

**WELLS  
FARGO**

**The Private Bank**







# Investment Review

THE PRIVATE BANK

November 7, 2022

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## Red Wing Public Schools – OPEB Trust

Date of Trust:	September 2009
Type of Trust:	Irrevocable
Governing Law:	Minnesota State Statute 356A
Date of Actuarial Report:	Fiscal Year Ending June 30, 2022
Current OPEB Obligation:	\$4,651,631
Investment Objective:	Moderate Growth & Income
Portfolio Life:	Greater than 10 years

### **Agenda**

Portfolio Review

Economic and Market Overview

# Portfolio Review

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THE PRIVATE BANK



## Strategic Allocation Review Summary

As of October 25, 2022

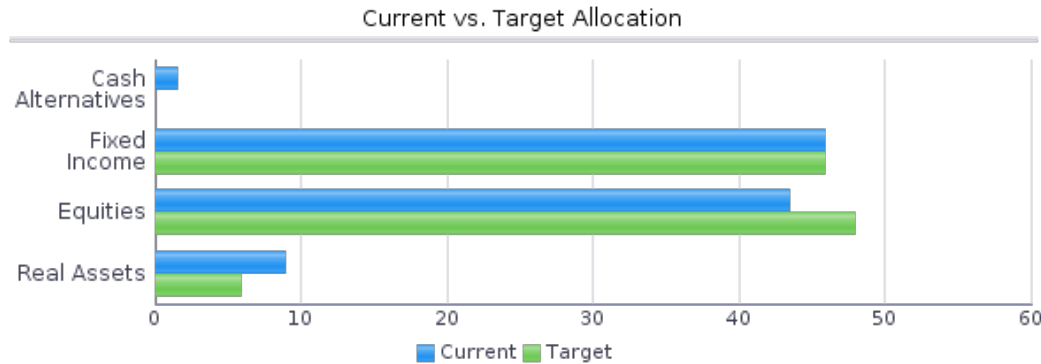
October 26, 2022

Trade Date Basis

Red Wing Opeb Trust

Investment Objective Is

Moderate Growth & Income



	MARKET VALUE	CURRENT ALLOCATION	TARGET ALLOCATION	DEVIATION (%)	DEVIATION (\$)
<b>Investable Total</b>	<b>\$9,175,832</b>	<b>100%</b>	<b>100%</b>		
Cash Alternatives	145,296	1.58	0.00	1.58	145,296
Fixed Income	4,217,861	45.97	46.00	(0.03)	(3,013)
Equities	3,989,564	43.48	48.00	(4.52)	(414,845)
Real Assets	823,112	8.97	6.00	2.97	272,562
<b>Miscellaneous Total</b>	<b>\$749</b>				
Miscellaneous	749				
<b>Total Portfolio</b>	<b>\$9,176,582</b>				

## Strategic Allocation Review Summary

As of October 25, 2022

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Estimated Annual Income reflects the estimated amount earned on a security if the current position and its related income remained constant for a year. Estimated Annual Yield reflects the current estimated annual income divided by the current value of the security on the as of date of this report. Actual income and yield may vary from estimates. Wells Fargo is not responsible for incorrect or missing estimated annual income and yields. Past performance is not a guarantee of future results.

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For any assets identified as non-managed or held in "NMG" sub-accounts, the client acknowledges that Wells Fargo has no investment discretion, management or fiduciary authority or responsibility over the non-managed asset(s) and reflects them in the NMG sub-account solely for recordkeeping purposes. Client further acknowledges that Wells Fargo will not warn, advise, monitor, communicate or render an opinion regarding the appropriateness of the non-managed asset in terms of the account's investment objective, portfolio diversification, performance or otherwise and that Wells Fargo is not required to take into account such assets when determining the appropriate allocation for investment of assets under its management.

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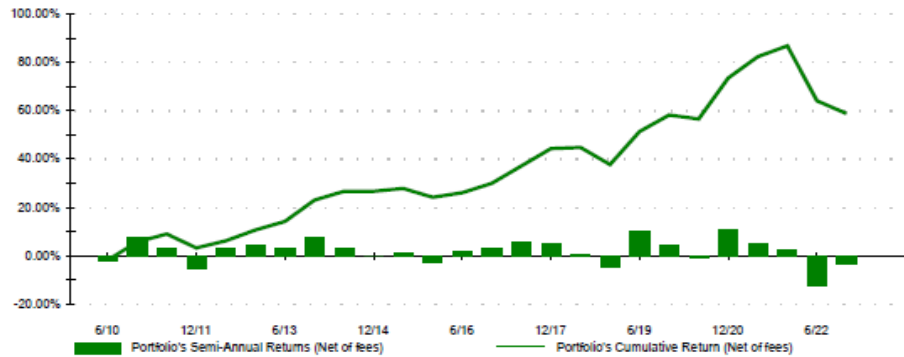
<b>Receipts</b>	10/22/2009	Initial Funding of OPEB Trust	\$12,556,457
	10/22/2009	Capitalized Interest	\$201,858
<b>Disbursements</b>	7/6/2010	OPEB Disbursement	(\$675,043)
	12/9/2010	Capitalized Interest	(\$201,858)
	7/20/2011	OPEB Disbursement	(\$838,575)
	6/28/2012	OPEB Disbursement	(\$794,380)
	6/28/2013	OPEB Disbursement	(\$789,735)
	7/1/2014	OPEB Disbursement	(\$669,665)
	10/6/2015	OPEB Disbursement	(\$617,787)
	11/8/2016	OPEB Disbursement	(\$688,504)
	11/3/2017	OPEB Disbursement	(\$587,040)
	11/5/2018	OPEB Disbursement	(\$615,656)
	11/7/2019	OPEB Disbursement	(\$818,878)
	11/18/2020	OPEB Disbursement	(\$889,233)
	12/15/2021	OPEB Disbursement	<u>(\$912,831)</u>
<b>Total Disbursements</b>			<u>(\$9,099,187)</u>
<b>Adjusted Balance</b>			<u>\$3,659,128</u>
<b>Current Market Value (10/25/2022)</b>			\$9,936,749
<b>Net Increase in Market Value</b>			<b>\$6,277,621</b>



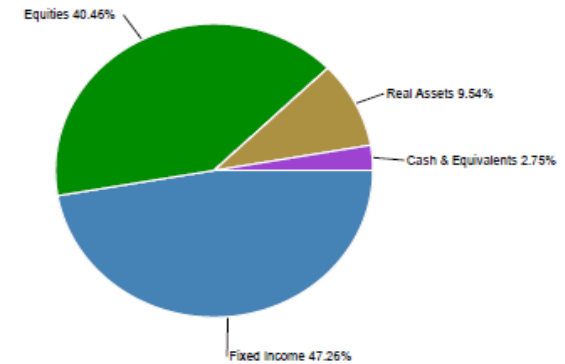
## PORTFOLIO PERFORMANCE SUMMARY (CONSOLIDATED) - REPORT PERIOD: 1/1/10 TO 9/30/22

AGG775259 RED WING OPEB TRUST

### PORTFOLIO RETURNS



### ALLOCATION (BY CLASS)



### PORTFOLIO SUMMARY

	LAST 3 MONTHS	YEAR TO DATE	LAST 12 MONTHS	LAST 3 YEARS	LAST 5 YEARS	SINCE INCEPTION
Beginning Value <sup>1</sup>	9,317,273	10,601,919	11,199,409	10,983,578	11,337,151	8,736,904
Net Contributions & Withdrawals <sup>2</sup>	7	-14	-912,656	-2,617,865	-3,814,790	-5,064,165
Investment Gain or Loss <sup>1</sup>	-304,677	-1,589,302	-1,274,149	646,889	1,490,242	5,339,864
Ending Value <sup>1</sup>	9,012,603	9,012,603	9,012,603	9,012,603	9,012,603	9,012,603

### PERFORMANCE SUMMARY

	ENDING MARKET VALUE <sup>1</sup>	CURRENT PORTFOLIO ALLOCATION	LAST 3 MONTHS	YEAR TO DATE	LAST 12 MONTHS	LAST 3 YEARS <sup>3</sup>	LAST 5 YEARS <sup>3</sup>	SINCE INCEPTION <sup>3</sup>
<b>TOTAL PORTFOLIO (Net of fees)</b>	<b>9,012,603</b>	<b>100.00%</b>	<b>-3.26%</b>	<b>-14.98%</b>	<b>-12.53%</b>	<b>1.43%</b>	<b>2.44%</b>	<b>3.69%</b>
<b>FIXED INCOME</b>	<b>4,258,940</b>	<b>47.26%</b>	<b>-3.16%</b>	<b>-7.58%</b>	<b>-8.29%</b>	<b>-0.89%</b>	<b>0.59%<sup>4</sup></b>	<b>1.34%<sup>4</sup></b>
Bloomberg 1-5 Year Govt/Credit			-2.16%	-6.62%	-7.29%	-0.90%	0.55%	1.41%
Bloomberg Aggregate Bond Index			-4.75%	-14.61%	-14.60%	-3.26%	-0.27%	2.11%
Bloomberg 1-15 Yr Muni Blend (1-17)			-2.58%	-9.21%	-8.87%	-1.12%	0.76%	2.52%
Bloomberg Multiverse Index			-6.76%	-19.79%	-20.35%	-5.63%	-2.26%	0.67%
Bloomberg High Yield Corporate Index			-0.65%	-14.74%	-14.14%	-0.45%	1.57%	5.56%
Bloomberg High Yield Municipal Index			-4.83%	-16.03%	-15.05%	-1.43%	2.31%	5.14%
JP Morgan GBI x US			-10.16%	-27.01%	-28.32%	-10.03%	-5.16%	-1.28%
JP Morgan EMBI Global Index			-4.20%	-22.24%	-22.23%	-6.10%	-2.31%	3.41%

<sup>1</sup> Values include Accrued Income.

<sup>2</sup> As accounts are added to/removed from the composite they are displayed as a contribution/withdrawal.

<sup>3</sup> Annualized Return

<sup>4</sup> Historical classification changes exist.

## PORTFOLIO PERFORMANCE SUMMARY (CONSOLIDATED) - REPORT PERIOD: 1/1/10 TO 9/30/22

AGG775259 RED WING OPEB TRUST

### PERFORMANCE SUMMARY

	ENDING MARKET VALUE <sup>2</sup>	CURRENT PORTFOLIO ALLOCATION	LAST 3 MONTHS	YEAR TO DATE	LAST 12 MONTHS	LAST 3 YEARS <sup>1</sup>	LAST 5 YEARS <sup>1</sup>	SINCE INCEPTION <sup>1</sup>
<b>EQUITIES</b>	3,646,106	40.46%	-4.16%	-25.08%	-20.40%	5.26% <sup>3</sup>	6.16% <sup>3</sup>	9.14% <sup>3</sup>
S&P 500 Index			-4.88%	-23.87%	-15.47%	8.16%	9.23%	11.77%
MSCI EAFE Net Index			-9.36%	-27.09%	-25.13%	-1.83%	-0.84%	3.20%
MSCI All Country World Index			-6.71%	-25.34%	-20.29%	4.23%	4.96%	7.59%
MSCI Emerging Mkts Index-Net			-11.57%	-27.16%	-28.11%	-2.07%	-1.81%	1.47%
Russell Midcap Index			-3.44%	-24.27%	-19.39%	5.19%	6.48%	10.93%
Russell 2000 Index			-2.19%	-25.10%	-23.50%	4.29%	3.55%	9.43%
<b>REAL ASSETS</b>	859,630	9.54%	1.45%	10.97%	22.72%	12.02%	9.65%	7.18%
FTSE EPRA/NAREIT Developed Index			-11.39%	-29.42%	-22.10%	-5.62%	0.07%	5.57%
Bloomberg Commodity Total Return Index			-4.11%	13.57%	11.80%	13.45%	6.96%	-1.16%
<b>ALTERNATIVE INVESTMENTS</b>	-	-	-	-	-	-	-	-
HFRI Fund Weighted Composite Index (update)			-	-	-	-	-	-
Wilshire Liquid Alternative Index			-	-	-	-	-	-
<b>OTHER</b>	-	-	-	-	-	-	-	-
<b>CASH &amp; EQUIVALENTS</b>	247,927	2.75%	0.39%	0.54%	0.55%	0.42%	0.85%	0.57%
Lipper Money Market Index			0.49%	0.63%	0.64%	0.48%	0.97%	0.43%

<sup>1</sup> Annualized Return

<sup>2</sup> Values include Accrued Income.

<sup>3</sup> Historical classification changes exist.

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# Holdings Summary

As of October 25, 2022

October 26, 2022

Trade Date Basis

RED WING OPEB TRUST

Investment Objective Is Moderate  
Growth & Income

	UNITS	PRICE	MARKET VALUE	TOTAL COST	UNREALIZED G/L	EST ANNUAL INCOME	EST ANNUAL YIELD	ALLOCATION
<b>Investable Total</b>			<b>\$9,175,832</b>	<b>\$8,104,938</b>	<b>\$1,070,894</b>	<b>\$212,138</b>	<b>2.31%</b>	<b>100.0%</b>
<b>Cash Alternatives</b>			<b>145,296</b>	<b>145,296</b>	<b>0</b>	<b>3,996</b>	<b>2.75</b>	<b>1.6</b>
Cash Alternatives			145,296	145,296	0	3,996	2.75	1.6
Cash Equivalents			145,296	145,296	0	3,996	2.75	1.6
CASH	0	1.00	0	0	0	0		0.0
SECURED MARKET DEPOSIT ACCOUNT	145,296	1.00	145,296	145,296	0	3,996	2.75	1.6
<b>Fixed Income</b>			<b>4,217,861</b>	<b>4,641,692</b>	<b>(423,832)</b>	<b>134,626</b>	<b>3.19</b>	<b>46.0</b>
U.S. Taxable Investment Grade Fixed Income			4,217,861	4,641,692	(423,832)	134,626	3.19	46.0
Separately Managed Account			4,217,861	4,641,692	(423,832)	134,626	3.19	46.0
FI TAX INTERM-WF-FIST			4,217,861	4,641,692	(423,832)	134,626	3.19	46.0
<b>Equities</b>			<b>3,989,564</b>	<b>2,800,664</b>	<b>1,188,900</b>	<b>61,275</b>	<b>1.54</b>	<b>43.5</b>
U.S. Large Cap			2,454,734	1,450,233	1,004,501	40,719	1.66	26.7
Funds			864,303	315,191	549,113	13,792	1.60	9.4
ISHARES CORE S & P 500 ETF	2,236	386.54	864,303	315,191	549,113	13,792	1.60	9.4
Separately Managed Account			1,590,430	1,135,042	455,388	26,927	1.69	17.3
LARGE CAP VALUE - MFS			966,343	728,995	237,348	22,682	2.35	10.5
LARGE GROWTH - JENNISON			624,087	406,047	218,040	4,245	0.68	6.8
U.S. Mid Cap			892,334	652,363	239,972	11,733	1.31	9.7
Funds			364,756	263,354	101,402	2,252	0.62	4.0
ISHARES RUSSELL MID-CAP GROWTH	4,372	83.43	364,756	263,354	101,402	2,252	0.62	4.0
Separately Managed Account			527,578	389,009	138,570	9,482	1.80	5.7
MID CAP VALUE - ANCHOR			527,578	389,009	138,570	9,482	1.80	5.7
U.S. Small Cap			282,742	306,992	(24,250)	967	0.34	3.1
Other			170,442	205,201	(34,759)	232	0.14	1.9
STERLING CAP STR S/C VAL-INS #328	2,702	63.08	170,442	205,201	(34,759)	232	0.14	1.9
Separately Managed Account			112,300	101,791	10,509	736	0.66	1.2
SMALL CAP SUSTAINABL GRO-KAYNE			112,300	101,791	10,509	736	0.66	1.2
Developed Market Ex.-U.S. Equities			196,854	218,303	(21,449)	6,333	3.22	2.1
Separately Managed Account			196,854	218,303	(21,449)	6,333	3.22	2.1
MONDRIAN INTL EQ ADR-DELAWARE			114,436	141,466	(27,030)	4,417	3.86	1.2
NON-US GRWTH ADR-MCKINLEY			82,418	76,837	5,582	1,916	2.32	0.9

# Holdings Summary

As of October 25, 2022

October 26, 2022

Trade Date Basis

RED WING OPEB TRUST

Investment Objective Is Moderate  
Growth & Income

	UNITS	PRICE	MARKET VALUE	TOTAL COST	UNREALIZED G/L	EST ANNUAL INCOME	EST ANNUAL YIELD	ALLOCATION
Emerging Market Equities			162,900	172,774	(9,874)	1,523	0.94	1.8
Funds			162,900	172,774	(9,874)	1,523	0.94	1.8
ABERDEEN EMERG MARKETS-INST #5840	7,306	11.32	82,702	90,615	(7,913)	818	0.99	0.9
INV OPP DEVELOP MRKTS-R6 #7038	2,630	30.49	80,198	82,159	(1,961)	705	0.88	0.9
<b>Real Assets</b>			<b>823,112</b>	<b>517,286</b>	<b>305,826</b>	<b>12,241</b>	<b>1.49</b>	<b>9.0</b>
Private Real Estate			823,112	517,286	305,826	12,241	1.49	9.0
Funds			823,112	517,286	305,826	12,241	1.49	9.0
PRINCIPAL ENHANCED PRPRTY ASP R/I1-2	243	2,268.93	550,768	292,286	258,482	0	0.00	6.0
STARWOOD REIT	9,856	27.63	272,344	225,000	47,344	12,241	4.49	3.0
<b>Miscellaneous Total</b>			<b>\$749</b>	<b>\$749</b>	<b>\$0</b>	<b>\$21</b>	<b>2.75%</b>	<b>0.0%</b>
<b>Miscellaneous</b>			<b>749</b>	<b>749</b>	<b>0</b>	<b>21</b>	<b>2.75</b>	<b>0.0</b>
P3			749	749	0	21	2.75	0.0
Cash Equivalents			0	0	0	0		0.0
CASH	0	1.00	0	0	0	0		0.0
Separately Managed Account			749	749	0	21	2.75	0.0
FI TAX INTERM-WF-FIST			0	0	0	0		0.0
LARGE CAP VALUE - MFS			121	121	0	3	2.75	0.0
LARGE GROWTH - JENNISON			0	0	0	0		0.0
MID CAP VALUE - ANCHOR			0	0	0	0		0.0
MONDRIAN INTL EQ ADR-DELAWARE			564	564	0	16	2.75	0.0
NON-US GRWTH ADR-MCKINLEY			64	64	0	2	2.75	0.0
SMALL CAP SUSTAINABL GRO-KAYNE			0	0	0	0		0.0
<b>Total Portfolio</b>			<b>\$9,176,582</b>	<b>\$8,105,688</b>	<b>\$1,070,894</b>	<b>\$212,159</b>	<b>2.31%</b>	<b>100.0%</b>

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As of October 25, 2022

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# Economic and Market Overview

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THE PRIVATE BANK



# Wells Fargo Investment Institute (WFII) forecasts and guidance

## Global economic forecast

Economic Targets	Latest	2022 YE target	2023 YE target
U.S. GDP Growth	1.8%	1.6%	-1.3%
U.S. Inflation	8.2%	7.7%	2.4%
U.S. Unemployment Rate	3.5%	3.8%	5.2%
Eurozone GDP Growth	4.3%	2.7%	-3.4%
Eurozone Inflation	9.9%	8.0%	4.3%

Other Economic Targets	Latest	2022 YE target	2023 YE target
Global GDP Growth	2.2%	2.4%	0.9%
Global Inflation	7.0%	6.7%	4.5%
Developed-Market GDP Growth	2.1%	2.3%	-1.3%
Developed-Market Inflation	9.2%	7.2%	3.2%
Emerging-Market GDP Growth	2.3%	2.4%	2.6%
Emerging-Market Inflation	5.5%	6.3%	5.5%

Global Equities	Latest	2022 YE target	2023 YE target
S&P 500 Index	3807	3800-4000	4300-4500
S&P 500 earnings per share	\$210	\$215	\$205
Russell Midcap Index	2660	2500-2700	2900-3100
Russell Midcap earnings per share	\$141	\$130	\$145
Russell 2000 Index	1806	1500-1700	1800-2000
Russell 2000 earnings per share	\$70	\$65	\$75
MSCI EAFE	1762	1550-1750	1700-1900
MSCI EAFE earnings per share	\$147	\$135	\$145
MSCI EM	859	800-1000	900-1100
MSCI EM earnings per share	\$94	\$85	\$95

Global Fixed Income	Latest	2022 YE target	2023 YE target
10-Year Treasury	3.92%	3.75-4.25%	3.50-4.00%
30-Year Treasury	4.08%	3.75-4.25%	3.50-4.00%
Fed Funds Rate	3.25%	4.25-4.50%	3.50-3.75%

Global Real Assets	Latest	2022 YE target	2023 YE target
West Texas Crude	\$89	\$90-\$110	\$100-\$120
Brent Crude	\$97	\$95-\$115	\$105-\$125
Gold Price	\$1,663	\$1800 - \$1900	\$1900 - \$2000
Bloomberg Commodity Index (TR)	245	260-280	270-290

Currency Guidance	Latest	2022 YE target	2023 YE target
Dollar/Euro Exchange Rate	\$1.00	\$0.92-\$1.00	\$0.94-\$1.02
Yen/Dollar Exchange Rate	¥146	¥140-¥150	¥137-¥147

## WFII guidance

Fixed Income	Guidance
Cash Alternatives	Neutral
U.S. Taxable Investment Grade Fixed Income	Favorable
U.S. Short Term Taxable Fixed Income	Favorable
U.S. Intermediate Term Taxable Fixed Income	Unfavorable
U.S. Long Term Taxable Fixed Income	Most Favorable
High Yield Taxable Fixed Income	Unfavorable
U.S. Municipal Bonds	Favorable
Developed Market Ex-U.S. Fixed Income	Unfavorable
Emerging Market Fixed Income	Neutral

Equities	Guidance
U.S. Large Cap Equities	Most Favorable
U.S. Mid Cap Equities	Favorable
U.S. Small Cap Equities	Unfavorable
Developed Market Ex-U.S. Equities	Most Unfavorable
Emerging Market Equities	Unfavorable

Alternative Investments	Guidance
Commodities	Favorable
Private Real Estate	Neutral

Alternative Investments	Guidance
Hedge Funds—Relative Value	Favorable
Hedge Funds—Macro	Favorable
Hedge Funds—Event Driven	Unfavorable
Hedge Funds—Equity Hedge	Neutral
Private Equity	Neutral
Private Debt	Neutral

Equity Sectors	Guidance
Communication Services	Neutral
Consumer Discretionary	Unfavorable
Consumer Staples	Neutral
Energy	Favorable
Financials	Neutral
Health Care	Favorable
Industrials	Neutral
Information Technology	Favorable
Materials	Neutral
Real Estate	Unfavorable
Utilities	Neutral

Sources: Bureau of Statistics, Wells Fargo Investment Institute, Wells Fargo Securities' Economic Group, as of October 27, 2022. Please see page 5 for important definitions regarding guidance.

## Recent WFII Reports

**Global Equities Quarterly Guidance – 10/27/22**

**Staying the course – 10/26/22**

**Updating guidance and shifting fixed-income allocations – 10/26/22**

**Real Assets Quarterly Guidance – 10/25/22**

**Why high oil prices may be here to stay – 10/25/22**

**Post-election issues and investment implications – 10/25/22**

**Investment implications of a sky-high U.S. dollar – 10/24/22**

Sources: Bureau of Statistics, Wells Fargo Investment Institute, Bloomberg, as of October 27, 2022. Forecasts are not guaranteed and based on certain assumptions and on views of market and economic conditions which are subject to change. Latest economic numbers are year-over-year and as of most recent quarter-end unless noted otherwise. The unemployment rate is a level, not a year-over-year change figure. Latest economic data as of June 30, 2022. U.S. Inflation, U.S. unemployment rate, developed market inflation, emerging market inflation, global inflation, and eurozone inflation are as of September 30, 2022. Earnings per share are as of December 31, 2021. Year-end (YE) targets are based on forecasts by Wells Fargo Investment Institute as of October 28, 2022.

**Investment and Insurance Products: ➤ NOT FDIC Insured ➤ NO Bank Guarantee ➤ MAY Lose Value**

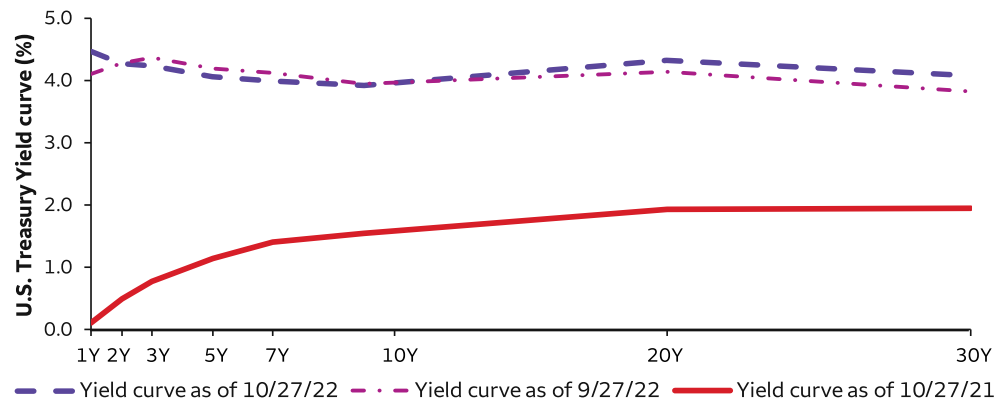


## Economic calendar

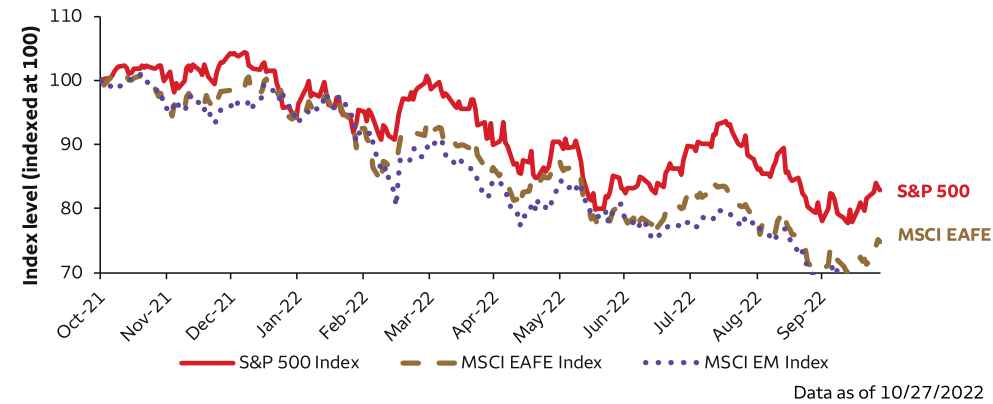
Date	Index	Actual/Consensus	Last
24-Oct	Markit U.S. Manufacturing PMI	Actual: 49.9	Last: 52.0
24-Oct	Markit U.S. Services PMI	Actual: 46.6	Last: 49.3
24-Oct	Markit U.K. Manufacturing PMI	Actual: 45.8	Last: 48.4
25-Oct	U.S. Consumer Confidence	Actual: 102.5	Last: 107.8
25-Oct	U.S. FHFA House Price Index (MoM)	Actual: -0.7%	Last: -0.6%
25-Oct	Germany Business Climate Index	Actual: 84.3	Last: 84.4
26-Oct	U.S. New Home Sales	Actual: 603.0k	Last: 677.0k
26-Oct	U.S. MBA Mortgage Apps.	Actual: -1.7%	Last: -4.5%
26-Oct	ECB Money Supply (YoY)	Actual: 6.3%	Last: 6.1%
27-Oct	U.S. GDP Annualized (QoQ)	Actual: 2.6%	Last: -0.6%
27-Oct	U.S. Durable Goods New Orders (MoM)	Actual: 0.4%	Last: 0.2%
27-Oct	Japan CPI Ex-Fresh Food (YoY)	Actual: 3.4%	Last: 2.8%
28-Oct	U.S. Personal Income	Consensus: 0.4%	Last: 0.3%
28-Oct	U.S. Personal Spending	Consensus: 0.4%	Last: 0.4%
28-Oct	Germany CPI (YoY)	Consensus: 10.1%	Last: 10.0%

YoY = year over year.

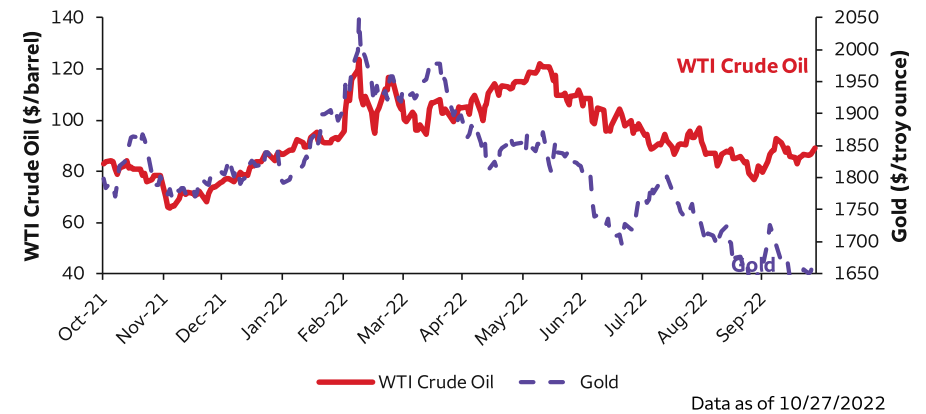
## U.S. Treasury yields



## Global equities



## West Texas Intermediate (WTI) Crude Oil and gold price



Source: Bloomberg; Index returns do not reflect the deduction of fees, expenses or taxes. An index is unmanaged and not available for direct investment. **Past performance is no guarantee of future results.**

# Market Performance

## Index Returns

Fixed Income	Prior Close	1 Week	YTD	1 Year
Bloomberg Multiverse	197	2.5	-19.4	-20.0
Bloomberg US Aggregate	1998	1.9	-15.2	-15.2
Bloomberg US Treasury	2157	1.6	-13.7	-13.6
Bloomberg US Corporate	2849	2.1	-19.1	-19.3
Bloomberg US High Yield	2151	1.9	-12.6	-11.8
Bloomberg Municipal Bond	1182	-1.6	-13.0	-12.0
Bloomberg Municipal Bond High Yield	373	-1.8	-17.8	-16.5
JP Morgan GBI Global Ex US	362	4.0	-25.6	-27.0
JP Morgan EMBI Global	713	2.5	-22.0	-22.2

Equity	Prior Close	1 Week	YTD	1 Year
MSCI AC World (USD)	582	3.4	-21.4	-19.8
S&P 500	3807	3.9	-19.1	-15.0
NASDAQ Composite Index	10793	1.7	-30.6	-28.6
DJ Industrial Average	32033	5.6	-10.4	-7.9
Russell 1000 Growth	2205	2.9	-27.8	-24.6
Russell 1000 Value	1450	5.0	-10.9	-7.8
Russell Mid Cap	2660	5.7	-18.9	-17.5
Russell 2000	1806	6.0	-18.7	-18.7
MSCI EAFE (USD)	1762	3.7	-22.3	-22.3
MSCI EAFE (Local)	1191	1.9	-9.9	-8.6
MSCI EM (Emerging Markets) (USD)	859	-0.6	-28.2	-30.8
MSCI EM (Emerging Markets) (Local)	53258	-0.8	-21.8	-24.2
MSCI FM Frontier Markets (USD)	1984	-0.7	-28.1	-29.9
MSCI FM Frontier Markets (Local)	2872	-0.8	-21.2	-22.7
CBOE Market Volatility Index	27	-8.6	59.1	61.3

Real Assets	Prior Close	1 Week	YTD	1 Year
FTSE EPRA Nareit Developed	2037	4.7	-27.8	-24.9
Alerian MLP Index	226	4.2	33.6	25.6
S&P Global Infrastructure	2509	3.4	-3.3	-2.0
Bloomberg Commodities	113	1.7	15.7	9.2

Alternative Strategies	Prior Close	1 Month	YTD	1 Year
HFRI Fund Weighted Composite	17073	-2.4	-6.3	-5.9
HFRI Relative Value	13806	-1.7	-2.1	-1.9
HFRI Macro	19167	1.3	10.5	10.1
HFRI Event Driven	19239	-3.2	-7.7	-6.8
HFRI Equity Hedge	25476	-4.2	-13.8	-13.2

Alternative Strategies are as of 9/30/2022.

## MSCI Country Returns

Developed	Prior Close	1 Week	YTD	1 Year
MSCI Australia	781	3.5	-12.8	-15.7
MSCI Canada	1947	5.5	-12.7	-12.8
MSCI France	1884	4.2	-21.2	-18.4
MSCI Germany	1614	5.2	-30.3	-31.7
MSCI Italy	232	6.0	-23.4	-23.0
MSCI Japan	2873	3.1	-23.4	-24.3
MSCI Netherlands	3419	7.8	-34.8	-36.4
MSCI Spain	333	5.2	-16.6	-19.9
MSCI Sweden	7320	6.4	-33.5	-33.6
MSCI Switzerland	6073	3.2	-23.0	-17.6
MSCI United Kingdom	981	4.2	-13.5	-12.4

Emerging	Prior Close	1 Week	YTD	1 Year
MSCI Brazil	1565	-4.0	19.7	18.9
MSCI Chile	1093	4.5	18.4	13.2
MSCI China	50	-6.5	-39.4	-46.5
MSCI India	768	1.3	-7.9	-9.5
MSCI Korea	390	5.0	-34.9	-34.8
MSCI Mexico	5184	6.9	-2.8	1.0
MSCI Russia	NA	NA	-100.0	-100.0
MSCI South Africa	379	3.4	-13.7	-17.2
MSCI Taiwan	437	-0.6	-38.7	-34.5
MSCI Turkey	221	0.9	46.3	30.3

## Sector Returns

S&P Sector Returns	Prior Close	1 Week	YTD	1 Year
S&P 500 Communications Services	160	-4.9	-39.7	-40.7
S&P 500 Consumer Discretionary	1136	4.0	-29.0	-26.8
S&P 500 Consumer Staples	745	5.4	-5.4	3.5
S&P 500 Energy	681	4.9	66.4	63.0
S&P 500 Financial	554	6.7	-13.3	-14.8
S&P 500 Healthcare	1522	5.5	-6.2	1.0
S&P 500 Industrials	782	7.0	-11.5	-8.9
S&P 500 Information Technology	2173	2.4	-28.3	-21.5
S&P 500 Material	466	5.8	-17.0	-10.7
S&P 500 Real Estate	225	4.4	-28.9	-22.1
S&P 500 Utilities	333	5.4	-6.4	1.0

## Commodity & Currency Returns

Commodities & Currencies	Prior Close	1 Week	YTD	1 Year
CRB Total Return	277	1.9	19.1	15.8
Baltic Dry Index Freight	1612	-12.2	-27.3	-57.7
Gold (\$/oz)	1663	2.2	-9.1	-7.4
Copper (\$/lb)	3.52	3.2	-21.1	-19.8
WTI Crude Oil (\$/bbl)	89	5.4	27.6	24.0
Brent Crude Oil (\$/bbl)	97	5.0	24.7	14.6
Natural Gas (\$/btu)	5.88	-3.2	39.0	-16.4
Gasoline (\$/gal)	3.01	13.7	35.1	22.9
U.S. Dollar per Euro	1.00	1.8	-12.4	-14.1
U.S. Dollar per British Pound	1.16	2.9	-14.5	-15.9
Japanese Yen per U.S. Dollar	146	-2.6	27.1	28.5
United States Dollar Index	111	-2.0	15.6	17.9

## Strategic Asset Allocation Performance

Liquid (no rebalance)	MTD	QTD	YTD	1 Year
Conservative Income	0.82	0.82	-15.12	-14.75
Moderate Income	1.73	1.73	-15.71	-15.15
Aggressive Income	2.38	2.38	-16.27	-15.54
Conservative Growth & Income	2.59	2.59	-16.08	-15.52
Moderate Growth & Income	3.17	3.17	-16.55	-15.82
Aggressive Growth & Income	3.70	3.70	-17.03	-16.12
Conservative Growth	4.07	4.07	-17.34	-16.50
Moderate Growth	4.44	4.44	-17.95	-17.13
Aggressive Growth	4.79	4.79	-18.69	-18.07

Sources: Bloomberg, Wells Fargo Investment Institute; as of October 26, 2022. See pages 5-6 for Investment Objectives Definition and Composition. For illustrative purposes only. Returns do not reflect the results of actual trading. Index returns reflect general market results, assume the reinvestment of dividends and other distributions, and do not reflect deduction for fees, expenses, or taxes applicable to an actual investment.

**Strategic Asset Allocation:** An investor's return objectives, risk tolerances, and investment constraints are integrated with long-term return assumptions to establish exposure to permissible asset classes. Performance results for the strategic asset allocations are calculated using blended index returns. An index is unmanaged and not available for direct investment. Index returns do not reflect the deduction of fees, expenses, or taxes. Returns are U.S. dollar based unless indicated otherwise. Performance reflects total returns.

Source: Bloomberg; as of October 26, 2022. **Past performance is no guarantee of future results.** HFRI data is monthly at the sixth business day; all other indexes are daily.

# Bond Market Data

## Cross-Sector Yield Curves

Maturity	Treasury	Agency	Corporate A	Municipal AAA	Taxable Equivalent Yield, 37% Tax Rate <sup>2</sup>	Taxable Equivalent Yield, 35% Tax Rate <sup>2</sup>	Taxable Equivalent Yield, 32% Tax Rate <sup>2</sup>
1-Yr	4.42	4.56	4.78	3.13	4.96	4.81	4.60
2-Yr	4.27	4.46	4.92	3.20	5.08	4.92	4.70
3-Yr	4.24	4.37	4.97	3.23	5.13	4.97	4.75
4-Yr	4.16	4.31	5.02	3.24	5.14	4.98	4.76
5-Yr	4.06	4.28	5.08	3.27	5.19	5.03	4.81
7-Yr	3.98	4.27	5.21	3.29	5.21	5.05	4.83
10-Yr	3.92	4.41	5.40	3.41	5.40	5.24	5.01
15-Yr	4.05	4.64	5.72	3.80	6.03	5.85	5.59
20-Yr	4.32	4.76	5.82	3.95	6.28	6.08	5.81
30-Yr	4.08	NA	5.63	4.18	6.63	6.43	6.14

## Corporate Bond Yield Curves and Spreads

Maturity	AA**	AA Spread	A**	A Spread	BBB**	BBB Spread	BB**	BB Spread <sup>1</sup>
1-Yr	4.58	16	4.78	36	5.30	88	6.01	159
2-Yr	4.65	38	4.92	65	5.52	124	6.52	224
3-Yr	4.67	43	4.97	73	5.60	136	6.81	257
4-Yr	4.70	53	5.02	86	5.68	152	7.01	285
5-Yr	4.75	69	5.08	102	5.77	171	7.16	310
7-Yr	4.83	85	5.21	123	5.94	196	7.38	340
10-Yr	4.99	107	5.40	148	6.13	221	7.57	365
15-Yr	5.29	124	5.72	167	6.37	232	7.84	379
20-Yr	5.45	113	5.82	150	6.41	209	7.91	359
30-Yr	5.47	138	5.63	155	6.14	206	7.67	358

## Short-Term Yield Curves

Maturity	Treasury Bills	Agency Discount Notes	Commercial Paper	Libor	SOFR
1-month	3.35	NA	3.50	3.63	3.74
3-month	3.93	4.34	3.98	4.37	4.09
6-month	4.28	4.42	4.36	4.93	4.43
1-Year	4.31	4.56	NA	5.39	4.65

## International Yield Curves

Maturity	Canada	France	Germany	Japan	United Kingdom
2-Year	3.79	1.88	1.76	-0.05	2.98
5-Year	3.32	2.13	1.81	0.06	3.43
10-Year	3.19	2.46	1.96	0.25	3.39
30-Year	3.32	2.79	1.99	1.45	3.49

## Mortgage Backed Securities

Term	Yield
MBS Conventional -3YR	5.0
GNMA - Aggregate Term	5.0

## Municipal Yield Curves

Maturity	AAA	AA	A	BBB	Insured	Pre-Refunded
1-Yr	3.13	3.24	3.37	3.99	0.94	3.23
2-Yr	3.20	3.33	3.46	4.06	0.98	3.28
3-Yr	3.23	3.38	3.53	4.10	1.03	3.30
4-Yr	3.24	3.41	3.58	4.11	1.09	3.31
5-Yr	3.27	3.46	3.64	4.14	1.10	3.35
7-Yr	3.29	3.53	3.69	4.16	1.23	3.36
10-Yr	3.41	3.70	3.82	4.30	1.48	3.48
15-Yr	3.80	4.15	4.23	4.70	1.78	NA
20-Yr	3.95	4.34	4.42	4.86	1.97	NA
30-Yr	4.18	4.60	4.68	5.09	2.16	NA

## Constant Maturity Swap Rates

Maturity	Swaps
2-Year	4.63
5-Year	4.11
10-Year	3.93
30-Year	3.60

## Short-Term Yield Curves

Government Repo	
Overnight	3.04
1-week	3.04
1-month	3.50
3-month	4.08

## Other Rates

Money Rates	
U.S. Secured Overnight Financing Rate	3.03
Fed Funds Target Rates	3.25
Prime Rate	6.25

<sup>1</sup> Spread is the difference between the yield on a bond and that of a comparable U.S. Treasury security.

<sup>2</sup> Taxable Equivalent yield (TEY) assumes the tax bracket shown. Income may be subject to state and/or local taxes and/or the alternative minimum tax (AMT).

NA: Not Available

\*\*Standard & Poor's (S&P) Corporate Bond Ratings: AA means high quality and subject to very low credit risk. A means upper-medium grade and subject to low credit risk. BBB means subject to moderate credit risk; these obligations are considered medium-grade and as such may possess certain speculative characteristics. BB is judged to have speculative elements, subject to substantial credit risk.

GNMA yields are bond equivalent yields based on generic issues for varying coupons. They do not represent Consensus GNMA issues. Average life is a means to measure the time until all principal is returned for securities that return principal over time vs. in one lump sum. The yield and average life are calculated using a prepayment assumption that may or may not be met.

The assumption used for the calculations is the median of 12 mortgage brokers' estimated prepayment speeds. Spread represents the implied risk premium an investor will receive over an equivalent investment in a U.S. Treasury security. For GNMA's, this spread is an option-adjusted spread as it factors in the series of embedded options inherent in mortgage-backed securities.

Pre-refunded municipal bond is a bond that the issuer decided to redeem from the bondholder before its maturity date. After the issuer distributes the new bonds, it will then often purchase Treasury securities that mature around the same time as the original bonds. The interest accumulated from the Treasury securities pays off the interest from the pre-refunded bond. Insured municipal bonds are insured by policies written by commercial insurance companies. The insurance policy is intended to provide for the insurer to pay principal and interest payments to bondholders in the event the issuer defaults.

For municipal yield curves, there is no "constant Treasury" in the 4-, 15-, or 20-year maturity segment to facilitate this calculation.

Notes on Index Returns: Index Returns reflect previous business day's closing value, with the exception of Hedge Fund Index returns which have a one-day lag. Three-year returns are annualized.

Source: Bloomberg; as of October 27, 2022.

## WFII guidance legend

**Most favorable:** WFII's highest conviction guidance that indicates a strong desire to overweight an asset class (or sector) within a portfolio. It also communicates that, over a tactical time frame, WFII views the asset class (or sector) as offering investors a very attractive risk/reward opportunity.

**Favorable:** Guidance that indicates a desire to overweight an asset class within a portfolio. It also communicates that, over a tactical time frame, WFII views the asset class (or sector) as providing investors with an attractive risk/reward opportunity.

**Neutral:** Guidance that indicates a desire to maintain an asset class near the long-term (strategic) allocation guidance within a portfolio. It also communicates that, over a tactical time frame, WFII views the asset class (or sector) as providing investors with an acceptable risk/reward opportunity.

**Unfavorable:** This WFII guidance level indicates a desire to underweight an asset class (or sector) within a portfolio. It also communicates that, over a tactical time frame, WFII does not view the asset class (or sector) as providing investors with an attractive risk/reward opportunity.

**Most unfavorable:** WFII's highest conviction guidance indicating a strong belief in underweighting an asset class within a portfolio. This also communicates that, over a tactical time frame, WFII views the asset class (or sector) as offering investors a very unattractive risk/reward opportunity.

## Investment objectives definitions

### Income

Income investment objectives emphasize current income with minimal consideration for capital appreciation and usually have less exposure to more volatile growth assets but can still experience losses.

Conservative Income investors generally assume lower risk but may still experience losses or have lower expected income returns. Composition: 2% Bloomberg U.S. Treasury Bills (1–3 Month) Index, 72% Bloomberg U.S. Aggregate Bond Index, 3% Bloomberg U.S. Corporate High Yield Bond Index, 3% JPM EMBI Global Index, 12% S&P 500 Index, 4% Russell Midcap Index, 2% MSCI EAFE Index, 2% Bloomberg Commodity Index.

Moderate Income investors are willing to accept a modest level of risk that may result in increased losses in exchange for the potential to receive modest income returns. Composition: 2% Bloomberg U.S. Treasury Bills (1–3 Month) Index, 58% Bloomberg U.S. Aggregate Bond Index, 4% Bloomberg U.S. Corporate High Yield Bond Index, 5% JPM EMBI Global Index, 16% S&P 500 Index, 5% Russell Midcap Index, 4% Russell 2000 Index, 4% MSCI EAFE Index, 2% Bloomberg Commodity Index.

Aggressive Income investors seek a higher level of returns and are willing to accept a higher level of risk that may result in greater losses. Composition: 2% Bloomberg U.S. Treasury Bills (1–3 Month) Index, 45% Bloomberg U.S. Aggregate Bond Index, 6% Bloomberg U.S. Corporate High Yield Bond Index, 8% JPM EMBI Global Index, 19% S&P 500 Index, 7% Russell Midcap Index, 4% Russell 2000 Index, 7% MSCI EAFE Index, 2% Bloomberg Commodity Index.

### Growth & income

Growth & Income investment objectives emphasize a blend of current income and capital appreciation and usually have some exposure to more volatile growth assets.

Conservative Growth & Income investors generally assume a lower amount of risk but may still experience losses or have lower expected returns. Composition: 2% Bloomberg U.S. Treasury Bills (1–3 Month) Index, 39% Bloomberg U.S. Aggregate Bond Index, 6% Bloomberg U.S. Corporate High Yield Bond Index, 5% JPM EMBI Global Index, 20% S&P 500 Index, 8% Russell Midcap Index, 5% Russell 2000 Index, 7% MSCI EAFE Index, 4% MSCI Emerging Markets Index, 4% Bloomberg Commodity Index.

Moderate Growth & Income investors are willing to accept a modest level of risk that may result in increased losses in exchange for the potential to receive modest returns. Composition: 2% Bloomberg U.S. Treasury Bills (1–3 Month) Index, 30% Bloomberg U.S. Aggregate Bond Index, 6% Bloomberg U.S. Corporate High Yield Bond Index, 5% JPM EMBI Global Index, 24% S&P 500 Index, 10% Russell Midcap Index, 6% Russell 2000 Index, 8% MSCI EAFE Index, 5% MSCI Emerging Markets Index, 4% Bloomberg Commodity Index.

Aggressive Growth & Income investors seek a higher level of returns and are willing to accept a higher level of risk that may result in greater losses. Composition: 2% Bloomberg U.S. Treasury Bills (1–3 Month) Index, 20% Bloomberg U.S. Aggregate Bond Index, 7% Bloomberg U.S. Corporate High Yield Bond Index, 6% JPM EMBI Global Index, 28% S&P 500 Index, 12% Russell Midcap Index, 6% Russell 2000 Index, 9% MSCI EAFE Index, 6% MSCI Emerging Markets Index, 4% Bloomberg Commodity Index.

### Growth

Growth investment objectives emphasize capital appreciation with minimal consideration for current income and usually have significant exposure to more volatile growth assets.

Conservative Growth investors generally assume a lower amount of risk but may still experience increased losses or have lower expected growth returns. Composition: 2% Bloomberg U.S. Treasury Bills (1–3 Month) Index, 16% Bloomberg U.S. Aggregate Bond Index, 3% Bloomberg U.S. Corporate High Yield Bond Index, 3% JPM EMBI Global Index, 30% S&P 500 Index, 13% Russell Midcap Index, 8% Russell 2000 Index, 11% MSCI EAFE Index, 9% MSCI Emerging Markets Index, 5% Bloomberg Commodity Index.

Moderate Growth investors are willing to accept a modest level of risk that may result in significant losses in exchange for the potential to receive higher returns. Composition: 2% Bloomberg U.S. Treasury Bills (1–3 Month) Index, 8% Bloomberg U.S. Aggregate Bond Index, 3% Bloomberg U.S. Corporate High Yield Bond Index, 3% JPM EMBI Global Index, 31% S&P 500 Index, 14% Russell Midcap Index, 10% Russell 2000 Index, 12% MSCI EAFE Index, 12% MSCI Emerging Markets Index, 5% Bloomberg Commodity Index.

Aggressive Growth investors seek a higher level of returns and are willing to accept a higher level of risk that may result in more significant losses. Composition: 2% Bloomberg U.S. Treasury Bills (1–3 Month) Index, 3% Bloomberg U.S. Aggregate Bond Index, 2% JPM EMBI Global Index, 28% S&P 500 Index, 16% Russell Midcap Index, 13% Russell 2000 Index, 16% MSCI EAFE Index, 15% MSCI Emerging Markets Index, 5% Bloomberg Commodity Index.

## **Asset class risks**

Asset allocation and diversification are investment methods used to help manage risk. They do not ensure a profit or protect against a loss. All investing involves risks, including the possible loss of principal. There can be no assurance that any investment strategy will be successful. Investments fluctuate with changes in market and economic conditions and in different environments due to numerous factors some of which may be unpredictable. Each asset class has its own risk and return characteristics. The risks associated with the representative index asset classes include:

Alternative Investments, such as hedge funds, are not suitable for all investors. They are speculative and involve a high degree of risk that is suitable only for those investors who have the financial sophistication and expertise to evaluate the merits and risks of an investment in a fund and for which the fund does not represent a complete investment program. Hedge funds trade in diverse complex strategies that are affected in different ways and at different times by changing market conditions. They employ aggressive investment techniques, including short sales, leverage, swaps, futures contracts, options, forward contracts, and other derivatives. Strategies may, at times, be out of market favor for considerable periods which can result in adverse consequences for the investor.

Commodities: The commodities markets are considered speculative, carry substantial risks, and have experienced periods of extreme volatility. Commodities may be affected by changes in overall market movements, commodity index volatility, changes in interest rates or other factors affecting a particular industry or commodity.

Equity Securities: Stocks are subject to market risk which means their value may fluctuate in response to general economic and market conditions, the prospects of individual companies, and industry sectors. The prices of small/mid-company stocks are generally more volatile than large company stocks. They often involve higher risks because of smaller and mid-sized companies may lack the management expertise, financial resources, product diversification and competitive strengths to endure adverse economic conditions.

Technology and internet-related stocks, especially of smaller, less-seasoned companies, tend to be more volatile than the overall market.

Fixed Income: Investments in fixed-income securities are subject to interest rate and credit risks. Bond prices fluctuate inversely to changes in interest rates. Therefore, a general rise in interest rates can result in the decline in the bond's price. Credit risk is the risk that an issuer will default on payments of interest and principal. High yield fixed income securities are considered speculative, involve greater risk of default, and tend to be more volatile than investment grade fixed income securities. All fixed income investments may be worth less than their original cost upon redemption or maturity. U.S. government securities are backed by the full faith and credit of the federal government as to payment of principal and interest if held to maturity. Although free from credit risk, they are subject to interest rate risk.

Foreign/Emerging Markets: Investing in foreign securities presents certain risks not associated with domestic investments, such as currency fluctuation, political and economic instability, and different accounting standards. This may result in greater share price volatility. These risks are heightened in emerging markets.

Real Estate: Investing in real estate investment trusts (REITs) have special risks, including possible illiquidity of the underlying properties, credit risk, interest rate fluctuations, and the impact of varied economic conditions.

## Definitions

Ifo Business Climate Index is a closely followed leading indicator for economic activity in Germany.

The personal consumption expenditure (PCE) measure is the component statistic for consumption in gross domestic product (GDP). It is essentially a measure of goods and services targeted towards individuals and consumed by individuals.

Bloomberg Multiverse Index provides a broad-based measure of the global fixed-income bond market. The index represents the union of the Global Aggregate Index and the Global High Yield Index and captures investment grade and high yield securities in all eligible currencies. Standalone indexes such as the Euro Floating-Rate ABS Index and the Chinese Aggregate Index are excluded. The Multiverse Index family includes a wide range of standard and customized sub-indexes by sector, quality, maturity, and country.

Bloomberg Municipal Bond Index (from Lehman Brothers Municipal Bond Index) represents municipal bonds with a minimum credit rating of at least Baa, an outstanding par value of at least \$3 million, and a remaining maturity of at least one year. The Index excludes taxable municipal bonds, bonds with floating rates, derivatives, and certificates of participation. The Bloomberg 10-Year Municipal Index is the 10 Year (8-12) component of the Municipal Bond Index.

Bloomberg Municipal High Yield Bond Index is composed of non-investment grade U.S. municipal securities with a remaining maturity of one year or more.

Bloomberg U.S. Aggregate Bond Index is composed of the Bloomberg Capital U.S. Government/Credit Index and the Bloomberg Capital U.S. Mortgage-Backed Securities Index, and includes Treasury issues, agency issues, corporate bond issues, and mortgage-backed securities.

Bloomberg U.S. Aggregate 1-3 Year Bond Index is composed of the Bloomberg U.S. Government/Credit Index and the Bloomberg U.S. Mortgage-Backed Securities Index, and includes Treasury issues, agency issues, corporate bond issues, and mortgage-backed securities with maturities of 1-3 years.

Bloomberg U.S. Aggregate 5-7 Year Bond Index is composed of the Bloomberg U.S. Government/Credit Index and the Bloomberg U.S. Mortgage-Backed Securities Index, and includes Treasury issues, agency issues, corporate bond issues, and mortgage-backed securities with maturities of 5-7 years.

Bloomberg U.S. Aggregate 10+ Year Bond Index is composed of the Bloomberg U.S. Government/Credit Index and the Bloomberg U.S. Mortgage-Backed Securities Index, and includes Treasury issues, agency issues, corporate bond issues, and mortgage-backed securities with maturities of 10 years or more.

Bloomberg US Corporate Bond Index measures the investment grade, fixed-rate, taxable corporate bond market. It includes USD-denominated securities publicly issued by US and non-US industrial, utility and financial issuers.

Bloomberg U.S. Corporate High Yield Index covers the universe of fixed-rate, noninvestment-grade debt.

Bloomberg 1-3 Month U.S. Treasury Bill Index includes all publicly issued zero-coupon U.S. Treasury Bills that have a remaining maturity of less than 3 months and more than 1 month, are rated investment grade, and have \$250 million or more of outstanding face value. In addition, the securities must be denominated in U.S. dollars and must be fixed rate and non-convertible.

Bloomberg US Treasury Index measures US dollar-denominated, fixed-rate, nominal debt issued by the US Treasury. Treasury bills are excluded by the maturity constraint but are part of a separate Short Treasury Index. STRIPS are excluded from the index because their inclusion would result in double-counting. The US Treasury Index is a component of the US Aggregate, US Universal, Global Aggregate and Global Treasury Indexes. The US Treasury Index was launched on January 1, 1973.

Bloomberg Commodity Index is designed to be a highly liquid and diversified benchmark for commodities as an asset class. The index is composed of futures contracts on physical commodities. No related group of commodities (e.g., energy, precious metals, livestock, and grains) may constitute more than 33% of the index as of the annual re-weightings of the components. No single commodity may constitute less than 2% of the index.

CBOE Market Volatility Index (VIX) is a key measure of market expectations of near-term volatility conveyed by S&P 500 stock index option prices.

Chicago Fed National Activity Index (CFNAI) is a monthly index designed to gauge overall economic activity and related inflationary pressure.

Conference Board Consumer Confidence Index<sup>®</sup> (CCI) is a barometer of the health of the U.S. economy from the perspective of the consumer. The index is based on consumers' perceptions of current business and employment conditions, as well as their expectations for six months hence regarding business conditions, employment, and income.

DAX German Stock Index represents 30 of the largest and most liquid German companies traded on the Frankfurt Stock Exchange.

Dow Jones Industrial Average is an unweighted index of 30 "blue-chip" industrial U.S. stocks.

FTSE EPRA/NAREIT Developed Index is designed to track the performance of listed real-estate companies and REITs in developed countries worldwide.

FTSE NAREIT Global Real Estate Index measures the performance of listed real estate companies and REITs worldwide, the series acts as a performance measure of the overall market.

Import Price Index is created by compiling the prices of goods purchased in the U.S. but produced out of country (imports).

JP Morgan Emerging Markets Bond Index Global (EMBI Global), which currently covers 27 emerging market countries. Included in the EMBI.

JP Morgan Global Ex United States Bond Index is a total return, market capitalization weighted index, rebalanced monthly consisting of the following countries: Australia, Germany, Spain, Belgium, Italy, Sweden, Canada, Japan, United Kingdom, Denmark, Netherlands, and France.

JP Morgan Government Bond Index (GBI) Global Ex-United States, which is a total return, market capitalization weighted index, rebalanced monthly consisting of the following countries: Australia, Germany, Spain, Belgium, Italy, Sweden, Canada, Japan, United Kingdom, Denmark, Netherlands, and France.

MSCI China Index captures large and mid-cap representation across China H shares, B shares, Red Chips and P Chips. With 140 constituents, the index covers about 85% of the China equity universe.

MSCI Developed and Emerging Market Country Indexes are designed to measure the performance of the large and mid-cap segments of the individual country markets and cover approximately 85% of the free-float-adjusted or equity universe in each country.

MSCI EAFE Index (Europe, Australasia, Far East) is a free float-adjusted market capitalization index that is designed to measure the equity market performance of developed markets, excluding the US & Canada. The Index consists of the following 21 developed market country indexes: Australia, Austria, Belgium, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, the Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, and the United Kingdom.

MSCI Emerging Markets Index is a free float-adjusted market capitalization index that is designed to measure equity market performance of emerging markets. The index consists of approximately 23 emerging markets.

MSCI Frontier Markets Index is a free float-adjusted market capitalization index that is designed to measure equity market performance of frontier markets. The MSCI Frontier Markets Index consists of the following 24 frontier market country indexes: Argentina, Bahrain, Bangladesh, Bulgaria, Croatia, Estonia, Jordan, Kenya, Kuwait, Lebanon, Lithuania, Morocco, Kazakhstan, Mauritius, Nigeria, Oman, Pakistan, Romania, Serbia, Slovenia, Sri Lanka, Tunisia, Ukraine, and Vietnam.

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NASDAQ Composite Index measures the market value of all domestic and foreign common stocks, representing a wide array of more than 5,000 companies, listed on the NASDAQ Stock Market.

Purchasing Managers Indexes (PMI) are indicators of the economic health of the manufacturing sector of the countries or regions noted. The PMI index is based on five major indicators: new orders, inventory levels, production, supplier deliveries and the employment environment. A PMI of more than 50 represents expansion when compared to the previous month. A PMI reading under 50 represents a contraction, and a reading at 50 indicates no change.

Russell 1000® Growth Index represents the large-cap growth segment of the U.S. equity universe.

Russell 1000® Value index represents the large cap value segment of the U.S. equity universe.

Russell Midcap Index measures the performance of the 800 smallest companies in the Russell 1000 Index, which represent approximately 25% of the total market capitalization of the Russell 1000 Index.

Russell 2000® Index measures the performance of the 2,000 smallest companies in the Russell 3000® Index, which represents approximately 8% of the total market capitalization of the Russell 3000®.

Russell 3000® Index measures the performance of the 3,000 largest U.S. companies based on total market capitalization, which represents approximately 98% of the investable U.S. equity market

S&P 500 Index is a capitalization-weighted index calculated on a total-return basis with dividends reinvested. The index includes 500 widely held U.S. market industrial, utility, transportation, and financial companies.

S&P CoreLogic Case-Shiller Home Price Indexes measures U.S. residential real estate prices, tracking changes in the value of residential real estate across the U.S. as well as in 20 metropolitan areas.

S&P Global Infrastructure Index provides liquid and tradable exposure to 75 companies from around the world that represent the listed infrastructure universe. To create diversified exposure cross the global listed infrastructure market, the index has balanced weights a cross three distinct infrastructure clusters: Utilities, Transportation, and Energy.

U.S. Dollar Index (DXY) measures the value of the U.S. dollar relative to majority of its most significant trading partners. This index is similar to other trade-weighted indexes, which also use the exchange rates from the same major currencies.

The HFRI Fund Weighted Composite Index is a global, equal-weighted index of over 2,000 single-manager funds that report to HFR Database. Constituent funds report monthly net-of-all-fees performance in U.S. dollars and have a minimum of \$50 million under management or a 12-month track record of active performance. The HFRI Fund Weighted Composite Index does not include Funds of Hedge Funds.

The HFRI Relative Value Index: maintains positions in which the investment thesis is predicated on realization of a valuation discrepancy in the relationship between multiple securities. Managers employ a variety of fundamental and quantitative techniques to establish investment theses, and security types range broadly across equity, fixed income, derivative or other security types. Fixed income strategies are typically quantitatively driven to measure the existing relationship between instruments and, in some cases, identify attractive positions in which the risk adjusted spread between these instruments represents an attractive opportunity for the investment manager. RV position may be involved in corporate transactions also, but as opposed to ED exposures, the investment thesis is predicated on realization of a pricing discrepancy between related securities, as opposed to the outcome of the corporate transaction.

The HFRI Macro Index: Macro: Investment Managers which trade a broad range of strategies in which the investment process is predicated on movements in underlying economic variables and the impact these have on equity, fixed income, hard currency and commodity markets. Managers employ a variety of techniques, both discretionary and systematic analysis, combinations of top-down and bottom-up theses, quantitative and fundamental approaches and long and short term holding periods. Although some strategies employ RV techniques, Macro strategies are distinct from RV strategies in that the primary investment thesis is predicated on predicted or future movements in the underlying instruments, rather than realization of a valuation discrepancy between securities. In a similar way, while both Macro and equity hedge managers may hold equity securities, the overriding investment thesis is predicated on the impact movements in underlying macroeconomic variables may have on security prices, as opposes to EH, in which the fundamental characteristics on the company are the most significant are integral to investment thesis.

HFRI Event Driven Index: Event-Driven: Investment Managers who maintain positions in companies currently or prospectively involved in corporate transactions of a wide variety including but not limited to mergers, restructurings, financial distress, tender offers, shareholder buybacks, debt exchanges, security issuance or other capital structure adjustments. Security types can range from most senior in the capital structure to most junior or subordinated, and frequently involve additional

derivative securities. Event Driven exposure includes a combination of sensitivities to equity markets, credit markets and idiosyncratic, company specific developments. Investment theses are typically predicated on fundamental characteristics (as opposed to quantitative), with the realization of the thesis predicated on a specific development exogenous to the existing capital structure.

Equity Hedge: Investment Managers who maintain positions both long and short in primarily equity and equity derivative securities. A wide variety of investment processes can be employed to arrive at an investment decision, including both quantitative and fundamental techniques; strategies can be broadly diversified or narrowly focused on specific sectors and can range broadly in terms of levels of net exposure, leverage employed, holding period, concentrations of market capitalizations and valuation ranges of typical portfolios. EH managers would typically maintain at least 50 percent exposure to, and may in some cases be entirely invested in, equities, both long and short.

Note: The HFRI Indexes are based on information self-reported by hedge fund managers that decide, on their own, at any time, whether or not they want to provide, or continue to provide, information to HFR Asset Management, L.L.C. ("HFR"). Results for funds that go out of business are included in the index until the date that they cease operations. Therefore, these indexes may not be complete or accurate representations of the hedge fund universe and may be biased in several ways.

## **Disclosures**

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