

QUARTER ENDING SEPTEMBER 30, 2022
INVESTMENT PERFORMANCE
ANALYSIS

EASTERN MICHIGAN BOARD OF
REGENTS



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NOVEMBER 8, 2022



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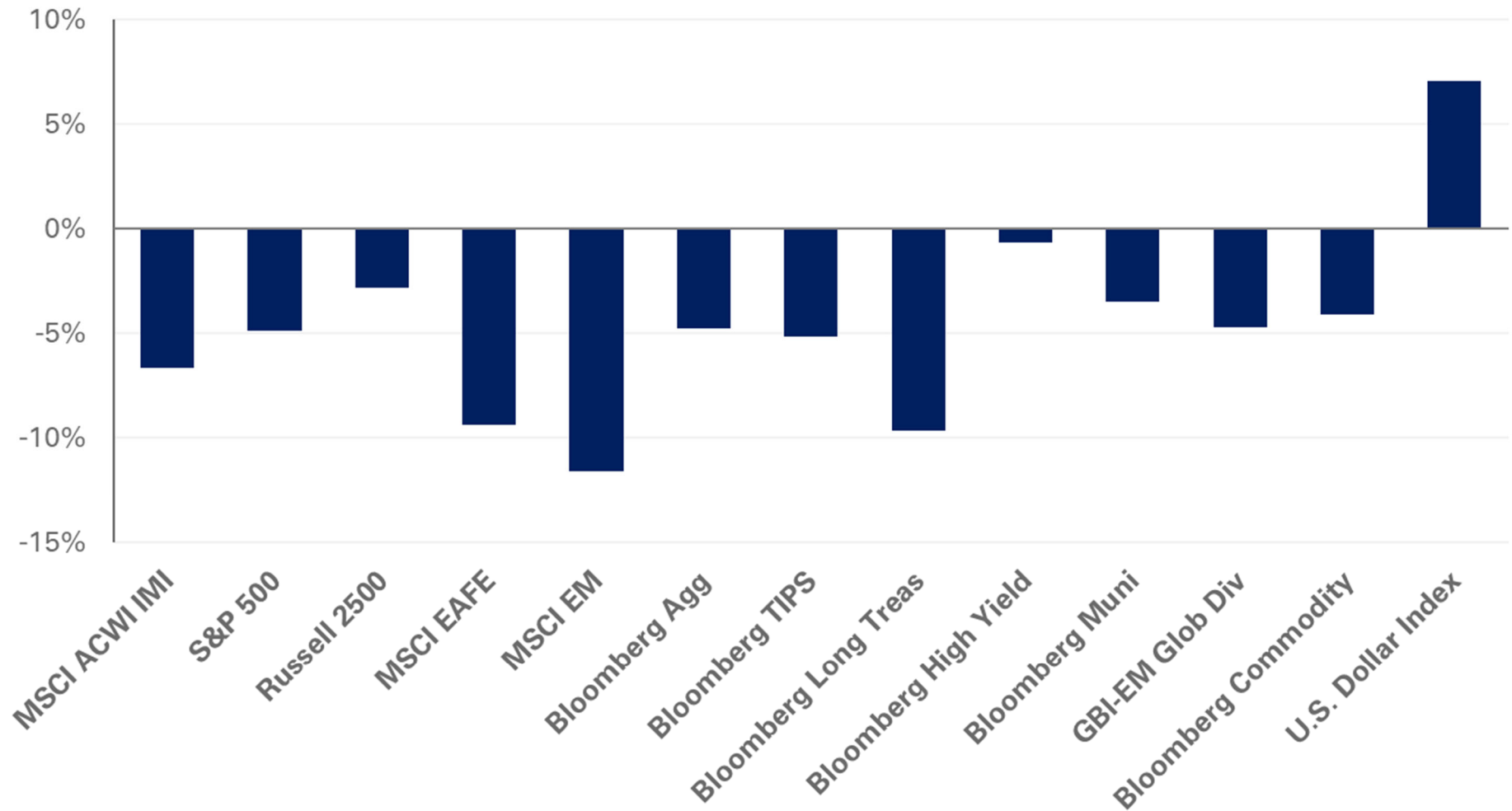
Q3 2022 REVIEW



PROPRIETARY & CONFIDENTIAL

GLOBAL ASSETS BROADLY DECLINED

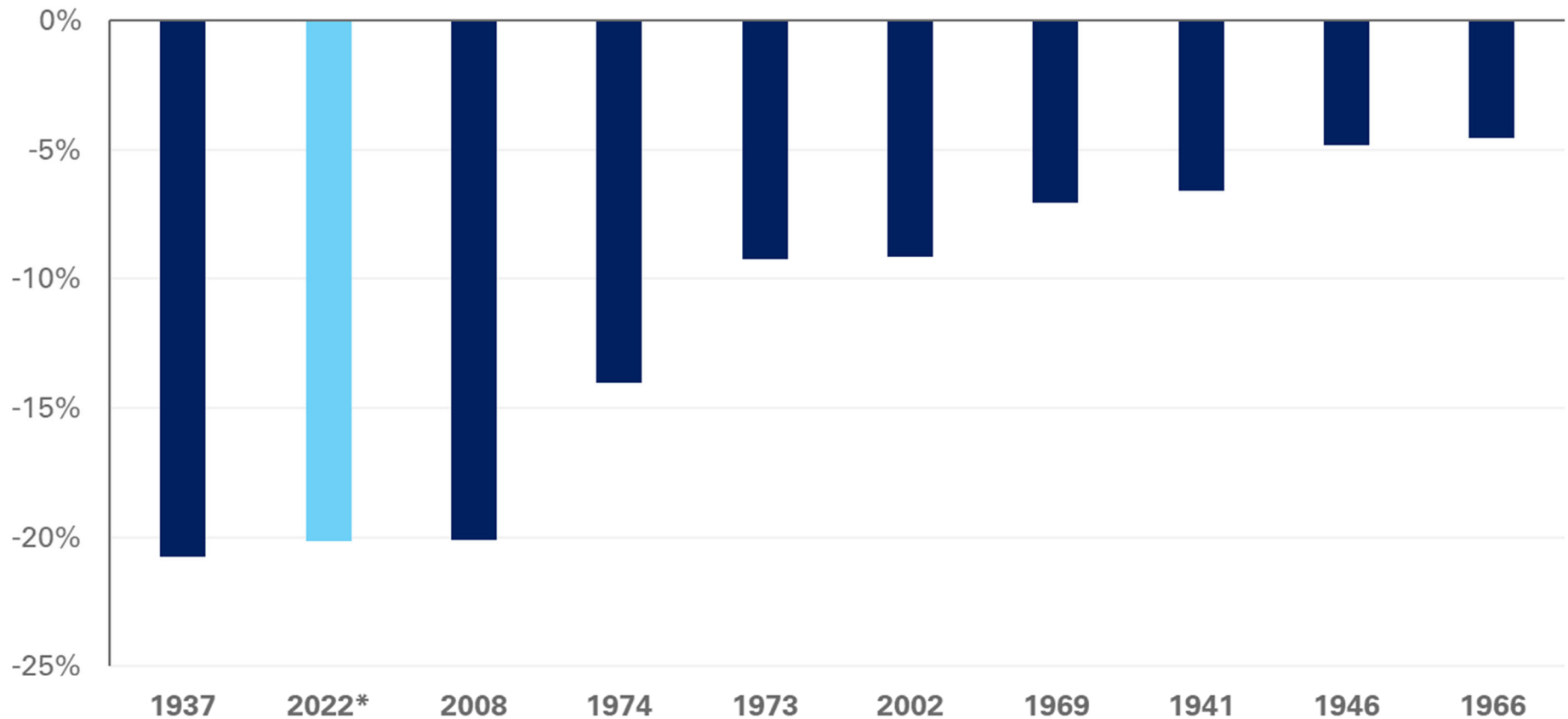
QUARTERLY TOTAL RETURNS



Source: MSCI, S&P, Russell, MSCI, Bloomberg, JPM, FactSet

60/40 PORTFOLIO ON TRACK FOR WORST YEAR

WORST ANNUAL RETURNS: 60/40 PORTFOLIO

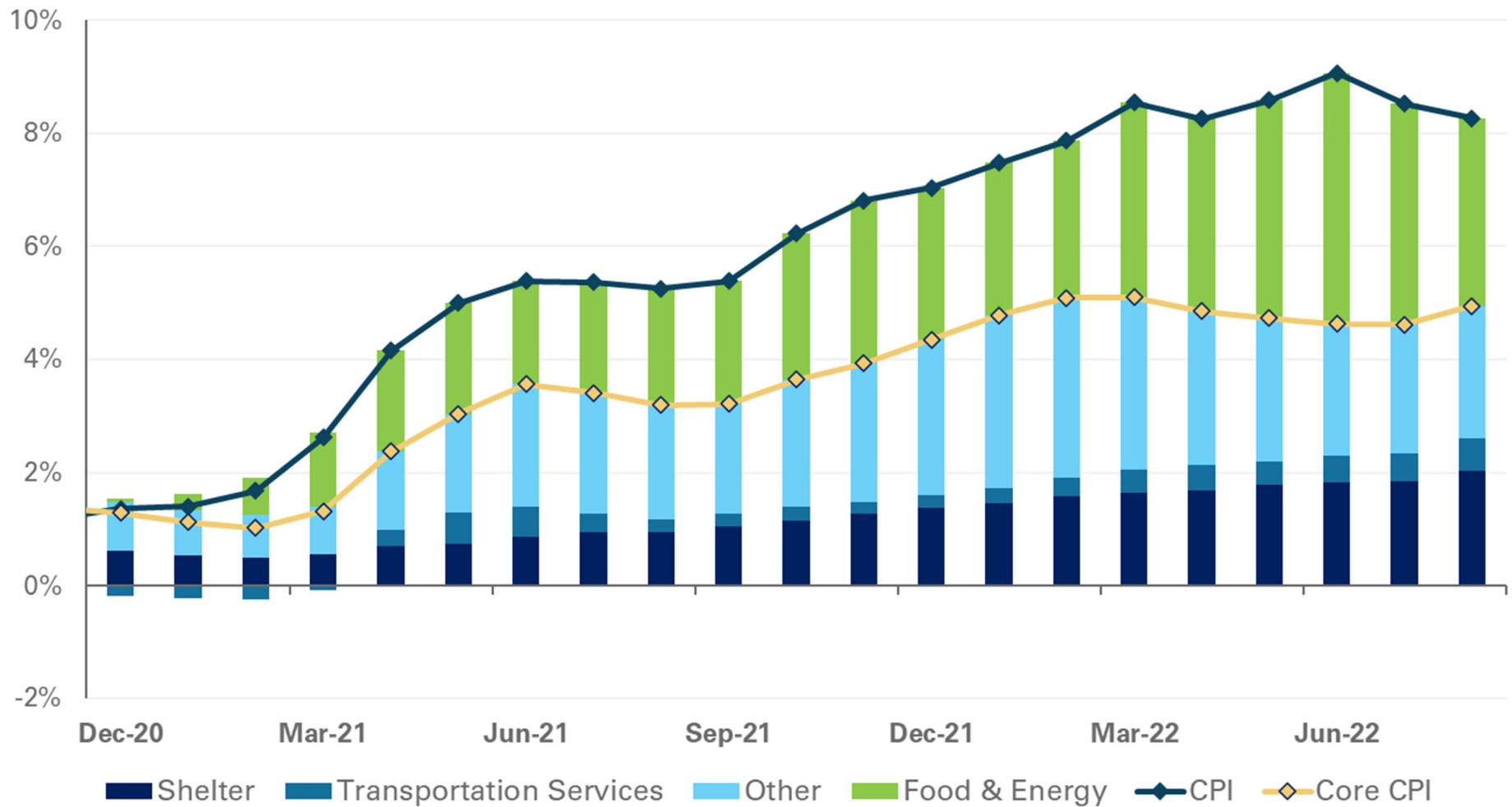


60/40 Portfolio represents 60% S&P 500 and 40% U.S. Aggregate Bonds (post 1975) and 40% Treasury (prior to 1974)
Data calculated from 12/31/1936; 2022 represents returns through the first nine months of the year
Source: S&P, Bloomberg, FactSet



CORE INFLATION INCREASED DURING THE QUARTER

ANNUAL U.S. CPI-U CHANGES

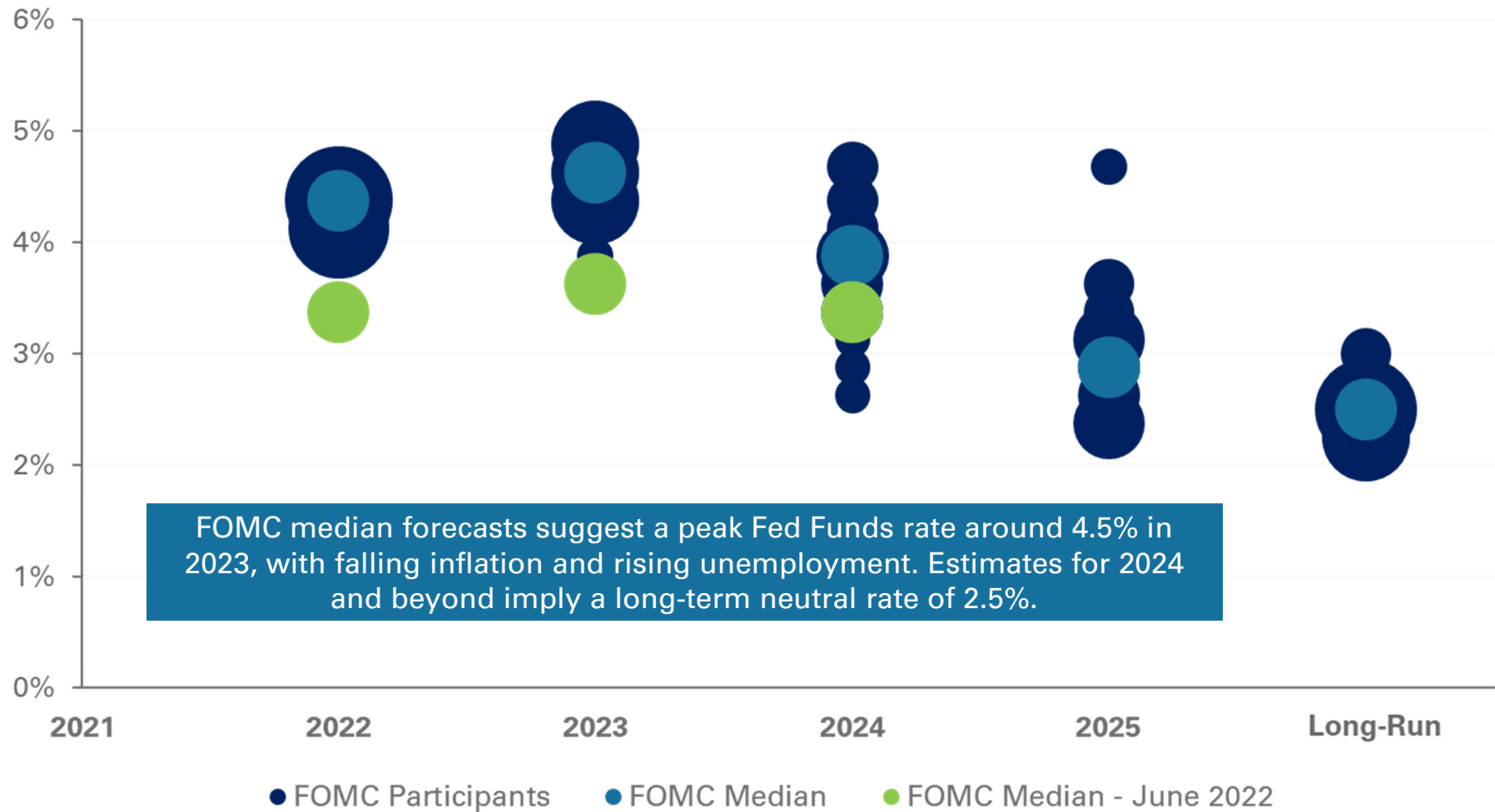


Source: Department of Labor, FactSet



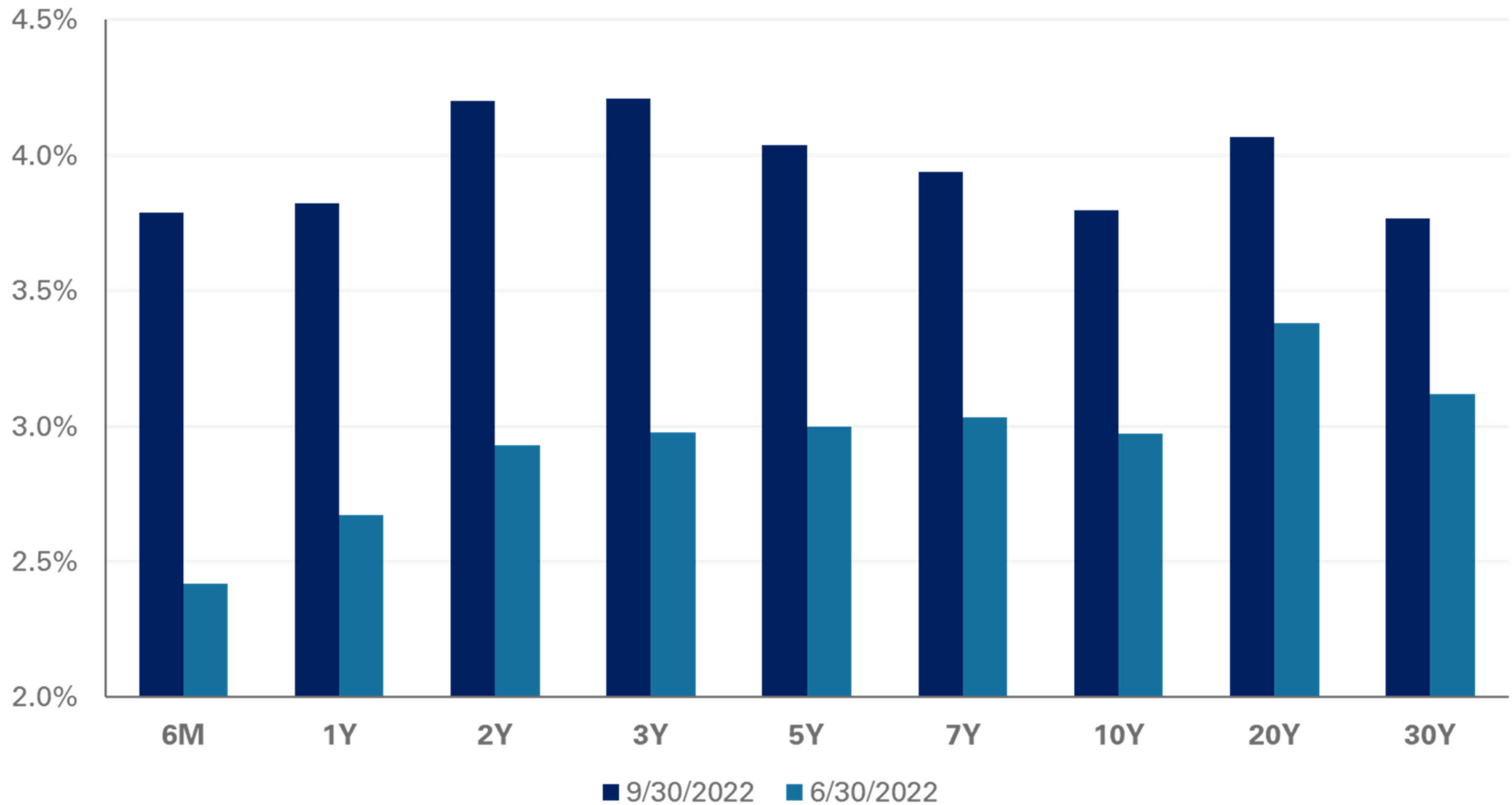
FOMC PROJECTS LOWER RATES IN 2024

FOMC DOT PLOT PROJECTIONS



NOMINAL TREASURY YIELDS SHIFTED HIGHER

U.S. TREASURY YIELD CURVE



TREASURY YIELDS INVERTED

10Y-2Y TREASURY YIELD SPREAD



Source: FactSet

THE DOLLAR STRENGTHENED

THE U.S. DOLLAR INDEX



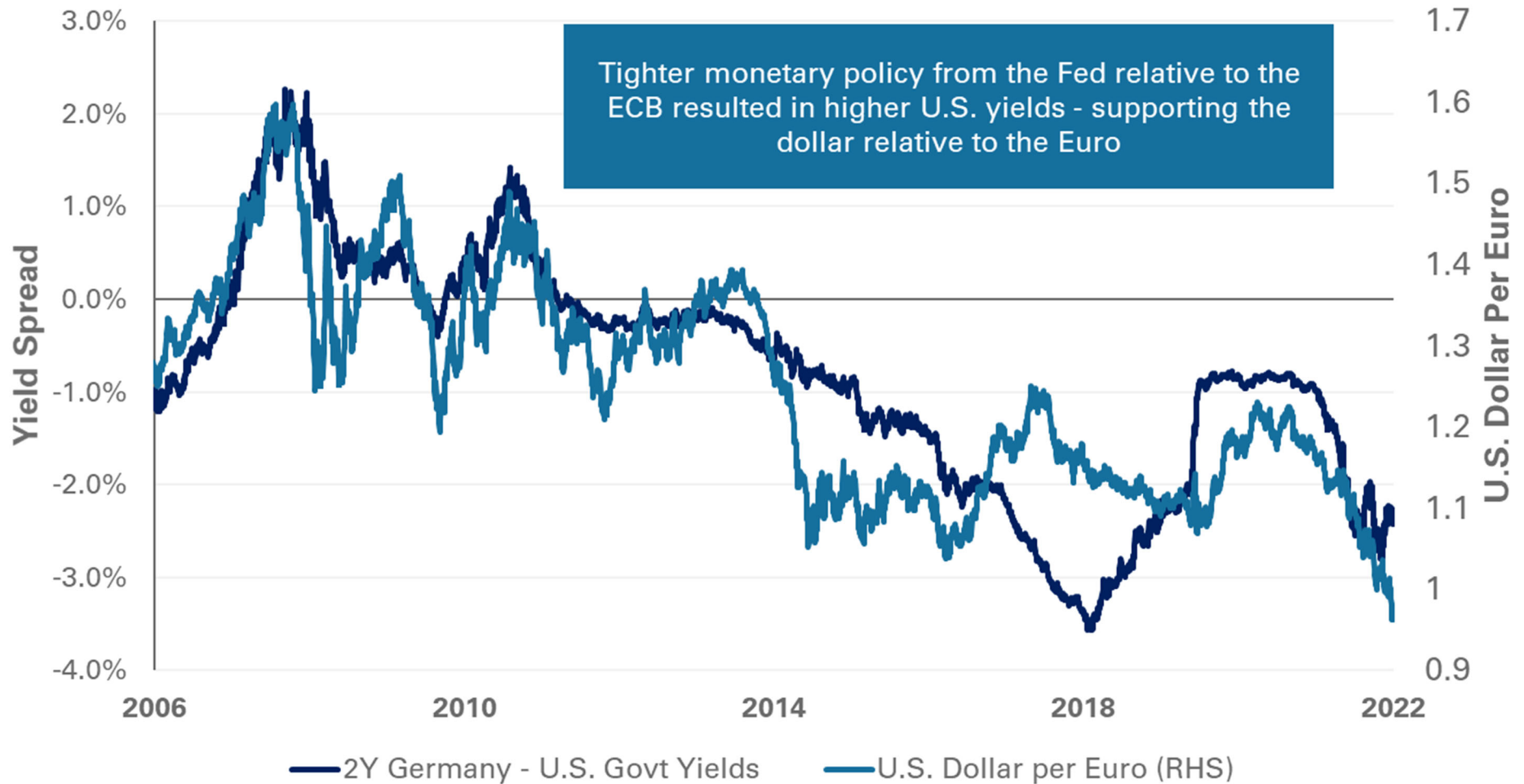
U.S. Dollar Index represents the value of the U.S. Dollar relative to the currencies of major trade partners. The Euro, Japanese Yen, Pound Sterling, and Canadian Dollar represent the largest weights within the Index.

Source: FactSet



HIGH RELATIVE YIELDS BENEFIT THE DOLLAR

GERMANY VERSUS U.S. GOVERNMENT YIELD DIFFERENTIAL



Source: FactSet

CURRENCY RETURNS MOVE OVER LONG CYCLES

ANNUALIZED ROLLING 10 YEAR CURRENCY RETURNS



Source: MSCI, FactSet

PORTFOLIO POSITIONING VIEWS

Maintain an **underweight equity posture** due to concerns related to the path of corporate earnings and stagflation growth dynamics

Our **conviction remains high** regarding the addition of value exposure to U.S. large-cap equity and the use of active global equity strategies

Despite the challenging environment, **we encourage maintaining adequate portfolio duration** with safe-haven fixed income exposure

Look to **build exposure to short-term investment grade credit** as higher yields boost our outlook relative to risk assets

STRATEGIC ASSET ALLOCATION OUTLOOK

We have transitioned to an investment regime characterized by **entrenched inflation** and significant **economic growth headwinds**

Higher interest rates lift public credit return assumptions and support larger strategic targets to investment grade fixed income

Evaluate the scope of strategic currency hedging programs, as the strength of the dollar has provided outsized gains for currency hedges

The **emergence of stagflationary trends** challenges the behavioral biases investors have been conditioned to expect over the last decade

Q3 2022 PERFORMANCE REVIEW



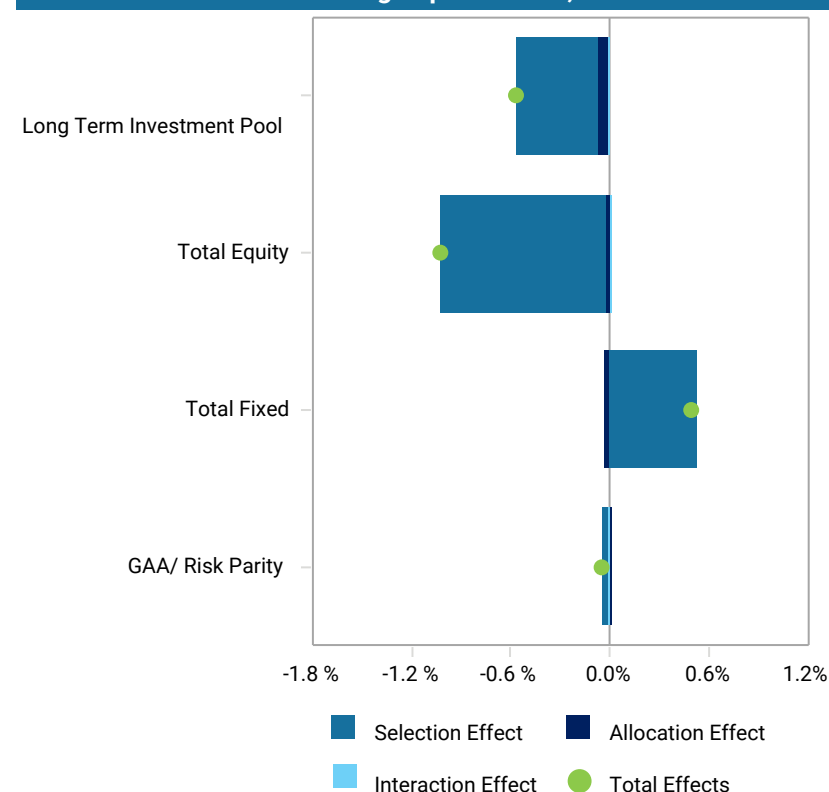
PROPRIETARY & CONFIDENTIAL

LONG TERM POOL PERFORMANCE SUMMARY

	Market Value (\$)	3 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)
Long Term Investment Pool	7,991,893	-5.6	-20.3	-17.9	-0.7	1.1
<i>Long Term Balanced Index</i>		-5.7	-20.3	-17.3	0.9	2.3
<i>Long Term Allocation Index</i>		-5.7	-20.0	-17.4	2.5	3.4

Asset Allocation vs. Target				
	Current (\$)	Current (%)	Policy (%)	Differences (%)
■ Total Equity	4,075,436	51.0	54.0	-3.0
■ Total Fixed	3,430,677	42.9	40.0	2.9
■ GAA/ Risk Parity	485,780	6.1	6.0	0.1
Long Term Investment Pool	7,991,893	100.0	100.0	0.0

Attribution Effects 1 Year Ending September 30, 2022



Composite Performance

- The Total Composite was down -0.4% for Q3 but outperformed its allocation index
- While the market has continued to see increased volatility during Q3, the Long Term Pool was able to keep up with its respective benchmarks

Allocation Index

- The tilt into value equity provided downside protection as we witnessed equities face a sell-off for a third straight quarter

Active Management

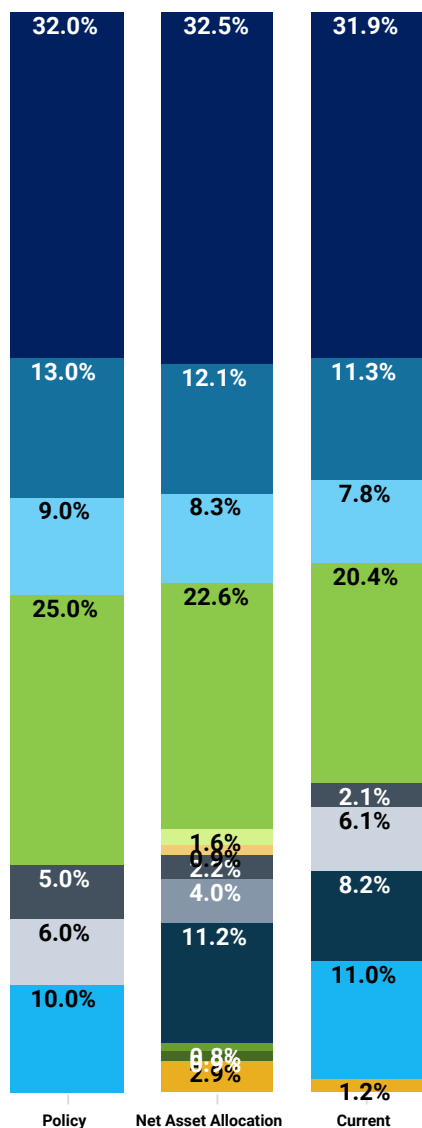
- MFS Institutional, an active EAFE equity manager, had excess returns of 70bps against the MSCI EAFE Index over the quarter
- Blackrock Strategic Income Opportunities (SIO), an active Absolute Return fixed income manager, has been persistent during the YTD sell-off, leading the fixed income composite to outperform the Bloomberg Aggregate Bond Index by 2.5%

Long Term Balanced Index: (54% - MSCI ACWI)(30% - Bloomberg Aggregate)(5% - Bloomberg US TIPS TR) (5% - Bloomberg US Treasury TR)(6% - PIMCO All Asset Index) as of 3/1/2021.

Long Term Allocation Index: Used to measure the value add from active management. Calculated as the asset weight from the prior month end multiplied by the specified market index.

LONG TERM ASSET ALLOCATION VS. POLICY

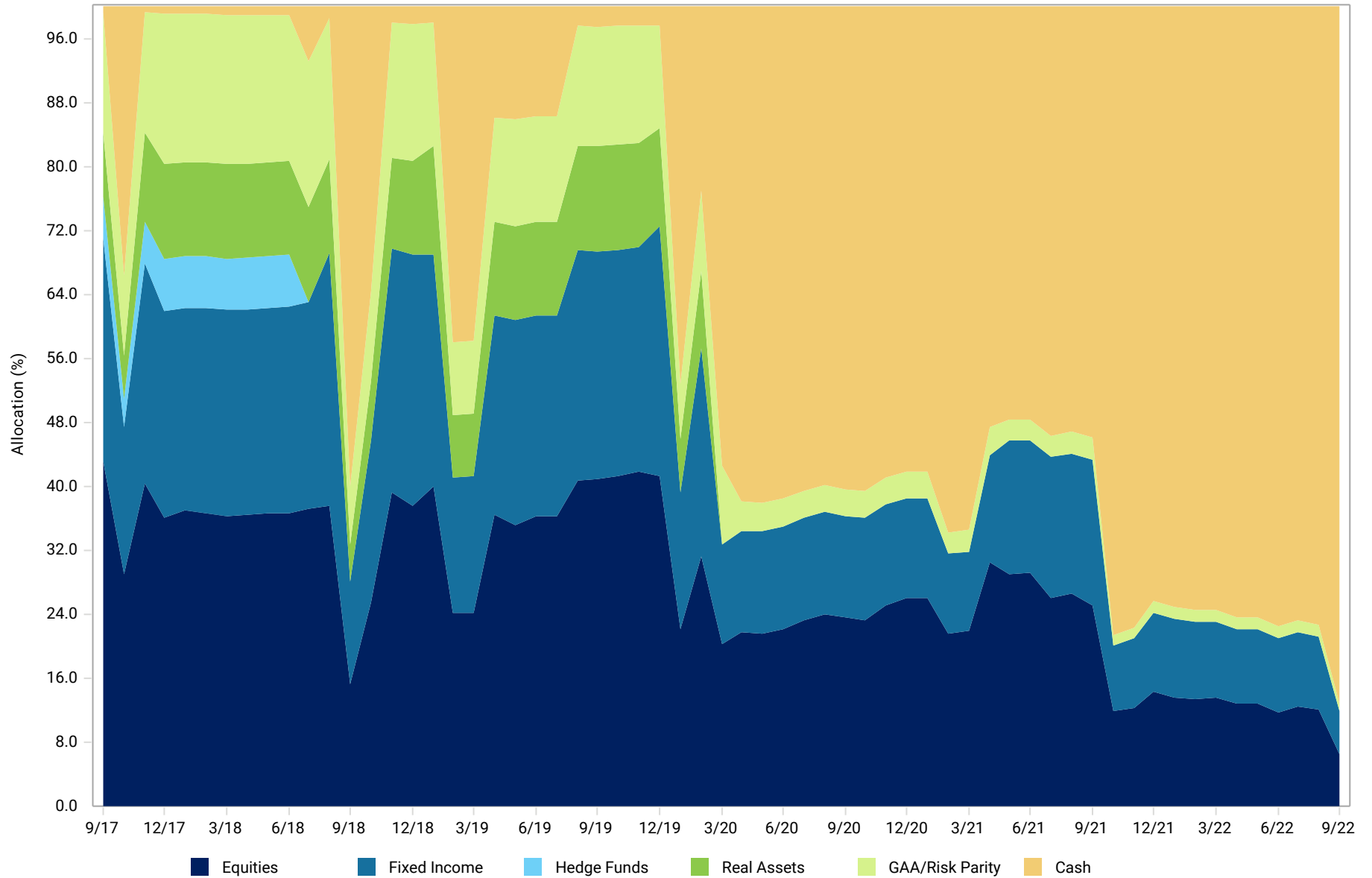
Asset Allocation vs. Target



	Current (\$)	Policy (%)	Current (%)	Net Asset Allocation
Domestic Equity	2,548,275	32.0	31.9	32.5
International Equity	905,462	13.0	11.3	12.1
Emerging Markets Equity	621,699	9.0	7.8	8.3
Core Fixed Income	1,629,825	25.0	20.4	22.6
High Yield	-	0.0	0.0	1.6
Emerging Market Debt	-	0.0	0.0	0.9
TIPS	166,918	5.0	2.1	2.2
Non-U.S. Fixed Income	-	0.0	0.0	4.0
GAA/Risk Parity	485,780	6.0	6.1	0.0
Treasury	652,256	0.0	8.2	11.2
Absolute Return	882,971	10.0	11.0	0.0
Hedge Funds	-	0.0	0.0	0.8
Real Assets	-	0.0	0.0	0.9
Cash	98,707	0.0	1.2	2.9
Total	7,991,893	100.0	100.0	100.0

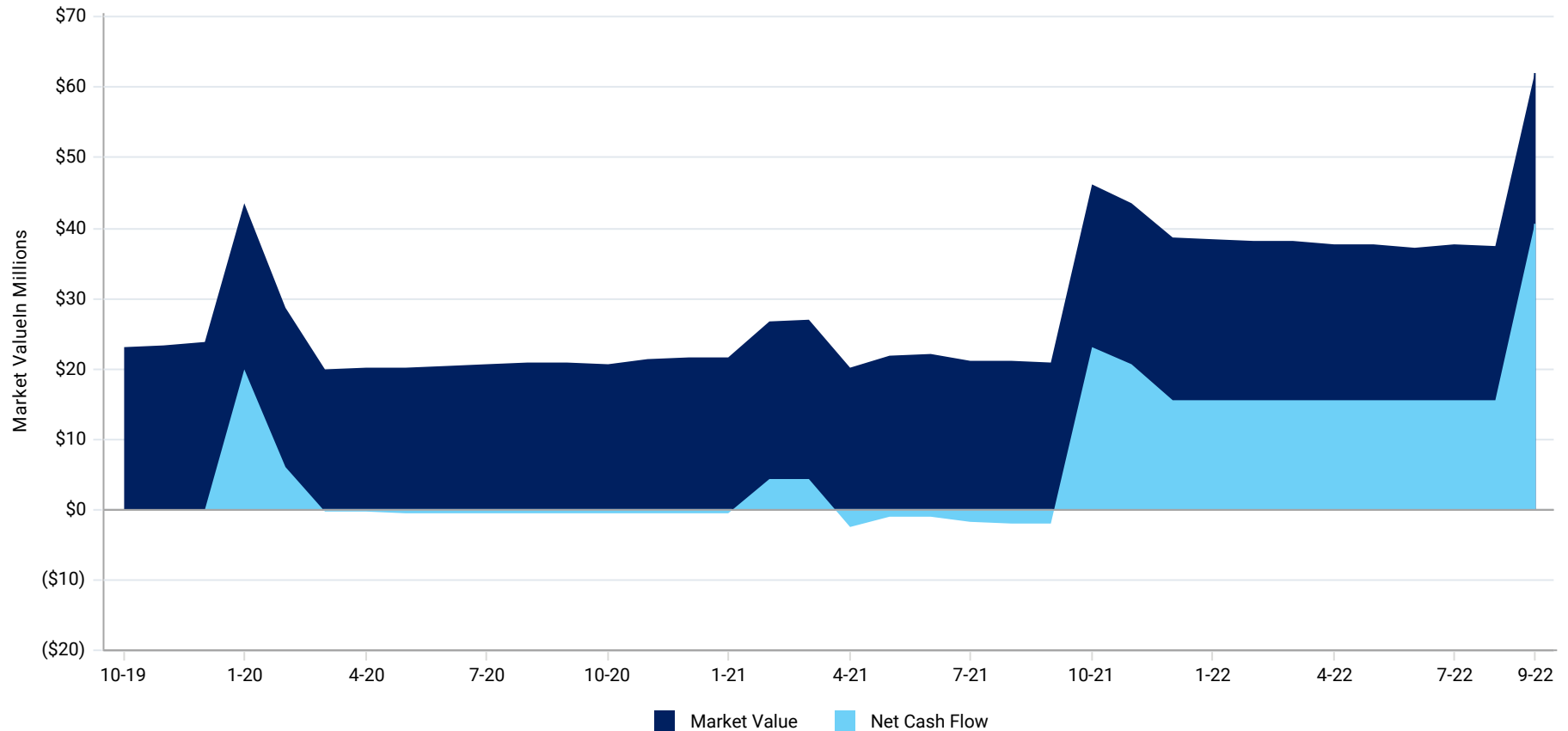
The "Net Asset Allocation" analysis disaggregates the global asset allocation and the absolute return managers in order to get a better sense of the true exposures across the portfolio.

TOTAL FUND ASSET ALLOCATION HISTORY



ASSET GROWTH SUMMARY

3 Years Ending September 30, 2022



	Last Three Months	Year To Date	1 Year	3 Years
Beginning Market Value	37,273,075	38,778,683	20,987,321	22,750,224
Net Cash Flow	24,995,199	24,987,880	42,483,579	40,625,930
Net Investment Change	-323,519	-1,821,808	-1,526,144	-1,431,399
Ending Market Value	61,944,755	61,944,755	61,944,755	61,944,755
Net Change	24,671,680	23,166,072	40,957,434	39,194,531

TOTAL FUND SUMMARY



PROPRIETARY & CONFIDENTIAL

TOTAL FUND PERFORMANCE DETAIL

	Allocation		Performance (%)							
	Market Value (\$)	% of Portfolio	3 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Board of Regents Total Composite	61,944,755	100.0	-0.4	-4.3	-3.3	0.3	1.7	2.8	4.1	Apr-09
Allocation Index			-0.9	-4.7	-3.4	2.4	3.6	-	-	
Short Term Investment Pool	53,952,862	87.1	0.4	0.5	0.6	0.5	0.7	0.4	0.3	Apr-09
90 Day U.S. Treasury Bill			0.5	0.6	0.6	0.6	1.1	0.7	0.5	
Northern Inst Govt Select MMKT	53,952,862	87.1	0.4	0.5	0.6	0.3	0.4	0.2	0.2	Nov-09
90 Day U.S. Treasury Bill			0.5	0.6	0.6	0.6	1.1	0.7	0.6	
Bank of Ann Arbor Trust Cash		0.0	0.0	0.0	0.0	0.2	0.7	0.3	0.3	Nov-09
90 Day U.S. Treasury Bill			0.5	0.6	0.6	0.6	1.1	0.7	0.6	
Long Term Investment Pool	7,991,893	12.9	-5.6 (76)	-20.3 (61)	-17.9 (72)	-0.7 (95)	1.1 (95)	3.3 (89)	4.1 (93)	Apr-09
Long Term Allocation Index			-5.7 (78)	-20.0 (57)	-17.4 (67)	2.5 (44)	3.4 (45)	-	-	
Long Term Balanced Index			-5.7 (80)	-20.3 (63)	-17.3 (66)	0.9 (74)	2.3 (72)	-	-	
InvMetrics All E&F < \$50M Median			-4.7	-19.5	-16.3	2.2	3.2	5.4	7.6	
Total Equity	4,075,436	6.6	-7.0 (52)	-26.3 (48)	-22.4 (54)	1.4 (68)	3.2 (62)	-	5.4 (49)	Jan-14
MSCI AC World Index (Net)			-6.8 (48)	-25.6 (45)	-20.7 (42)	3.7 (44)	4.4 (46)	7.3 (50)	5.5 (48)	
eV All Global Equity Median			-6.9	-26.6	-22.0	3.3	4.1	7.3	5.4	
Fidelity Large Cap Value - FLCOX	762,908	1.2	-5.6 (53)	-	-	-	-	-	-18.1 (85)	Apr-22
Russell 1000 Value Index			-5.6 (54)	-17.8 (69)	-11.4 (72)	4.4 (77)	5.3 (71)	9.2 (59)	-17.1 (73)	
Large Value Median			-5.5	-16.3	-9.2	5.5	6.0	9.3	-16.2	
SEG Baxter	152,545	0.2	-11.2 (86)	-31.7 (66)	-32.5 (74)	-4.7 (92)	-0.2 (43)	-	0.8 (50)	Jul-17
MSCI AC World ex USA (Net)			-9.9 (59)	-26.5 (32)	-25.2 (34)	-1.5 (65)	-0.8 (61)	3.0 (85)	0.4 (62)	
eV All ACWI ex-US Equity Median			-9.6	-28.9	-27.0	-0.8	-0.5	4.2	0.7	
MFS Instl International Equity	752,917	1.2	-8.6 (9)	-	-	-	-	-	-16.3 (34)	May-22
MSCI EAFE Index			-9.3 (19)	-26.8 (31)	-24.7 (27)	-1.4 (43)	-0.4 (29)	4.2 (18)	-17.0 (56)	
Foreign Large Blend Median			-10.4	-27.7	-25.8	-1.7	-0.9	3.4	-16.8	
Acadian Emerging Markets Equity	621,699	1.0	-12.5 (86)	-27.6 (54)	-26.7 (40)	0.5 (33)	-1.5 (54)	-	1.2 (49)	Oct-14
MSCI Emerging Markets (Net)			-11.6 (73)	-27.2 (47)	-28.1 (51)	-2.1 (62)	-1.8 (61)	1.0 (69)	0.7 (64)	
eV Emg Mkts Equity Median			-9.8	-27.4	-28.1	-1.2	-1.3	1.5	1.1	
Vanguard Total Stock Market VIPERs - VTI	1,785,368	2.9	-4.4 (48)	-24.8 (56)	-18.0 (53)	7.6 (31)	8.5 (28)	-	-	Nov-16
Russell 3000 Index			-4.5 (49)	-24.6 (55)	-17.6 (51)	7.7 (29)	8.6 (27)	11.4 (25)	10.1 (38)	
eV All US Equity Median			-4.5	-23.9	-17.4	6.0	6.6	10.0	9.0	

TOTAL FUND PERFORMANCE DETAIL

	Allocation		Performance (%)							
	Market Value (\$)	% of Portfolio	3 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fixed	3,430,677	5.5	-3.8 (50)	-12.1 (26)	-12.2 (27)	-2.3 (46)	-0.2 (52)	-	1.4 (54)	Jan-14
<i>Blmbg. U.S. Aggregate Index</i>			<i>-4.8 (58)</i>	<i>-14.6 (41)</i>	<i>-14.6 (40)</i>	<i>-3.3 (57)</i>	<i>-0.3 (53)</i>	<i>0.9 (60)</i>	<i>1.2 (56)</i>	
<i>eV All Global Fixed Inc Median</i>			<i>-3.8</i>	<i>-17.2</i>	<i>-17.1</i>	<i>-2.8</i>	<i>-0.1</i>	<i>1.5</i>	<i>1.6</i>	
BlackRock Strategic Income Opportunities Fund - BSIIIX	882,971	1.4	-1.8 (6)	-7.2 (3)	-7.4 (3)	0.9 (1)	1.8 (4)	-	2.1 (9)	Oct-14
<i>Blmbg. U.S. Aggregate Index</i>			<i>-4.8 (82)</i>	<i>-14.6 (33)</i>	<i>-14.6 (34)</i>	<i>-3.3 (88)</i>	<i>-0.3 (90)</i>	<i>0.9 (97)</i>	<i>0.8 (90)</i>	
<i>eV US Core Plus Fixed Inc Median</i>			<i>-4.4</i>	<i>-15.2</i>	<i>-15.2</i>	<i>-2.7</i>	<i>0.1</i>	<i>1.5</i>	<i>1.3</i>	
Baird Core Bond - BAGIX	1,629,825	2.6	-4.7 (68)	-15.2 (80)	-15.3 (80)	-3.1 (63)	-0.1 (55)	-	0.9 (38)	Dec-14
<i>Blmbg. U.S. Aggregate Index</i>			<i>-4.8 (74)</i>	<i>-14.6 (52)</i>	<i>-14.6 (52)</i>	<i>-3.3 (79)</i>	<i>-0.3 (78)</i>	<i>0.9 (78)</i>	<i>0.6 (78)</i>	
<i>eV US Core Fixed Inc Median</i>			<i>-4.6</i>	<i>-14.6</i>	<i>-14.6</i>	<i>-3.0</i>	<i>0.0</i>	<i>1.1</i>	<i>0.9</i>	
Vanguard Intermediate-Term Treasury ETF - VGIT	652,256	1.1	-4.3 (92)	-11.4 (83)	-12.1 (83)	-	-	-	-	Apr-21
<i>Blmbg. U.S. Treasury: Intermediate</i>			<i>-3.1 (56)</i>	<i>-8.7 (7)</i>	<i>-9.2 (6)</i>	<i>-1.7 (59)</i>	<i>0.2 (74)</i>	<i>0.6 (93)</i>	<i>-6.2 (31)</i>	
<i>eV US Interm Duration Fixed Inc Median</i>			<i>-3.0</i>	<i>-10.0</i>	<i>-10.5</i>	<i>-1.6</i>	<i>0.4</i>	<i>1.1</i>	<i>-6.5</i>	
Fidelity Inflation-Protected Bond Index Fund - FIPDX	166,918	0.3	-5.1 (66)	-13.7 (71)	-11.7 (66)	-	-	-	-7.2 (50)	Jun-21
<i>Blmbg. U.S. TIPS</i>			<i>-5.1 (67)</i>	<i>-13.6 (70)</i>	<i>-11.6 (56)</i>	<i>0.8 (58)</i>	<i>2.0 (42)</i>	<i>1.0 (38)</i>	<i>-7.2 (47)</i>	
<i>eV US TIPS / Inflation Fixed Inc Median</i>			<i>-5.0</i>	<i>-13.4</i>	<i>-11.5</i>	<i>0.9</i>	<i>1.9</i>	<i>0.9</i>	<i>-7.2</i>	
US Treasury	98,707	0.2								
GAA/ Risk Parity	485,780	0.8	-6.2 (63)	-17.5 (35)	-14.9 (37)	-7.3 (99)	-3.9 (95)	-	-2.1 (96)	Dec-14
<i>eV Global TAA Median</i>			<i>-5.5</i>	<i>-19.8</i>	<i>-16.8</i>	<i>0.7</i>	<i>1.9</i>	<i>3.9</i>	<i>2.9</i>	
PIMCO All Asset - PAAIX	485,780	0.8	-6.2 (63)	-17.5 (35)	-14.9 (37)	-	-	-	-	Apr-21
<i>PIMCO All Asset Index</i>			<i>-4.2 (20)</i>	<i>-15.5 (28)</i>	<i>-14.2 (31)</i>	<i>-0.9 (72)</i>	<i>1.2 (62)</i>	<i>2.3 (80)</i>	<i>-8.9 (55)</i>	
<i>eV Global TAA Median</i>			<i>-5.5</i>	<i>-19.8</i>	<i>-16.8</i>	<i>0.7</i>	<i>1.9</i>	<i>3.9</i>	<i>-8.6</i>	

-Allocation Index: Used to measure the value add from active management. Calculated as the asset weight from the prior month end multiplied by the specified market index.

-Long-Term Balanced Index: (54% - MSCI ACWI)(30% - Bloomberg Aggregate)(5% - Bloomberg US TIPS TR)(5% - Bloomberg US Treasury TR)(6% - PIMCO All Asset Index) as of 3/1/2021.

-PIMCO All Asset Index: (40% - Bloomberg Aggregate)(30% - Bloomberg US TIPS 1-10 Yr)(10% - S&P 500)(10% - Bloomberg High Yield)(10% - JP Morgan EMBI+).

CASH FLOW SUMMARY BY MANAGER

	1 Quarter Ending September 30, 2022					
	Beginning Market Value	Contributions	Withdrawals	Net Cash Flows	Net Investment Change	Ending Market Value
Acadian Emerging Markets Equity	\$710,422	-	-\$1,464	-\$1,464	-\$87,259	\$621,699
Baird Core Bond - BAGIX	\$1,709,512	-	-	-	-\$79,687	\$1,629,825
Bank of Ann Arbor Trust Cash	-	-	-	-	-	-
BlackRock Strategic Income Opportunities Fund - BSIX	\$899,173	-	-	-	-\$16,202	\$882,971
Fidelity Inflation-Protected Bond Index Fund - FIPDX	\$175,932	-	-	-	-\$9,013	\$166,918
Fidelity Large Cap Value - FLCOX	\$807,986	-	-	-	-\$45,078	\$762,908
MFS Intl International Equity	\$823,849	-	-	-	-\$70,931	\$752,917
Northern Inst Govt Select MMKT	\$28,797,705	\$25,010,796	-\$3,337	\$25,007,459	\$147,698	\$53,952,862
PIMCO All Asset - PAAIX	\$517,659	-	-	-	-\$31,879	\$485,780
SEG Baxter	\$171,728	-	-	-	-\$19,183	\$152,545
US Treasury	\$98,582	-	-	-	\$125	\$98,707
Vanguard Intermediate-Term Treasury ETF - VGIT	\$684,136	-	-\$2,883	-\$2,883	-\$28,997	\$652,256
Vanguard Total Stock Market VIPERs - VTI	\$1,876,392	-	-\$7,914	-\$7,914	-\$83,111	\$1,785,368
Total	\$37,273,075	\$25,010,796	-\$15,597	\$24,995,199	-\$323,519	\$61,944,755



APPENDIX



DUE DILIGENCE MONITOR

NEPC Due Diligence Status Key

No Action	Informational items have surfaced; no action is recommended.
Watch	Issues have surfaced to be concerned over; manager can participate in future searches, but current and prospective clients must be made aware of the issues.
Hold	Serious issues have surfaced to be concerned over; manager cannot be in future searches unless a client specifically requests, but current and prospective clients must be made aware of the issues.
Client Review	Very serious issues have surfaced with a manager; manager cannot be in future searches unless a client specifically requests. Current clients must be advised to review the manager.
Terminate	We have lost all confidence in the product; manager would not be recommended for searches and clients would be discouraged from using. The manager cannot be in future searches unless a client specifically requests. Current clients must be advised to replace the manager.

NEPC Due Diligence Rating Key

1	A high conviction investment product. Product has a clear and economically-grounded investment thesis, and is managed by an investment team that is sufficiently resourced and incented to execute on the thesis.
2	NEPC has a positive view of the strategy. Strategy has a compelling and sound investment thesis. The manager is sufficiently resourced and incented to execute on the thesis. Strengths outweigh the weaknesses, but the strategy does not meet all requirements for a 1 rating.
3	A satisfactory investment product. The strategy lacks a compelling investment thesis, however there are no significant concerns around the manager's viability.
4	The strategy may have an unclear or ambiguous investment thesis or the manager may lack the ability to execute on the stated thesis. The strategy likely has strengths and weaknesses and the weaknesses may outweigh the strengths.
5	A strategy that lacks an investment thesis or NEPC has no confidence in the manager's ability to execute on the thesis, and/or the investment firm may not be viable. Serious issues have been identified with an investment manager or product. This rating aligns with a Terminate Due Diligence status for client-owned products.
NR	Due diligence has not been sufficiently completed on the product or manager.



DISCLAIMERS

Past performance is no guarantee of future results.

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