 2025 Retirement Strategy	\$196,560,321	0.39%	-14.31	2.19	3.54	-14.31
MERS 2030 Retirement Strategy	\$167,869,981	0.39%	-15.06	2.25	3.73	-15.06
MERS 2035 Retirement Strategy	\$168,627,422	0.40%	-15.72	2.40	3.93	-15.72
MERS 2040 Retirement Strategy	\$155,410,155	0.40%	-16.24	2.71	4.17	-16.24
MERS 2045 Retirement Strategy	\$127,793,705	0.40%	-16.69	3.14	4.49	-16.69
MERS 2050 Retirement Strategy	\$108,478,884	0.40%	-16.90	3.16	4.51	-16.90
MERS 2055 Retirement Strategy	\$84,411,164	0.40%	-16.88	3.21	4.53	-16.88
MERS 2060 Retirement Strategy	\$53,871,461	0.40%	-16.85	3.26	4.57	-16.85
MERS 2065 Retirement Strategy	\$8,989,223	0.40%	-16.64			
TOTAL	\$1,278,870,226					

Premium Select Options – Portfolios Built for You

MERS Portfolio Options	Assets	Expense Ratio	1 Year	3 Year	5 Year	10 Year
MERS Total Market Portfolio	\$1,414,149,408	0.56%	-10.67	4.71	4.55	6.44
<i>MERS Policy Benchmark</i>			-16.81	2.26	4.11	5.70
MERS Global Stock Portfolio (100/0)	\$13,720,163	0.34%	-17.98	3.13	4.34	
<i>Blended Benchmark</i>			-18.36	4.00	5.23	
MERS Established Market Portfolio (60/40)	\$12,105,711	0.34%	-14.91	1.07	2.86	5.67
<i>Blended Benchmark</i>			-16.02	2.03	4.01	6.24
MERS Diversified Bond Portfolio (0/100)	\$11,707,983	0.33%	-10.69	-2.98	-0.24	0.83
<i>Bloomberg U.S. Aggregate Bond Index</i>			-13.01	-2.71	0.02	1.06
TOTAL	\$1,451,683,265					

Premium Select Options – Funds to Build Your Own Portfolio

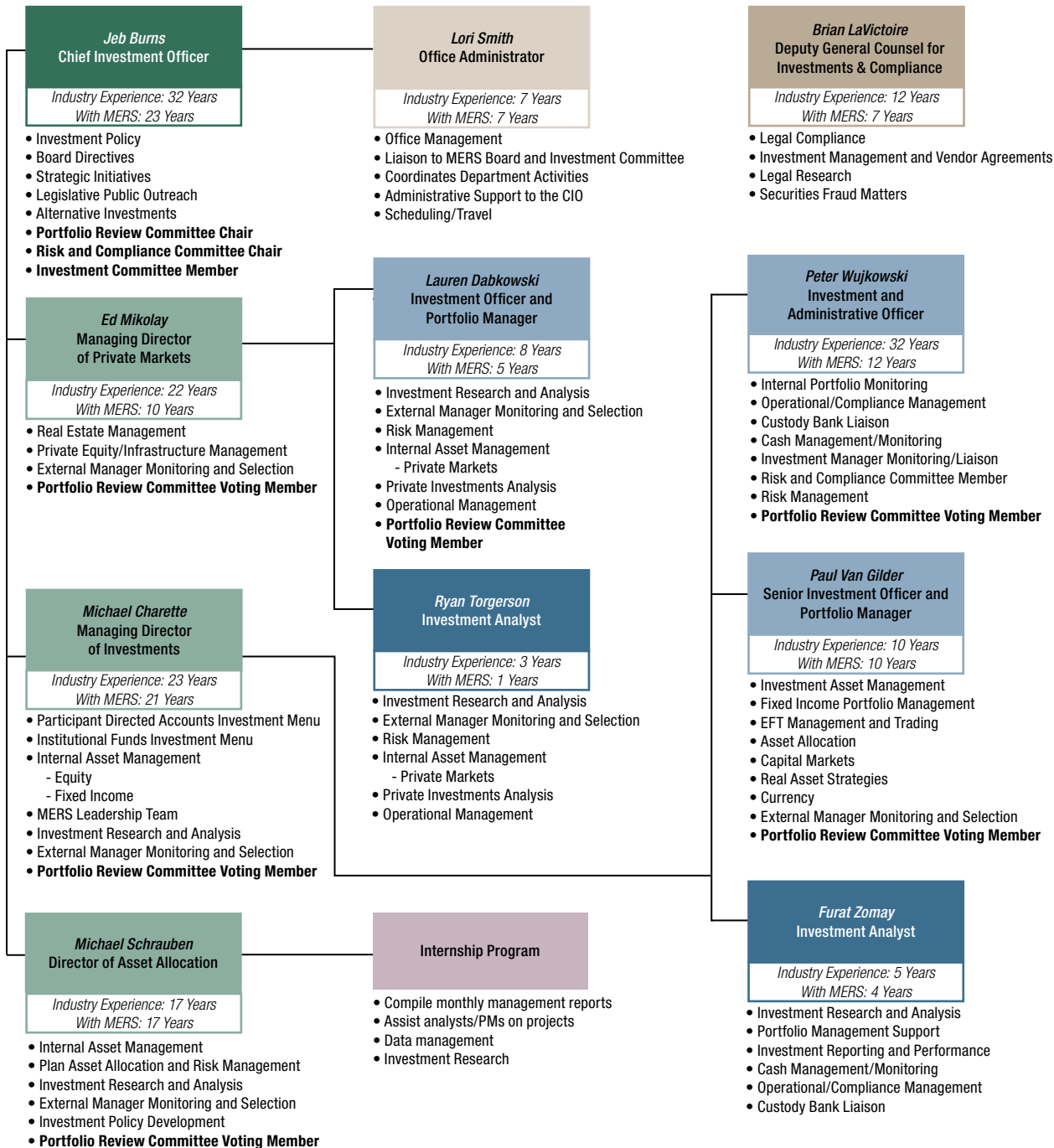
MERS Portfolio Options	Assets	Expense Ratio	1 Year	3 Year	5 Year	10 Year
Large Cap Stock Index Fund	\$167,039,681	0.33%	-18.34	7.23	9.06	12.15
<i>S&P 500 Index</i>			-18.11	7.66	9.42	12.56
Mid Cap Stock Index	\$36,643,810	0.33%	-13.34	6.82	6.42	10.51
<i>S&P 400 Index</i>			-13.06	7.23	6.71	10.78
Small Cap Stock Index	\$21,354,169	0.33%	-16.30	5.90	5.91	
<i>S&P 600 Index</i>			-16.10	5.80	5.88	
International Stock Index	\$14,933,930	0.36%	-15.49	0.01	0.79	3.96
<i>MSCI EAFE Net Dividend Index</i>			-14.45	0.87	1.54	4.67
Emerging Market Stock	\$3,922,578	0.45%	-21.78	-2.31	-2.18	
<i>Blended Benchmark</i>			-20.09	-2.69	-1.48	
Real Estate Stock	\$5,819,933	0.38%	-26.41	-0.67	3.18	6.18
<i>Dow Jones U.S. Select REIT Index</i>			-25.96	-1.37	2.50	5.74
Bond Index	\$16,714,175	0.35%	-13.37	-2.48	-0.08	0.72
<i>Bloomberg U.S. Aggregate Bond Index</i>			-13.01	-2.71	0.02	1.06
High Yield Bond	\$5,299,975	0.48%	-12.00	-1.26	1.36	3.13
<i>Bloomberg U.S. High Yield Net Return Index</i>			-13.60	-0.70	1.49	3.61
Short-Term Income	\$18,977,608	0.33%	-3.64	0.01	0.91	0.60
<i>Bloomberg U.S. Treasury: 1-3 Year</i>			-3.82	-0.46	0.74	0.65
Stable Value	\$64,585,025	0.58%	1.69	1.93	1.99	1.93
<i>ICE BofA US 3 Month Treasury Bill Index G001</i>			1.47	0.73	1.27	0.77
TOTAL	\$355,290,884					

APPENDIX

Investment Decision Making Roles and Responsibilities

MERS BOARD	<ul style="list-style-type: none"> • Is the System's fiduciary; • Appoints public members with investment expertise to serve on the Investment Committee; • Appoints one Board member for two years to observe Investment Committee meetings (observer does not have voting privileges); • Monitors activity of the Investment Committee; • Approves investment governance documents (Investment Guidelines, Defined Benefit Investment Policy Statement, and Participant Directed Accounts & Institutional Funds Investment Policy Statement); • Sets the Portfolio's asset class allocation ranges; • Establishes the long-term actuarial investment return assumption; and • Approves the Portfolio's Policy Benchmark.
INVESTMENT COMMITTEE	<ul style="list-style-type: none"> • Contains three voting Board members, including two public members with investment expertise; • Includes CEO and CIO (both non-voting members); • Serves as the Board's investment policy development arm; • Monitors investment management activity and policy recommendations developed by the Office of Investments; • Approves PRC investment recommendations to hire/terminate investment managers; • Approves investments above PRC discretionary size limits; • Provides advice on investment activities including: industry best practices, fiduciary duties, and Portfolio risk expectations of the Board; and • Monitors Portfolio risk, asset allocation, and investment performance.
PORTFOLIO REVIEW COMMITTEE	<ul style="list-style-type: none"> • Office of Investment's decision-making body chaired by the CIO and consisting of Office staff; • Voting members are appointed by the CIO; • Reports decisions and provides recommendations to the Investment Committee; • Determines and implements the Portfolio's asset allocation within Board-approved allocation ranges; • Approves and implements investments up to discretionary size limits provided in this Policy; and • Develops and maintains PRC operating guidelines.
OFFICE OF INVESTMENTS	<ul style="list-style-type: none"> • Carries out all investment activity on behalf of the System; including policy documentation for Board approval; • Hires/terminates investment consultants, vendors, and the custodial bank with CEO approval; • Provides a quarterly report on the Portfolio's investment activities, allocation, and performance; • Reports any material changes within the Portfolio to the Investment Committee and the Board; • Internally manages a portion of the Portfolio across both Public and Private Investments; • Monitors performance and determines courses of action for external investment managers; • Monitors compliance with statutory, regulatory, and policy limitations; • Trade execution, settlement, and daily cash movements as needed; and • Conducts its affairs in a manner that reflects the highest standards of ethical conduct, and complies with CFA Institute Code of Ethics and Standards of Professional Conduct (Appendix).
MERS' INVESTMENT MANAGEMENT RISK AND COMPLIANCE COMMITTEE	<ul style="list-style-type: none"> • Provides investment and compliance oversight outside of the Office of Investments; • Monitors operational, market, and regulatory issues that may materially impact portfolio performance or put MERS at risk of regulatory sanctions; • Promotes cross-office discussion regarding varying potential risks including prevention and solutions; and • Consists of CEO, CIO, Financial Officer, Deputy General Counsel for Investments and Compliance, Internal Auditor, Investment and Administrative Officer, and Analysts from the Office of Investments.

Organizational Chart



Guiding Principles

- Collaborative team environment
- Robust collegial debate and cognitive diversity is critical
- Progressive and willing to deviate from conventional wisdom
- Commitment to continuous improvement and efficiency gains
- Relentless pursuit of fiduciary excellence

This publication is designed to provide descriptive information only. Investors should research all possible investment choices. Please make independent investment decisions carefully and seek the assistance of independent experts where appropriate. We recommend investors define their goals, risk tolerance, time horizon, and investment objectives to determine whether this fund is appropriate for you.

Investors should read the fund summary sheets and carefully consider the investment objective, risks, and fees of the fund before investing. The fund summary sheets may be found on the MERS website at www.mersofmich.com. To request the fund summary sheets, please contact the MERS Service Center at 800.767.6377.

This publication contains a summary description of MERS benefits, policies or procedures. MERS has made every effort to ensure that the information provided is accurate and up to date as of 12/31/2022. If this publication conflicts with the relevant provisions of the Plan Document, the Plan Document Controls. MERS, as a governmental plan, is exempted by state and federal law from registration with the SEC. However, it employs registered investment advisors to manage the trust fund in compliance with Michigan Public Employee Retirement System Investment Act. Past performance is not a guarantee of future returns. Please make independent investment decisions carefully and seek the assistance of independent experts when appropriate.

