Vanguard

Prepared for

Episcopal Foundation of Dallas

November 2023

Agenda

I. Performance review
II. Market volatility & rates
III. AlphaNasdaq comparison
IV. Markets and economy
V. Appendix

Presented by:

Chris Moore, CFA, CFP®
Senior Investment Consultant
Vanguard Institutional Advisory Services®

Performance review

Portfolio monthly snapshot

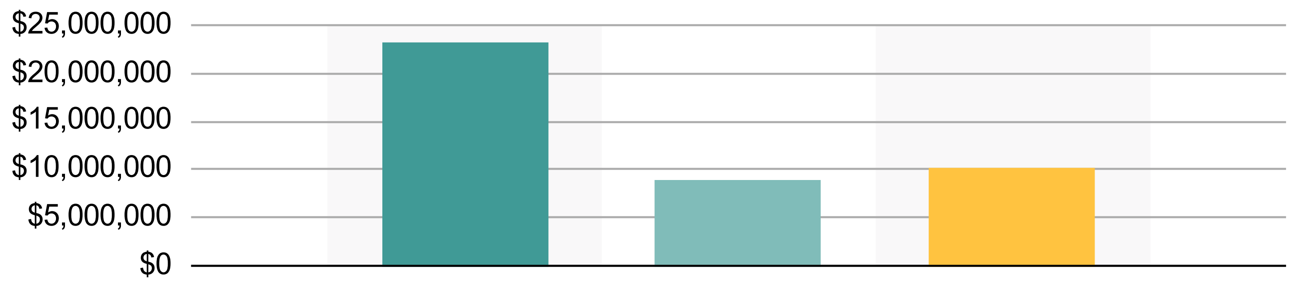
Episcopal Foundation of Dallas Consolidated

As of September 30, 2023

Cash flow and market activity by portfolio

	One Month	Year-to-Date	One Year
Beginning Market Value	$43,591,741.61	$40,039,111.59	$36,896,243.94
Net Cash Flow	-$85,730.52	-$1,012,942.77	-$1,040,313.45
Net Capital Appreciation	-$1,770,957.47	$2,290,682.11	$5,081,303.42
Investment Income	$98,323.96	$516,526.65	$896,143.67
Ending Market Value	**$41,833,377.58**	**$41,833,377.58**	**$41,833,377.58**

Current asset allocation by sub-asset class



	U.S. Equity	Non-U.S. Equity	U.S. Fixed Income
Current	$22,991,031	$8,828,926	$10,013,421
Current %	54.96%	21.10%	23.94%
Policy %	53.00%	22.00%	25.00%
Difference	1.96%	-0.90%	-1.06%

Performance summary

	1 mo (%)	3 mo (%)	YTD (%)	1 yr (%)	3 yrs (%)	5 yrs (%)	10 yrs (%)	Since inception	Inception date
Client portfolio (gross)	-3.84	-3.09	7.06	16.30	5.15	5.64	6.96	7.50	12/31/09
Client portfolio (net)	-3.84	-3.13	6.97	16.15	5.03	5.38	6.62	7.26	12/31/09
Policy benchmark	-3.84	-3.23	7.44	15.19	4.30	5.19	6.60	7.70	12/31/09

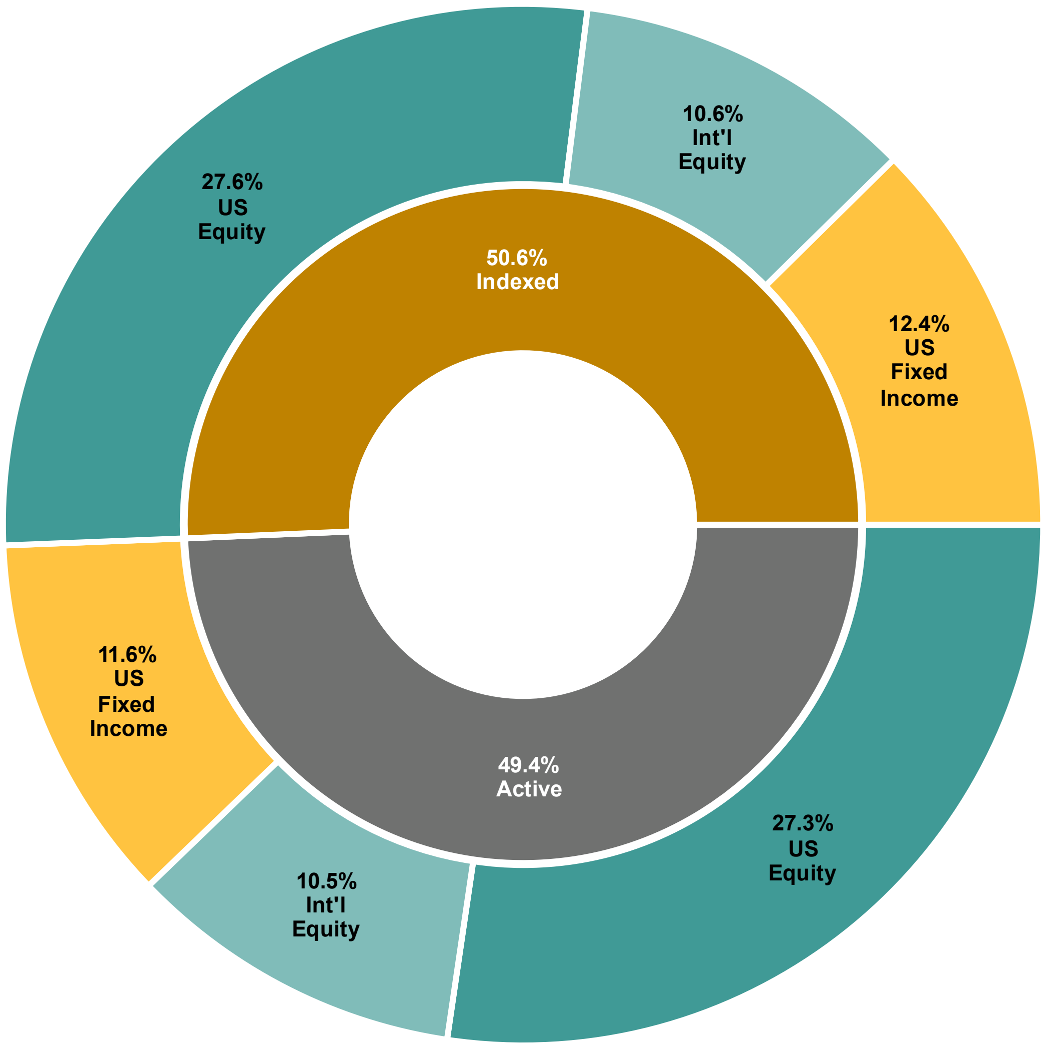
Source: Vanguard. See Benchmark allocation history for description of what the policy benchmark represents. Policy Benchmark is rebalanced monthly. Portfolio is generally rebalanced quarterly, but may vary. **Past performance is not a guarantee of future results.** Diversification and asset allocation can not ensure profit or prevent loss. All returns shown are time-weighted (TWR). Gross Portfolio returns include the deduction of all underlying fund expense ratios, but are gross of advisory, service fees, and purchase/redemption fees applied to the client portfolio. Net Portfolio returns are net of all advisory and security-level fees and expenses. Both Gross and Net returns do reflect the reinvestment of dividends, capital gains, and interest but do not reflect the deduction of taxes. Had those expenses been deducted then performance would have been lower. Indexes are unmanaged; therefore direct investment is not possible. Index returns do not reflect deduction of fees and expenses but do reflect reinvestment of dividends, capital gains, and interest. **Read additional information in Benchmark and Disclosures sections.**

Portfolio allocation snapshot–active and indexed

Episcopal Foundation of Dallas Consolidated

As of September 30, 2023

Active/Index allocation



Sub-asset classes and manager styles

Active/Index	Sub-asset class	Manager style	
Active	US Equity	Large Growth	14.1%
Active	US Equity	Large Value	13.3%
Active	Int'l Equity	Foreign Large Growth	5.1%
Active	Int'l Equity	Foreign Large Value	5.3%
Active	US Fixed Income	Intermediate-Term Investment Grade	7.7%
Active	US Fixed Income	Short-Term Investment Grade	3.9%
Index	US Equity	Large Blend	27.6%
Index	Int'l Equity	Foreign Large Blend	10.6%
Index	US Fixed Income	Intermediate-Term Government	12.4%

The Active/Indexed allocation percentages represent the client's current allocations to the total portfolio. **Neither asset allocation or diversification can guarantee a profit or prevent loss.**

Performance summary

Episcopal Foundation of Dallas Consolidated

For the periods ended September 30, 2023

	Mkt value ($)	% of portfolio	Policy benchmark	1 mo (%)	3 mo (%)	YTD (%)	1 yr (%)	3 yrs (%)	5 yrs (%)	10 yrs (%)	Since inception	Inception date
Client portfolio (gross)	41,833,378	100.0	100.0	-3.84	-3.09	7.06	16.30	5.15	5.64	6.96	7.50	12/31/09
Client portfolio (net)				-3.84	-3.13	6.97	16.15	5.03	5.38	6.62	7.26	12/31/09
Policy benchmark				-3.84	-3.23	7.44	15.19	4.30	5.19	6.60	7.70	12/31/09
Equity	**31,819,957**	**76.1**	**75.0**	**-4.33**	**-3.29**	**9.43**	**21.26**	**8.33**	**7.08**	**-**	**8.36**	**07/31/15**
Equity - Policy benchmark				-4.30	-3.30	10.32	20.06	7.26	6.62	-	7.88	07/31/15
Domestic Equity	**22,991,031**	**55.0**	**53.0**	**-4.37**	**-2.35**	**11.19**	**21.62**	**11.58**	**9.11**	**-**	**10.54**	**07/31/15**
International Equity	**8,828,926**	**21.1**	**22.0**	**-4.24**	**-5.66**	**4.89**	**20.15**	**2.82**	**3.60**	**-**	**4.81**	**07/31/15**
Fixed Income	**10,013,421**	**23.9**	**25.0**	**-2.22**	**-2.44**	**-0.01**	**2.21**	**-4.27**	**0.45**	**-**	**1.04**	**07/31/15**
Fixed Income - Policy benchmark				-2.46	-3.11	-1.06	1.18	-4.89	0.18	-	0.81	07/31/15
Domestic Fixed Income	**10,013,421**	**23.9**	**25.0**	**-2.22**	**-2.44**	**-0.01**	**2.25**	**-4.30**	**0.61**	**-**	**1.04**	**07/31/15**

Source: Vanguard. See Benchmark allocation history for description of what the policy benchmark and asset-class benchmarks represent. Policy Benchmark is rebalanced monthly. Portfolio is generally rebalanced quarterly, but may vary. All Returns greater than one year are annualized. **Past performance is not a guarantee of future results**. Diversification and asset allocation can not ensure profit or prevent loss. All returns shown are time-weighted (TWR). Gross Portfolio returns include the deduction of all underlying fund expense ratios, but are gross of advisory, service fees, and purchase/redemption fees applied to the client portfolio. Net Portfolio returns are net of all advisory and security-level fees and expenses. Both Gross and Net returns do reflect the reinvestment of dividends, capital gains, and interest but do not reflect the deduction of taxes. Had those expenses been deducted then performance would have been lower. Indexes are unmanaged; therefore direct investment is not possible. Unless otherwise noted, index returns do not reflect deduction of fees and expenses but do reflect reinvestment of dividends, capital gains, and interest. **Read additional information in Benchmark and Disclosures sections.**

Performance summary–by securities

Episcopal Foundation of Dallas Consolidated

For the periods ended September 30, 2023

	Mkt value ($)	% of portfolio	Policy benchmark	1 mo (%)	3 mo (%)	YTD (%)	1 yr (%)	3 yrs (%)	5 yrs (%)	10 yrs (%)	Since inception	Inception date
Client portfolio (gross)	41,833,378	100.0	100.0	-3.84	-3.09	7.06	16.30	5.15	5.64	6.96	7.50	12/31/09
Client portfolio (net)				-3.84	-3.13	6.97	16.15	5.03	5.38	6.62	7.26	12/31/09
Policy benchmark				-3.84	-3.23	7.44	15.19	4.30	5.19	6.60	7.70	12/31/09
Equity	**31,819,957**	**76.1**	**75.0**	**-4.33**	**-3.29**	**9.43**	**21.26**	**8.33**	**7.08**	**-**	**8.36**	**07/31/15**
Equity - Policy benchmark				-4.30	-3.30	10.32	20.06	7.26	6.62	-	7.88	07/31/15
Domestic Equity	**22,991,031**	**55.0**	**53.0**	**-4.37**	**-2.35**	**11.19**	**21.62**	**11.58**	**9.11**	**-**	**10.54**	**07/31/15**
Domestic Equity - Policy benchmark				-4.79	-3.30	12.34	20.37	9.26	9.07	-	10.50	07/31/15
- Vanguard Total Stock Market Index Fund Institutional Shares	**11,556,498**	**27.6**	**-**	**-4.79**	**-3.29**	**12.34**	**20.38**	**9.25**	**9.06**	**-**	**10.49**	**07/31/15**
Spliced Total Stock Market Index				-4.79	-3.30	12.34	20.37	9.26	9.07	-	10.50	07/31/15
Multi-Cap Core Funds Average				-4.60	-3.64	8.56	17.17	8.02	7.02	-	8.05	07/31/15
- Vanguard PRIMECAP Fund Admiral Shares	**5,879,508**	**14.1**	**-**	**-3.83**	**-0.28**	**16.55**	**28.14**	**11.27**	**9.15**	**-**	**12.18**	**07/31/15**
S&P 500 Index				-4.77	-3.27	13.07	21.62	10.15	9.92	-	11.16	07/31/15
Multi-Cap Growth Funds Average				-5.62	-4.86	16.38	18.46	1.09	6.86	-	8.93	07/31/15
Russell 1000 Growth Index				-5.44	-3.13	24.98	27.72	7.97	12.42	-	13.84	07/31/15

Source: Vanguard. See Benchmark allocation history for description of what the policy benchmark and asset-class benchmarks represent. Policy Benchmark is rebalanced monthly. Portfolio is generally rebalanced quarterly, but may vary. All Returns greater than one year are annualized. **Past performance is not a guarantee of future results**. Diversification and asset allocation can not ensure profit or prevent loss. All returns shown are time-weighted (TWR). Gross Portfolio returns include the deduction of all underlying fund expense ratios, but are gross of advisory, service fees, and purchase/redemption fees applied to the client portfolio. Net Portfolio returns are net of all advisory and security-level fees and expenses. Both Gross and Net returns do reflect the reinvestment of dividends, capital gains, and interest but do not reflect the deduction of taxes. Had those expenses been deducted then performance would have been lower. Indexes are unmanaged; therefore direct investment is not possible. Unless otherwise noted, index returns do not reflect deduction of fees and expenses but do reflect reinvestment of dividends, capital gains, and interest. **Read additional information in Benchmark and Disclosures sections.**

Performance summary–by securities (continued)

Episcopal Foundation of Dallas Consolidated

For the periods ended September 30, 2023

	Mkt value ($)	% of portfolio	Policy benchmark	1 mo (%)	3 mo (%)	YTD (%)	1 yr (%)	3 yrs (%)	5 yrs (%)	10 yrs (%)	Since inception	Inception date
- **Vanguard Windsor Fund Admiral Shares**	**5,555,024**	**13.3**	**-**	**-4.09**	**-2.57**	**3.64**	**17.85**	**16.62**	**8.97**	**-**	**8.86**	**07/31/15**
Russell 1000 Value Index				-3.86	-3.16	1.79	14.44	11.05	6.23	-	7.51	07/31/15
Multi-Cap Value Funds Average				-3.53	-2.52	2.54	15.43	12.35	5.57	-	6.85	07/31/15
• **International Equity**	**8,828,926**	**21.1**	**22.0**	**-4.24**	**-5.66**	**4.89**	**20.15**	**2.82**	**3.60**	**-**	**4.81**	**07/31/15**
International Equity - Policy benchmark				-3.12	-3.33	5.48	20.40	4.13	2.86	-	3.88	07/31/15
- **Vanguard Total International Stock Index Fund Institutional Shares**	**4,452,452**	**10.6**	**-**	**-3.32**	**-4.01**	**5.04**	**20.50**	**3.89**	**2.76**	**-**	**3.82**	**07/31/15**
Spliced Total International Stock Index				-3.12	-3.33	5.48	20.40	4.13	2.86	-	3.88	07/31/15
International Funds Average				-3.91	-5.01	5.77	22.72	3.41	2.65	-	3.39	07/31/15
- **Vanguard International Value Fund**	**2,225,934**	**5.3**	**-**	**-3.99**	**-5.38**	**6.30**	**23.05**	**7.82**	**3.20**	**-**	**3.75**	**07/31/15**
Spliced International Index				-3.16	-3.77	5.34	20.93	3.89	2.67	-	3.61	07/31/15
International Funds Average				-3.91	-5.01	5.77	22.72	3.41	2.65	-	3.39	07/31/15
- **Vanguard International Growth Fund Admiral Shares**	**2,150,539**	**5.1**	**-**	**-6.31**	**-9.17**	**3.09**	**16.10**	**-4.69**	**4.86**	**-**	**7.36**	**07/31/15**
Spliced International Index				-3.16	-3.77	5.34	20.93	3.89	2.67	-	3.61	07/31/15
International Funds Average				-3.91	-5.01	5.77	22.72	3.41	2.65	-	3.39	07/31/15

Source: Vanguard. See Benchmark allocation history for description of what the policy benchmark and asset-class benchmarks represent. Policy Benchmark is rebalanced monthly. Portfolio is generally rebalanced quarterly, but may vary. All Returns greater than one year are annualized. **Past performance is not a guarantee of future results**. Diversification and asset allocation can not ensure profit or prevent loss. All returns shown are time-weighted (TWR). Gross Portfolio returns include the deduction of all underlying fund expense ratios, but are gross of advisory, service fees, and purchase/redemption fees applied to the client portfolio. Net Portfolio returns are net of all advisory and security-level fees and expenses. Both Gross and Net returns do reflect the reinvestment of dividends, capital gains, and interest but do not reflect the deduction of taxes. Had those expenses been deducted then performance would have been lower. Indexes are unmanaged; therefore direct investment is not possible. Unless otherwise noted, index returns do not reflect deduction of fees and expenses but do reflect reinvestment of dividends, capital gains, and interest. **Read additional information in Benchmark and Disclosures sections.**

Performance summary–by securities (continued)

Episcopal Foundation of Dallas Consolidated

For the periods ended September 30, 2023

	Mkt value ($)	% of portfolio	Policy benchmark	1 mo (%)	3 mo (%)	YTD (%)	1 yr (%)	3 yrs (%)	5 yrs (%)	10 yrs (%)	Since inception	Inception date
Fixed Income	**10,013,421**	**23.9**	**25.0**	**-2.22**	**-2.44**	**-0.01**	**2.21**	**-4.27**	**0.45**	**-**	**1.04**	**07/31/15**
Fixed Income - Policy benchmark				-2.46	-3.11	-1.06	1.18	-4.89	0.18	-	0.81	07/31/15
Domestic Fixed Income	**10,013,421**	**23.9**	**25.0**	**-2.22**	**-2.44**	**-0.01**	**2.25**	**-4.30**	**0.61**	**-**	**1.04**	**07/31/15**
Domestic Fixed Income - Policy benchmark				-2.46	-3.11	-1.06	0.78	-5.18	0.18	-	0.66	07/31/15
- Vanguard Total Bond Market Index Fund Institutional Shares	**5,176,490**	**12.4**	**-**	**-2.48**	**-3.08**	**-0.91**	**0.74**	**-**	**-**	**-**	**-7.57**	**10/31/21**
Spliced Bloomberg U.S. Aggregate Float Adjusted Index				-2.46	-3.11	-1.06	0.78	-	-	-	-7.53	10/31/21
Spliced Intermediate Investment-Grade Debt Funds Average				-2.45	-2.96	-0.81	0.91	-	-	-	-7.74	10/31/21
- Vanguard Intermediate-Term Investment-Grade Fund Admiral Shares	**3,203,338**	**7.7**	**-**	**-2.64**	**-2.78**	**0.38**	**3.97**	**-4.45**	**1.10**	**-**	**1.51**	**07/31/15**
Bloomberg U.S. 5-10 Year Credit Bond Index				-2.57	-2.71	0.26	3.89	-4.51	1.30	-	1.81	07/31/15
Spliced Core Bond Funds Average				-2.45	-2.96	-0.81	0.91	-4.95	0.09	-	0.59	07/31/15
- Vanguard Short-Term Investment-Grade Fund Admiral Shares	**1,633,593**	**3.9**	**-**	**-0.51**	**0.36**	**2.13**	**3.88**	**-1.06**	**1.47**	**-**	**1.54**	**07/31/15**
Bloomberg U.S. 1-5 Year Credit Bond Index				-0.49	0.25	1.90	3.72	-1.14	1.60	-	1.58	07/31/15
1-5 Year Investment-Grade Debt Funds Average				-0.23	0.67	2.42	3.69	-1.29	0.82	-	0.96	07/31/15

Source: Vanguard. See Benchmark allocation history for description of what the policy benchmark and asset-class benchmarks represent. Policy Benchmark is rebalanced monthly. Portfolio is generally rebalanced quarterly, but may vary. All Returns greater than one year are annualized. **Past performance is not a guarantee of future results**. Diversification and asset allocation can not ensure profit or prevent loss. All returns shown are time-weighted (TWR). Gross Portfolio returns include the deduction of all underlying fund expense ratios, but are gross of advisory, service fees, and purchase/redemption fees applied to the client portfolio. Net Portfolio returns are net of all advisory and security-level fees and expenses. Both Gross and Net returns do reflect the reinvestment of dividends, capital gains, and interest but do not reflect the deduction of taxes. Had those expenses been deducted then performance would have been lower. Indexes are unmanaged; therefore direct investment is not possible. Unless otherwise noted, index returns do not reflect deduction of fees and expenses but do reflect reinvestment of dividends, capital gains, and interest. **Read additional information in Benchmark and Disclosures sections.**

Investment expense summary

Episcopal Foundation of Dallas Consolidated

As of September 30, 2023

	Market value	% of portfolio	Expense ratio	Estimated expense
Total Equity	**$31,819,956.77**	**76.1%**		**$56,579.84**
Domestic Equity	**$22,991,031.26**	**55.0%**		**$37,247.49**
Vanguard Total Stock Market Index Fund Institutional Shares	$11,556,498.50	27.6%	0.030%	$3,466.95
Vanguard PRIMECAP Fund Admiral Shares	$5,879,508.48	14.1%	0.310%	$18,226.48
Vanguard Windsor Fund Admiral Shares	$5,555,024.28	13.3%	0.280%	$15,554.07
International Equity	**$8,828,925.51**	**21.1%**		**$19,332.34**
Vanguard Total International Stock Index Fund Institutional Shares	$4,452,452.13	10.6%	0.080%	$3,561.96
Vanguard International Value Fund	$2,225,933.90	5.3%	0.380%	$8,458.55
Vanguard International Growth Fund Admiral Shares	$2,150,539.48	5.1%	0.340%	$7,311.83
Total Fixed Income	**$10,013,420.82**	**23.9%**		**$6,648.70**
Domestic Fixed Income	**$10,013,420.82**	**23.9%**		**$6,648.70**
Vanguard Total Bond Market Index Fund Institutional Shares	$5,176,489.88	12.4%	0.035%	$1,811.77
Vanguard Intermediate-Term Investment-Grade Fund Admiral Shares	$3,203,337.94	7.7%	0.100%	$3,203.34
Vanguard Short-Term Investment-Grade Fund Admiral Shares	$1,633,592.99	3.9%	0.100%	$1,633.59
Total	$41,833,377.58	100.0%	0.151%	$63,228.54

Estimated annual investment expenses are shown for public/liquid investments held in the portfolio. If any non-public/illiquid investments are held in the portfolio then they will be excluded due to the variability of fees inherent in that space. Estimated annual investment expenses are forward looking and can be subject to change. Advisory fees paid by the portfolio for all investments held are captured in the Cash flow and market value summary report.

Benchmark performance summary

Episcopal Foundation of Dallas Consolidated

For the periods ended September 30, 2023

	Sep-23 (%)	3 mon (%)	1 yr (%)	3 yrs (%)	5 yrs (%)	10 yrs (%)
Domestic Equity						
CRSP U.S. Total Market Index	-4.79	-3.30	20.37	9.26	9.07	11.24
Russell 1000 Growth Index	-5.44	-3.13	27.72	7.97	12.42	14.48
Russell 1000 Value Index	-3.86	-3.16	14.44	11.05	6.23	8.45
S&P 500 Index	-4.77	-3.27	21.62	10.15	9.92	11.91
S&P MidCap 400 Index	-5.26	-4.20	15.51	12.05	6.06	8.94
S&P SmallCap 600 Index	-6.00	-4.93	10.08	12.10	3.21	8.15
International Equity						
MSCI ACWI ex USA IMI Index Net	-3.24	-3.49	20.65	3.90	2.65	3.52
MSCI EAFE Index	-3.42	-4.11	26.39	5.96	3.36	3.89
Spliced Emerging Markets Index	-1.90	-1.48	11.00	0.28	2.24	2.63
Global Equity						
Spliced Total World Stock Index	-4.10	-3.22	20.71	7.24	6.51	7.79
Domestic Fixed Income						
Bloomberg U.S. 0-5 Year Treasury Inflation Protected Securities Index	-0.18	0.43	3.24	1.90	2.80	1.71
Bloomberg U.S. 5-10 Year Corporate Bond Index	-2.59	-2.69	4.18	-4.47	1.38	2.48
Bloomberg U.S. Aggregate Float Adjusted Index	-2.46	-3.11	0.78	-5.18	0.18	1.16
Bloomberg U.S. Corporate High Yield Bond Index	-1.18	0.46	10.28	1.76	2.96	4.24
Bloomberg U.S. Long Government/Credit Float Adjusted Index	-6.22	-9.37	-2.93	-11.90	-1.21	1.94
Bloomberg U.S. Treasury Inflation Protected Securities Index	-1.85	-2.60	1.25	-1.98	2.12	1.74
Bloomberg U.S. Treasury Strips 20-30 Year Equal Par Bond Index	-11.30	-18.73	-16.48	-22.27	-5.36	0.62
Spliced Bloomberg U.S. Long Treasury Index in USD	-7.29	-11.83	-9.09	-15.73	-2.78	0.75

Source: Vanguard. **Past performance is no guarantee of future results**. Indexes are unmanaged; direct investment is not possible. Unless otherwise indicated, benchmark returns are shown do not reflect deduction of fees and expenses but do reflect reinvestment of dividends, capital gains and interest. **Please read additional information in Benchmark and Disclosures sections.**

Benchmark performance summary (continued)

Episcopal Foundation of Dallas Consolidated

For the periods ended September 30, 2023

	Sep-23 (%)	3 mon (%)	1 yr (%)	3 yrs (%)	5 yrs (%)	10 yrs (%)
International Fixed Income						
Bloomberg Global Aggregate ex-USD Float Adjusted RIC Capped Index Hedged	-1.49	-1.29	2.31	-4.06	0.14	2.01
Bloomberg USD Emerging Markets Government RIC Capped Index	-3.03	-2.87	8.70	-4.66	-0.28	2.16
Global Fixed Income						
Bloomberg Global Aggregate Bond Index	-1.72	-1.82	3.88	-6.44	-1.31	-0.28
Bloomberg Global Aggregate Bond Index Hedged in USD	-1.72	-1.82	2.10	-3.71	0.57	1.84
Domestic Real Estate						
MSCI US REIT Index	-6.78	-7.02	3.18	5.70	2.82	5.94
Real Estate Spliced Index	-7.33	-8.50	-1.14	2.45	2.54	5.62

Source: Vanguard. **Past performance is no guarantee of future results**. Indexes are unmanaged; direct investment is not possible. Unless otherwise indicated, benchmark returns are shown do not reflect deduction of fees and expenses but do reflect reinvestment of dividends, capital gains and interest. **Please read additional information in Benchmark and Disclosures sections.**

Portfolio monthly snapshot

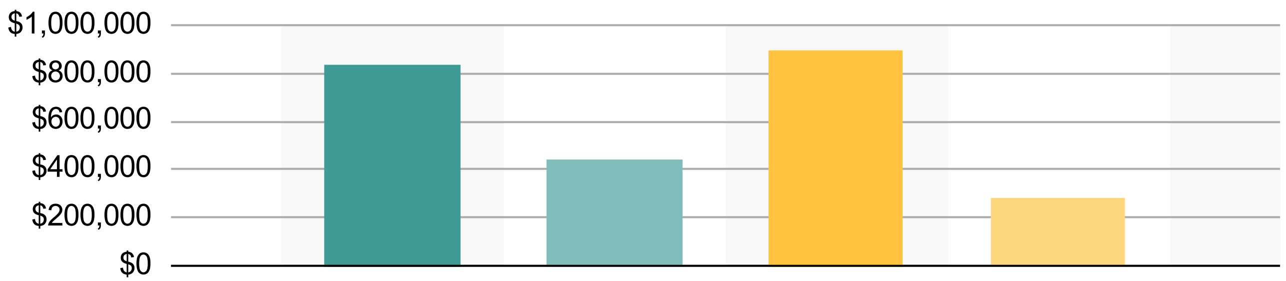
Episcopal Foundation of Dallas - SJES Operating Reserves

As of September 30, 2023

Cash flow and market activity by portfolio

	One Month	Year-to-Date	One Year
Beginning Market Value	$2,521,322.98	$2,340,292.58	$2,208,102.58
Net Cash Flow	$0.00	-$12,161.24	-$16,098.76
Net Capital Appreciation	-$88,216.94	$73,373.99	$188,864.24
Investment Income	$6,264.90	$37,865.61	$58,502.88
Ending Market Value	**$2,439,370.94**	**$2,439,370.94**	**$2,439,370.94**

Current asset allocation by sub-asset class



	U.S. Equity	Non-U.S. Equity	U.S. Fixed Income	Non-U.S. Fixed Income
Current	$832,159	$435,552	$889,410	$282,250
Current %	34.11%	17.86%	36.46%	11.57%
Policy %	31.00%	19.00%	38.00%	12.00%
Difference	3.11%	-1.14%	-1.54%	-0.43%

Performance summary

	1 mo (%)	3 mo (%)	YTD (%)	1 yr (%)	3 yrs (%)	5 yrs (%)	10 yrs (%)	Since inception	Inception date
Client portfolio (gross)	-3.25	-2.88	4.74	11.21	-	-	-	-4.41	07/31/21
Client portfolio (net)	-3.25	-2.93	4.66	11.07	-	-	-	-4.50	07/31/21
Policy benchmark	-3.19	-2.96	4.71	10.64	-	-	-	-4.61	07/31/21

Source: Vanguard. See Benchmark allocation history for description of what the policy benchmark represents. Policy Benchmark is rebalanced monthly. Portfolio is generally rebalanced quarterly, but may vary. **Past performance is not a guarantee of future results.** Diversification and asset allocation can not ensure profit or prevent loss. All returns shown are time-weighted (TWR). Gross Portfolio returns include the deduction of all underlying fund expense ratios, but are gross of advisory, service fees, and purchase/redemption fees applied to the client portfolio. Net Portfolio returns are net of all advisory and security-level fees and expenses. Both Gross and Net returns do reflect the reinvestment of dividends, capital gains, and interest but do not reflect the deduction of taxes. Had those expenses been deducted then performance would have been lower. Indexes are unmanaged; therefore direct investment is not possible. Index returns do not reflect deduction of fees and expenses but do reflect reinvestment of dividends, capital gains, and interest. **Read additional information in Benchmark and Disclosures sections.**

Portfolio monthly snapshot

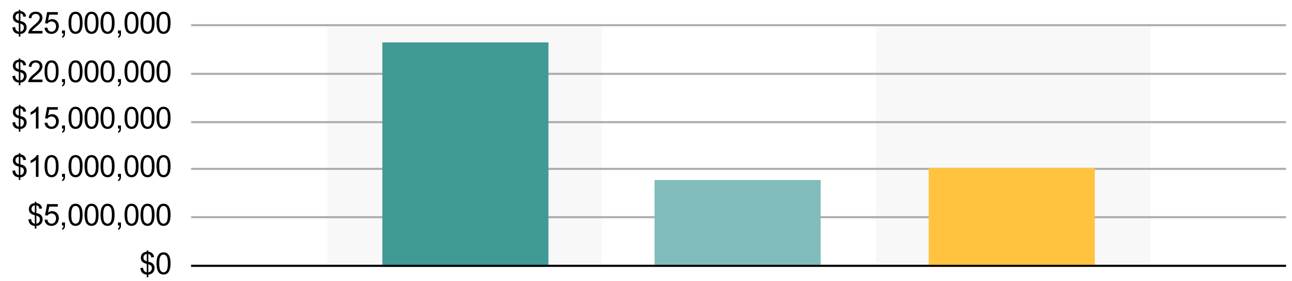
Episcopal Foundation of Dallas

As of September 30, 2023

Cash flow and market activity by portfolio

	One Month	Year-to-Date	One Year
Beginning Market Value	$43,591,741.61	$40,039,111.59	$36,896,243.94
Net Cash Flow	-$85,730.52	-$1,012,942.77	-$1,040,313.45
Net Capital Appreciation	-$1,770,957.47	$2,290,682.11	$5,081,303.42
Investment Income	$98,323.96	$516,526.65	$896,143.67
Ending Market Value	**$41,833,377.58**	**$41,833,377.58**	**$41,833,377.58**

Current asset allocation by sub-asset class



	U.S. Equity	Non-U.S. Equity	U.S. Fixed Income
Current	$22,991,031	$8,828,926	$10,013,421
Current %	54.96%	21.10%	23.94%
Policy %	53.00%	22.00%	25.00%
Difference	1.96%	-0.90%	-1.06%

Performance summary

	1 mo (%)	3 mo (%)	YTD (%)	1 yr (%)	3 yrs (%)	5 yrs (%)	10 yrs (%)	Since inception	Inception date
Client portfolio (gross)	-3.84	-3.09	7.06	16.30	5.15	5.64	-	6.67	06/30/15
Client portfolio (net)	-3.84	-3.13	6.97	16.15	5.03	5.52	-	6.56	06/30/15
Policy benchmark	-3.84	-3.23	7.44	15.19	4.30	5.19	-	6.27	06/30/15

Source: Vanguard. See Benchmark allocation history for description of what the policy benchmark represents. Policy Benchmark is rebalanced monthly. Portfolio is generally rebalanced quarterly, but may vary. **Past performance is not a guarantee of future results.** Diversification and asset allocation can not ensure profit or prevent loss. All returns shown are time-weighted (TWR). Gross Portfolio returns include the deduction of all underlying fund expense ratios, but are gross of advisory, service fees, and purchase/redemption fees applied to the client portfolio. Net Portfolio returns are net of all advisory and security-level fees and expenses. Both Gross and Net returns do reflect the reinvestment of dividends, capital gains, and interest but do not reflect the deduction of taxes. Had those expenses been deducted then performance would have been lower. Indexes are unmanaged; therefore direct investment is not possible. Index returns do not reflect deduction of fees and expenses but do reflect reinvestment of dividends, capital gains, and interest. **Read additional information in Benchmark and Disclosures sections.**

Episcopal Foundation of Dallas - Aggregated Performance Summary

as-of September 30, 2023

	Market Value*	Portfolio Allocation	Three-Month	Year-to-Date	One-Year	Three-Year	Five-Year	Since Inception
Vanguard	$41,833,377	100.00%	-3.13%	6.97%	16.15%	5.03%	5.52%	7.26%
Vanguard Composite Benchmark			-3.23%	7.44%	15.19%	4.30%	5.19%	7.70%
Aggregate Portfolio (net of EFD fee)*	**$41,833,377**	**100.00%**	**-3.27%**	**6.53%**	**15.54%**	**4.46%**	**4.83%**	**7.08%**
Aggregate Composite Benchmark*			**-3.23%**	**7.44%**	**15.19%**	**4.30%**	**5.19%**	**7.79%**

Notes: Return data achieved before February 2016 provided by client. All returns are net of fund-level fees and the Vanguard advisory fee. Aggregate portfolio returns are net of the EFD administrative fee. Vanguard Composite provides a comparison for Vanguard portfolio return and constitutes 42% Spliced Total Stock Market Index/28% Spliced Total International Stock Index/18% Spliced Barclays U.S. Agg Flt-Adj. Index/6% Barclays GA ex-USD Flt-Adj. RIC Capped Index Hedged/6% REIT Spliced Index and has been calculated as-of September 30, 2023. Performance effective date for Vanguard Composite as-of December 31, 2015. Aggregate Composite provides a comparison for Episcopal Foundation of Dallas portfolio and constitutes a weighted average of the Vanguard Composite and HFRI Fund of Funds Composite. Since inception date is January 1, 2010.

**Aggregate portfolio performance and Aggregate composite performance include hedge fund and HFRI performance, respectively, through February 29, 2016 for the Five-Year and Since Inception time periods.*

VIAS advisory fee schedule

Fee schedule

Asset level

First $25m	0.25%
Next $25m	0.10%
Next $50M	0.09%

All-in fee review

Advisory fee*	0.185%	$81,773
Fund expense ratio estimates	0.150%	$66,409
Approximate all-in fees	**0.335%**	**$148,182**

Notes:

*Estimated advisory fee and expense ratio based on assets as of 09/30/2023 of $44,272,749.

Low cost is the key

Average active fund expense ratio*

17 bps
Vanguard

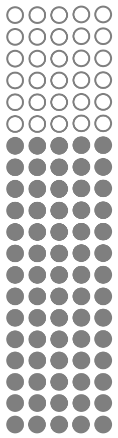
55 bps
Industry

Average active equity funds expense ratio **

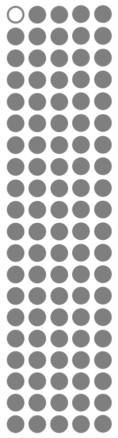
24 bps
Vanguard

is lower than

70%
of U.S.-domiciled **equity index funds**



99%
of U.S.-domiciled **active equity funds**



Sources: Vanguard and Morningstar, Inc., as of December 31, 2022.
* Asset-weighted average of Vanguard active funds and asset-weighted average of industry active funds.
** Asset-weighted average of Vanguard active equity funds.
Notes: The asset-weighted average of Vanguard active funds and Vanguard active equity funds are based on all share classes of Vanguard U.S.-domiciled active funds and Vanguard U.S.-domiciled active equity funds, respectively. Comparisons to non-Vanguard U.S.-domiciled equity index funds and non-Vanguard U.S.-domiciled active equity funds include all share classes of the non-Vanguard funds.
Vanguard calculations, based on data from Morningstar, Inc.; bps = basis points.

Headwinds for active equity mutual fund managers

Percentage of actively managed funds underperforming their style benchmarks*

Ten-year: September 30, 2023

	Value	Blend	Growth
Large	95%	96%	95%
Mid	89%	91%	79%
Small	92%	91%	67%

International

Emerging	Developed	Global
52%	75%	58%

Key

≥ 75%	≥ 50%	< 50%	≥25%	< 25%

Vanguard active equity funds versus their primary and peer group benchmarks**

Ten-year: September 30, 2023

	Below benchmark	Above benchmark
Above peer group average	14%	73%
Below peer group average	8%	5%

The competitive performance data shown represent past performance, which is not a guarantee of future results, and all investments are subject to risks. For the most recent Vanguard fund performance, visit our website at www.vanguard.com/performance.

Note: Performance data reflect periods ending September 30, 2023. Sources: Vanguard calculations, using data from ViFi and Morningstar.

* Style benchmarks are represented by the following indexes—large blend: MSCI US Prime Market 750 Index through January 30, 2013, CRSP US Large Cap Index thereafter; large growth: MSCI US Prime Market Growth Index through April 16, 2013, CRSP US Large Cap Growth Index thereafter; large value: MSCI US Prime Market Value Index through April 16, 2013, CRSP US Large Cap Value Index thereafter; mid blend: MSCI US Mid Cap 450 Index through January 30, 2013, CRSP US Mid Cap Index thereafter; mid growth: MSCI US Mid Cap Growth Index through April 16, 2013, CRSP US Mid Cap Growth Index thereafter; mid value: MSCI US Mid Cap Value Index through April 16, 2013, CRSP US Mid Cap Value Index thereafter; small blend: MSCI US Small Cap 1750 Index through January 30, 2013, CRSP US Small Cap Index thereafter; small growth: MSCI US Small Cap Growth Index through April 16, 2013, CRSP US Small Cap Growth Index thereafter; small value: MSCI US Small Cap Value Index through April 16, 2013, CRSP US Small Cap Value Index thereafter. International and global benchmarks are represented by the following indexes—Emerging: MSCI Emerging Markets Index; Developed: MSCI World Index; Global: MSCI All Country World Index.

** Performance measured relative to each Vanguard fund's respective primary benchmark and current Lipper category average.

For the ten-year period ended September 30, 2023, 20 of 22 Vanguard active fixed income funds outperformed their peer group averages; results will vary for other time periods. Only funds with a minimum [one-, three-, five-, or ten-year history, respectively,] were included in the comparison. (Source: Lipper, a Thomson Reuters Company.)

Vanguard active funds are Barron's top long-term performers

Barron's Best Fund Family Rankings — 10 Year Returns

#1 for 10-year returns in four of the last five years[1]

This award reflects our commitment to outstanding active offerings and long-term investment performance:

- 94% of our active funds outperformed their peer-group average over ten years[2].
- We've been offering active funds since our start, and they now represent more than $1.5 trillion in assets under management[3].
- We have top portfolio manager talent, both internal and external, plus an oversight committee that meets with about 200 asset managers annually to identify new portfolio managers.

1"Barron's Best Fund Families" published February 17, 2023, based on data through 2022. Returns were calculated before any 12b-1 fees, fund loads, or sales charges were deducted. Index funds were excluded. Results were asset-weighted and ranked against actively managed peers in the relevant Lipper category. For more information, please see the Important Information section or visit www.barron's.com. For the 10-year period, Vanguard ranked #1 in 2022, 2021, 2020, 2019, and ranked #3 in 2018. For 2022, Vanguard is ranked #21 for 1-year performance and #18 for 5-year performance.
2 Source: Lipper, a Thomson Reuters Company.
For the ten-year period, 87 of 93 Vanguard actively managed funds outperformed their peer-group averages. All data as of December 31, 2022. Results will vary for other time periods. Only funds with a minimum of ten-year history were included in the comparison.
Note that the competitive performance data shown represent past performance, which is not a guarantee of future results, and that all investments are subject to risks. For the most recent performance, visit our website at www.vanguard.com/performance.
3 Source: Vanguard, as of December 31, 2022.

Important information

Vanguard ranked first place in the Barron's/Lipper Top Fund Families rankings for 10-year performance, as featured in Barron's February 17, 2023, issue. In 2022, Vanguard is ranked #21 for 1-year performance and #18 for 5-year performance.

Each fund's performance is measured against all of the other funds in its Refinitiv Lipper category, with a percentile ranking of 100 being the highest and one the lowest. This result is then weighted by asset size, relative to the fund family's other assets in its general classification. If a family's biggest funds do well, that boosts its overall ranking; poor performance in its biggest funds hurts a firm's ranking.

To be included in the ranking, a firm must have at least three funds in the general equity category, one world equity, one mixed equity (such as a balanced or target-date fund), two taxable bond funds, and one national tax-exempt bond fund.

Single-sector and country equity funds are factored into the rankings as general equity. We exclude all passive index funds, including pure index, enhanced index, and index-based, but include actively managed ETFs and so-called smart-beta ETFs, which are passively managed but created from active strategies.

Finally, the score is multiplied by the weighting of its general classification, as determined by the entire Lipper universe of funds. The category weightings for the one-year results in 2022 were general equity, 36.1%; mixed asset, 22%; world equity, 16%; taxable bond, 21.5%; and tax-exempt bond, 4.5%. (Weightings don't always add up to 100% because of rounding.)

The category weightings for the five-year results were general equity, 36.1%; mixed asset, 22.7%; world equity, 16%; taxable bond, 21%; and tax-exempt bond, 4.3%. For the 10-year list, they were general equity, 36.6%; mixed asset, 23%; world equity, 15.9%; taxable bond, 20.1%; and tax-exempt bond, 4.4%.

The scoring: Say a fund in the general U.S. equity category has $500 million in assets, accounting for half of the firm's assets in that category, and its performance lands it in the 75th percentile for the category. The first calculation would be 75 times 0.5, which comes to 37.5. That score is then multiplied by 36.1%, general equity's overall weighting in Lipper's universe. So it would be 37.5 times 0.361, which equals 13.5. Similar calculations are done for each fund in our study. Then the numbers are added for each category and overall. The shop with the highest total score wins. The same process is repeated to determine the five- and 10-year rankings.

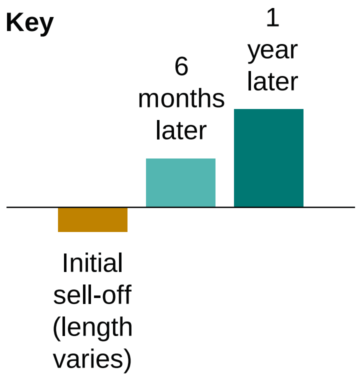
Visit Barrons.com for more information about the Barron's/Lipper Top Fund Families rankings.

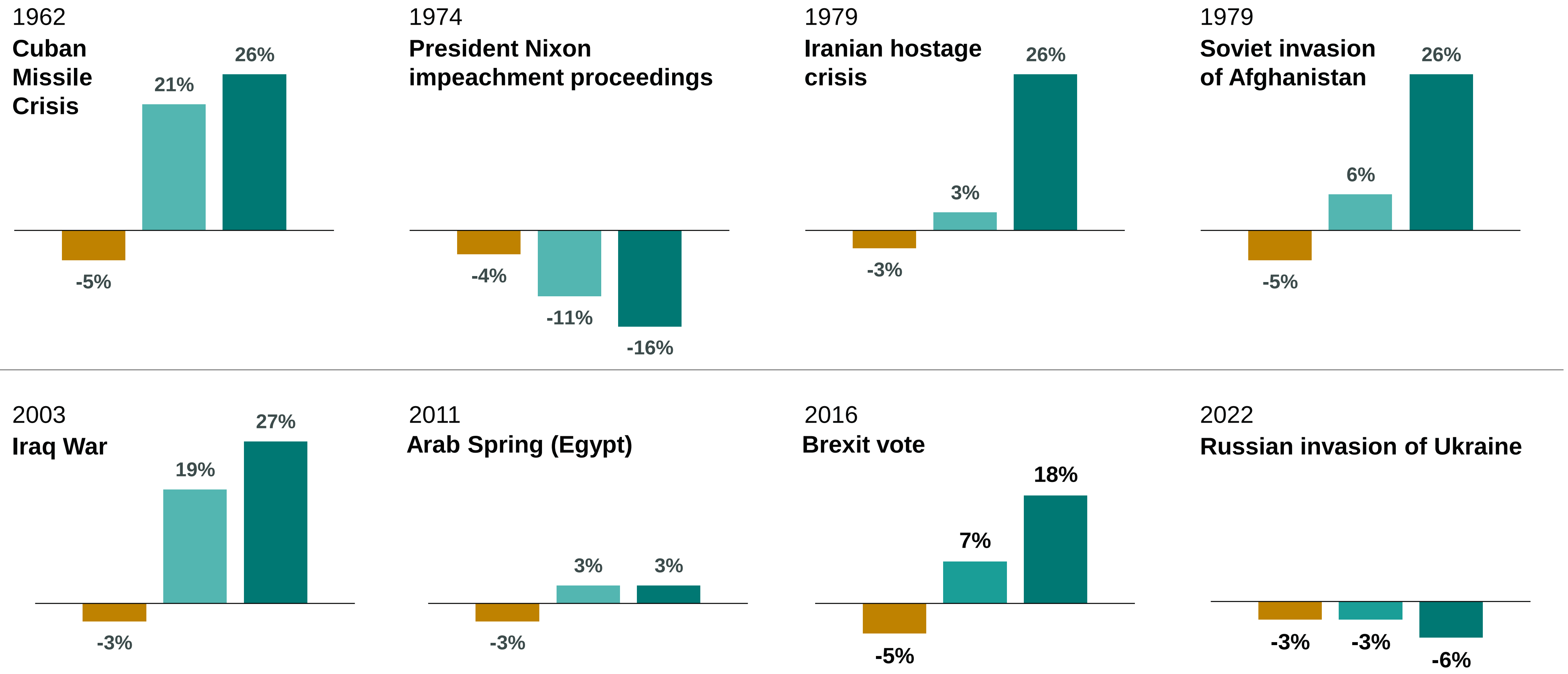
Market volatility & rates

Geopolitical sell-offs are typically short-lived

5% Average total return **6 months** from event

8% Average total return **1 year** from event



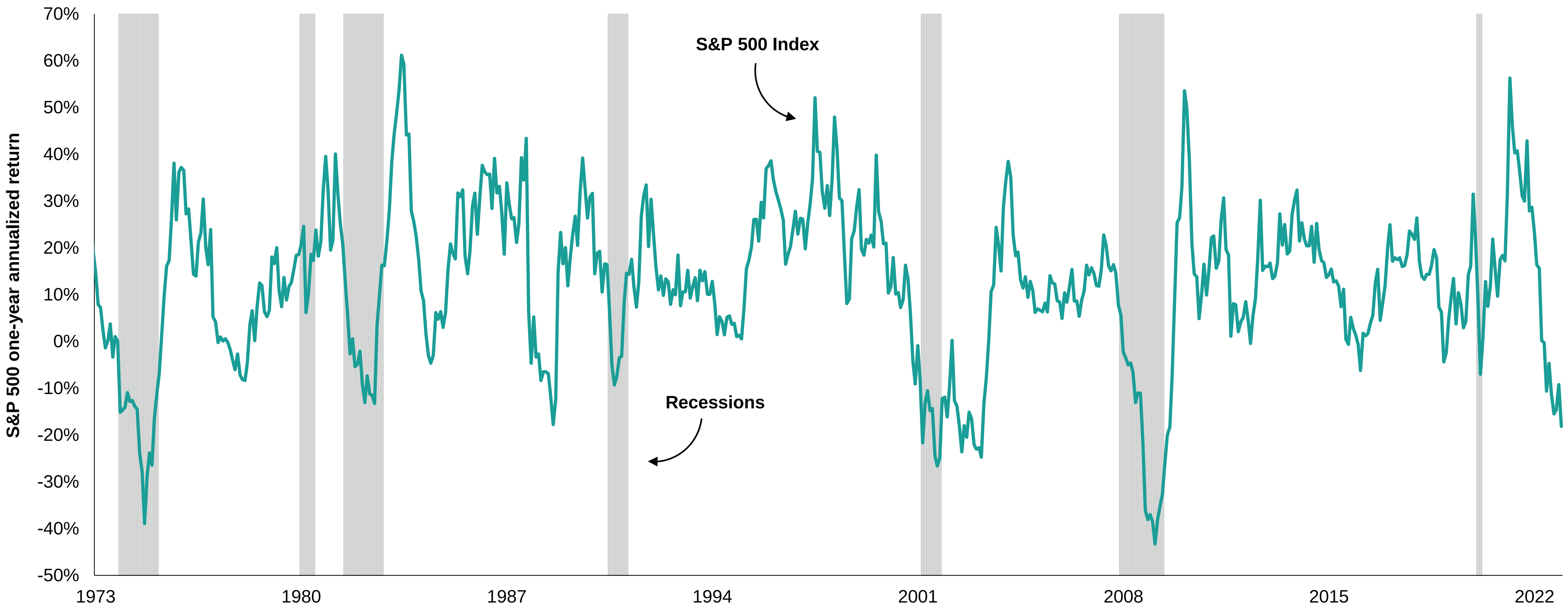


Notes: Returns are based on the Dow Jones Industrial Average through 1963 and the Standard & Poor's 500 Index thereafter. All returns are price returns. Not shown in the above charts, but included in the averages, are returns after the following events: the Suez Crisis (1956), construction of the Berlin Wall (1961), assassination of President Kennedy (1963), authorization of military operations in Vietnam (1964), Israeli–Arab Six-Day War (1967), Israeli–Arab War/oil embargo (1973), Shah of Iran's exile (1979), U.S. invasion of Grenada (1983), U.S. bombing of Libya (1986), First Gulf War (1991), President Clinton impeachment proceedings (1998), Kosovo bombings (1999), September 11 attacks (2001), multi-force intervention in Libya (2011), U.S. anti-ISIS intervention in Syria (2014), and President Trump impeachment proceedings (2019 and 2021).

Sources: Vanguard calculations as of December 31, 2022, using data from Refinitiv.

Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.
All investments are subject to risk, including the possible loss of the money you invest. Be aware that fluctuations in the financial markets and other factors may cause declines in the value of your account.

Stocks start to recover before recessions end



Notes: This chart shows the one-year annualized returns for the Standard & Poor's 500 Index from 1973 through 2022. The shaded areas represent months where the U.S. economy was in recession as defined by the National Bureau of Economic Research (NBER).

Sources: Vanguard calculations as of December 31, 2022, using data from Refinitiv.

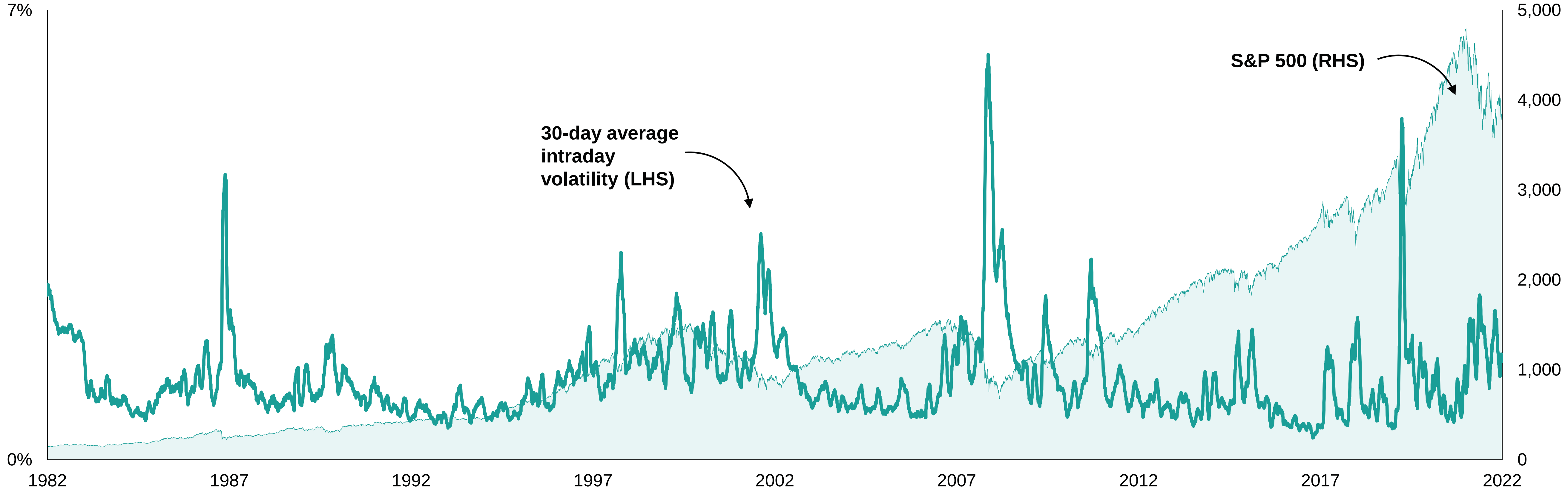
Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

All investments are subject to risk, including the possible loss of the money you invest. Be aware that fluctuations in the financial markets and other factors may cause declines in the value of your account.

For institutional use only. Not for distribution to retail investors.

Don’t let turbulence distract you: Keep your focus on the longer term

Volatility and index prices for the S&P 500 Index (December 31, 1982, through December 31, 2022)



Note: Intraday volatility is calculated as daily range of trading prices [(high-low)/opening price] for the Standard & Poor’s 500 Index.

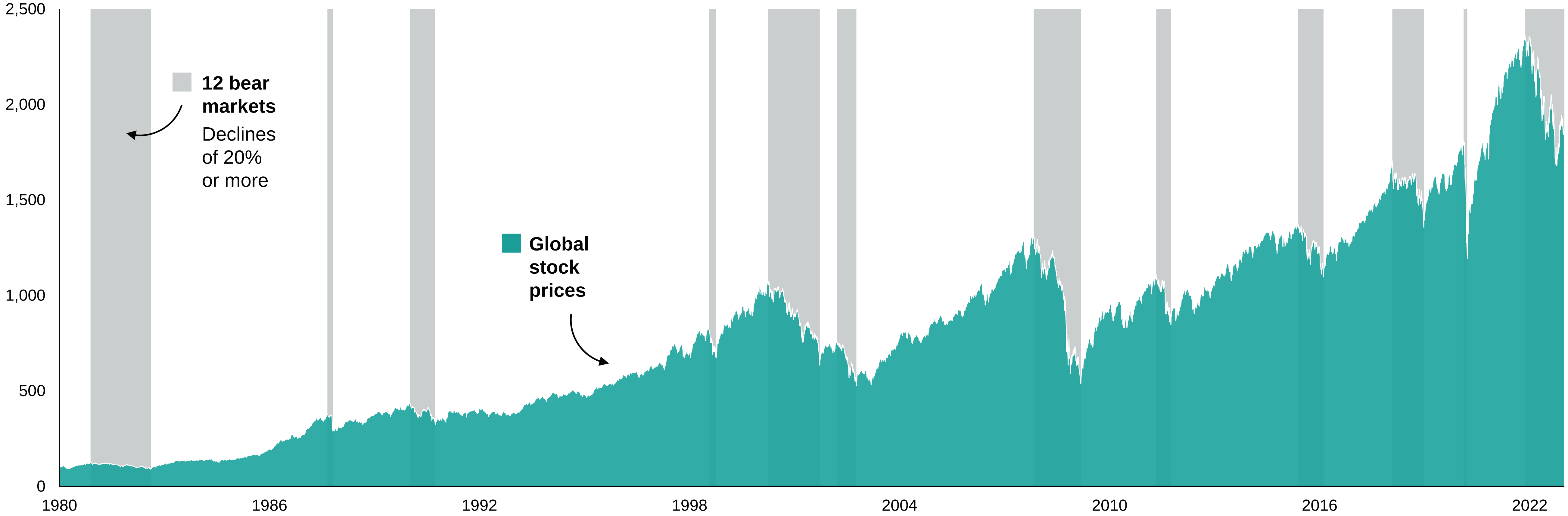
Sources: Vanguard calculations as of December 31, 2022, using data from Refinitiv.

Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

All investments are subject to risk, including the possible loss of the money you invest. Be aware that fluctuations in the financial markets and other factors may cause declines in the value of your account.

Downturns aren't rare events: Typical investors, in all markets, will endure many of them during their lifetime

Global stock prices (January 1, 1980, through December 31, 2022)



Note: Although the downturns that began in August 1987 (related to Black Monday) and February 2020 (related to the start of the COVID-19 pandemic) don't meet a widely accepted definition of a bear market because they lasted less than two months, we are counting them as bear markets and including them in our analysis because of their historic nature.

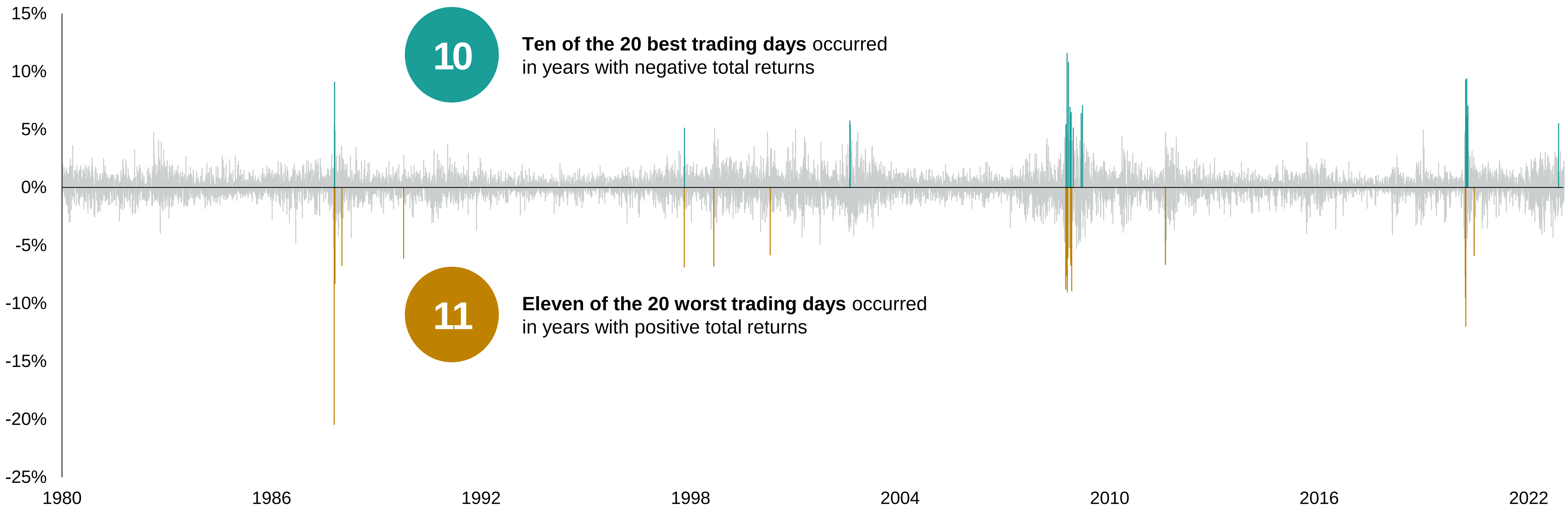
Sources: MSCI World Index from January 1, 1980, through December 31, 1987, and the MSCI ACWI thereafter.

Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

All investments are subject to risk, including the possible loss of the money you invest. Be aware that fluctuations in the financial markets and other factors may cause declines in the value of your account.

Timing the market is futile:
The best and worst trading days happen close together

S&P 500 Index daily returns (January 1, 1980, through December 31, 2022)



Sources: Vanguard calculations as of December 31, 2022, based on data from Refinitiv using the Standard & Poor's 500 Price Index.

Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

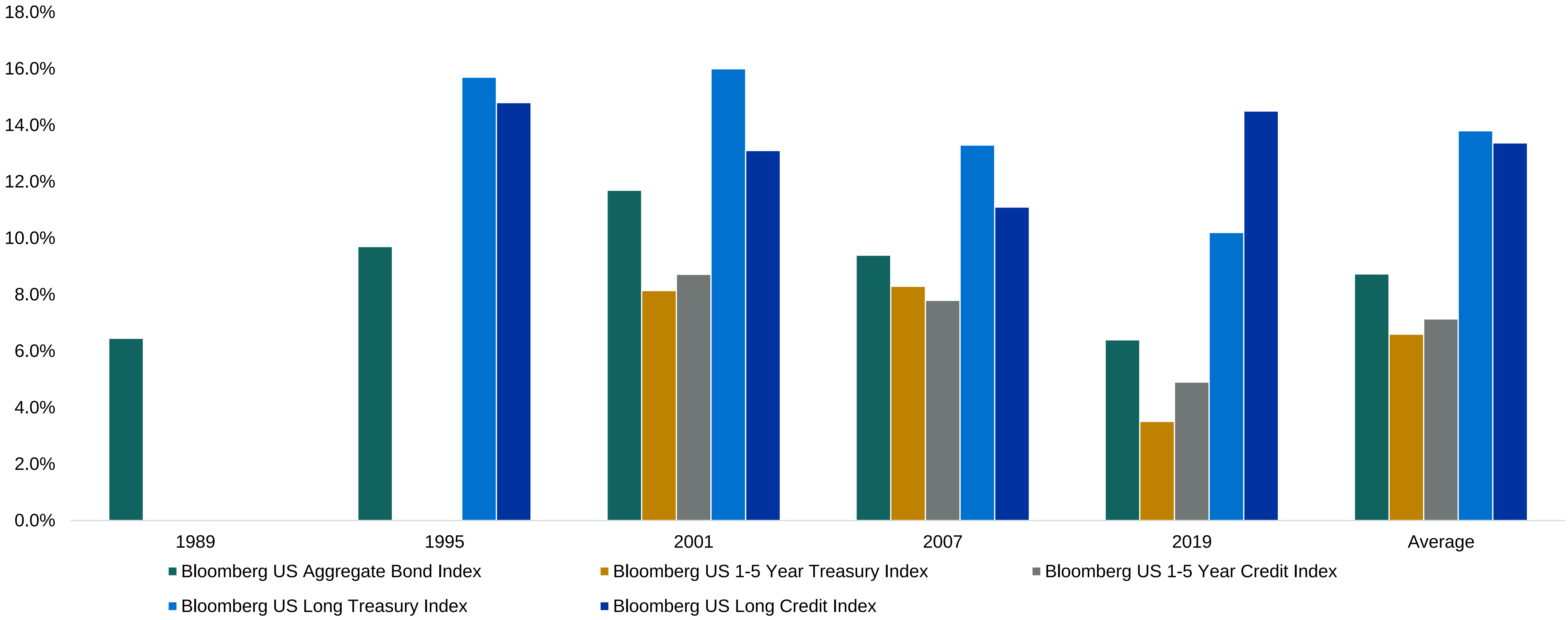
All investments are subject to risk, including the possible loss of the money you invest. Be aware that fluctuations in the financial markets and other factors may cause declines in the value of your account.

Performance when interest rates plateau

Date of Last rate Hike	Date of first rate cut	Days at peak rates	2-Year UST Change (bps)	10-Year UST Change (bps)	Bloomberg US Aggregate Bond Index	Bloomberg US 1-5 Year Treasury Idx	Bloomberg US 1-5 Year Credit Index	Bloomberg US Long Treasury Index	Bloomberg US Long Credit Index
2/24/1989	6/5/1989	101	-123	-101	6.5%	—	—	—	—
2/1/1995	7/6/1995	155	-182	-163	9.7%	—	—	15.7%	14.8%
5/16/2000	1/3/2001	232	-194	-127	11.7%	8.1%	8.7%	16.0%	13.1%
6/29/2006	9/18/2007	446	-121	-72	9.4%	8.3%	7.8%	13.3%	11.1%
12/19/2018	7/31/2019	224	-77	-74	6.4%	3.5%	4.9%	10.2%	14.5%
TBD 2023	TBD	TBD	—	—	—	—	—	—	—
Average		232	-139	-107	8.7%	6.6%	7.1%	13.8%	13.4%

Source: Vanguard, St. Louis Federal Reserve
Notes: Data as of June 30, 2023. Cumulative performance from the date of the last interest rate increase to the day prior to the first interest rate decrease.
Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Performance when interest rates plateau



Source: Vanguard, St. Louis Federal Reserve

Notes: Data as of June 30, 2023. Cumulative performance from the date of the last interest rate increase to the day prior to the first interest rate decrease.

Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Key takeaways

- We favor the 3-month/10-year spread over the 2-year/10-year spread because of its stronger consistency with economic theory in measuring the term spread*

- The yield curve has been a reliable signal of economic growth: still relevant

- Correlation does not equal causation. Yield curve inversions do not necessarily cause a recession

- Expected portfolio returns muted in the environment ahead

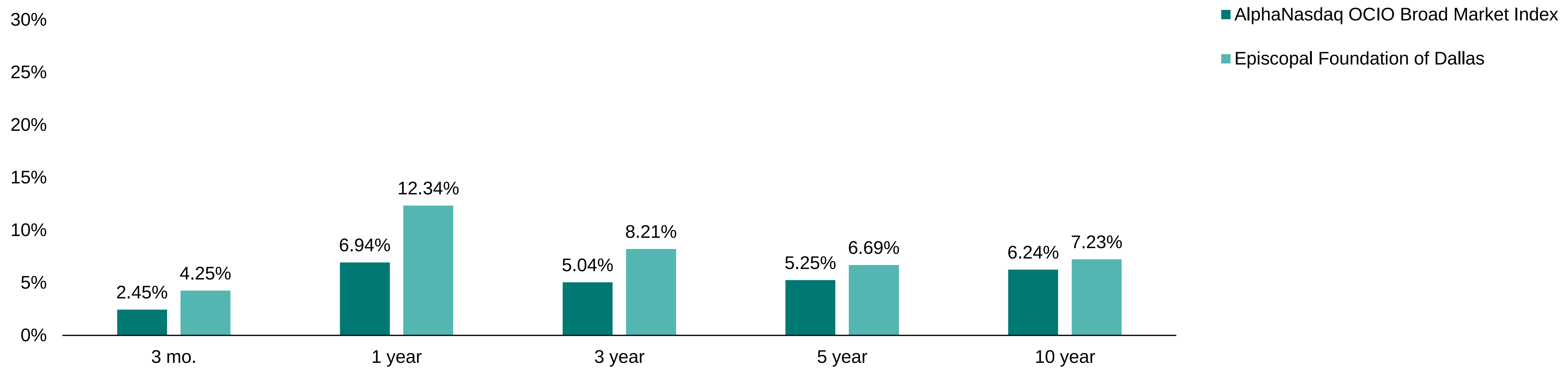
- Foresee an increasing diversification benefit of fixed income assets as interest rates normalize

*See Bauer, Michael D. and Thomas M. Mertens, 2018. Information in the Yield Curve About Future Recessions. FRBSF Economic Letter.

AlphaNasdaq comparison

Comparison with AlphaNasdaq Broad Market Index returns as of June 30, 2023

Average annualized returns



Past performance is not a guarantee of future results. Investment returns and principal value will fluctuate so that when sold, investment may be worth more or less than original cost. Current performance may be lower or higher than performance data cited. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index. All investing is subject to risk, including the possible loss of money you invest. Diversification does not ensure a profit or protect against a loss.

Sources: 2023 AlphaNasdaq OCIO Index and Vanguard.

All returns are reported net of fees. The volatility of the VIAS portfolios may be materially different from that of the AlphaNasdaq portfolios. AlphaNasdaq institutions' may have had during the time periods noted above, and may currently have, investment objectives that are not consistent with the VIAS portfolios. VIAS portfolios are reviewed quarterly to determine the deviation from target weightings and rebalanced according to written investment guidelines.

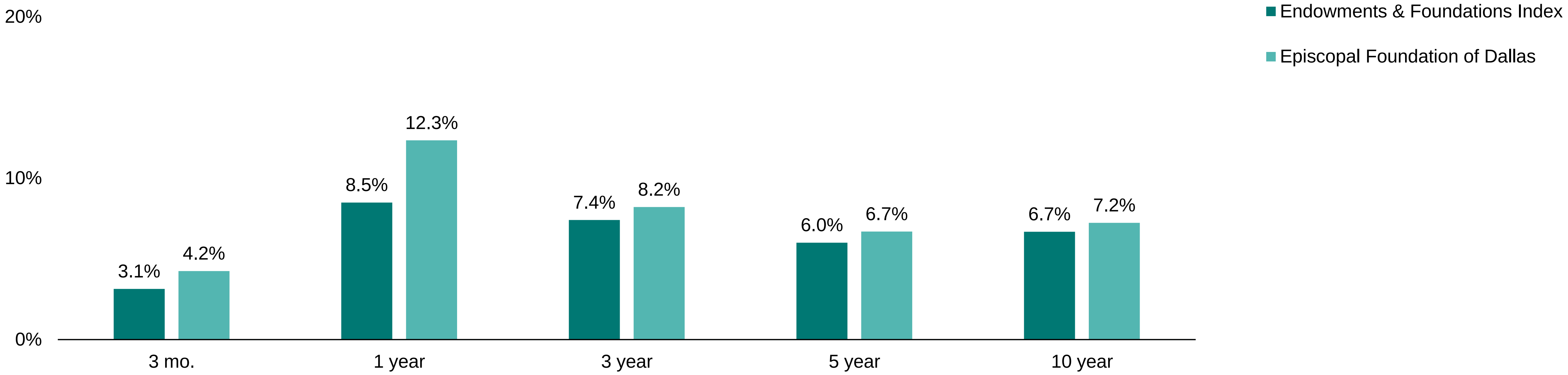
Client portfolio returns shown are net of all fees and expenses and includes the reinvestment of dividends, capital gains, and interest income. Returns do not reflect the effect of tax withholdings. Had that expense been included performance results would have been lower.

Advisory fees are calculated and assessed as set forth in VIAS' advisory brochure, in each client's Investment Management Agreement, and are based on each client's assets. Underlying expenses are set forth in each product's offering documents. Clients will have access to the lowest-cost share classes for each appropriate strategy, when minimum investment requirements are met. Neither VIAS nor any affiliated entity offers any guarantee that investment results or objectives sought by any client will be achieved.

Please read additional disclosures in the Important Information section for more details on the AlphaNasdaq Indexes.

Comparison with AlphaNasdaq returns by organization type as of June 30, 2023

Average annualized returns



Past performance is not a guarantee of future results. Investment returns and principal value will fluctuate so that when sold, investment may be worth more or less than original cost. Current performance may be lower or higher than performance data cited. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index. All investing is subject to risk, including the possible loss of money you invest. Diversification does not ensure a profit or protect against a loss.

Sources: 2023 AlphaNasdaq OCIO Index and Vanguard.

All returns are reported net of fees. The volatility of the VIAS portfolios may be materially different from that of the AlphaNasdaq portfolios. AlphaNasdaq institutions' may have had during the time periods noted above, and may currently have, investment objectives that are not consistent with the VIAS portfolios. VIAS portfolios are reviewed quarterly to determine the deviation from target weightings and rebalanced according to written investment guidelines.

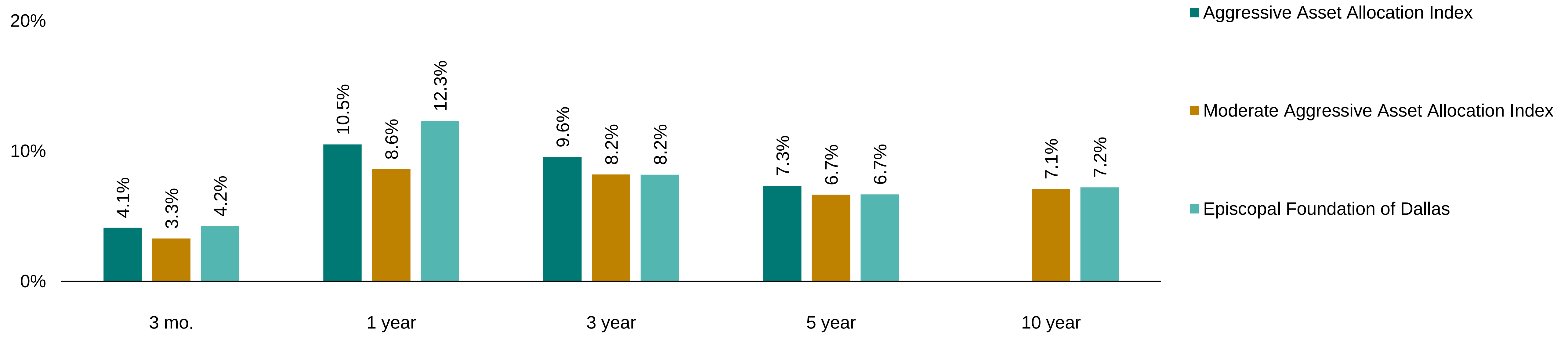
Client portfolio returns shown are net of all fees and expenses and includes the reinvestment of dividends, capital gains, and interest income. Returns do not reflect the effect of tax withholdings. Had that expense been included performance results would have been lower.

Advisory fees are calculated and assessed as set forth in VIAS' advisory brochure, in each client's Investment Management Agreement, and are based on each client's assets. Underlying expenses are set forth in each product's offering documents. Clients will have access to the lowest-cost share classes for each appropriate strategy, when minimum investment requirements are met. Neither VIAS nor any affiliated entity offers any guarantee that investment results or objectives sought by any client will be achieved.

Please read additional disclosures in the Important Information section for more details on the AlphaNasdaq Indexes.

Comparison with AlphaNasdaq returns by asset allocation as of June 30, 2023

Average annualized returns



Past performance is not a guarantee of future results. Investment returns and principal value will fluctuate so that when sold, investment may be worth more or less than original cost. Current performance may be lower or higher than performance data cited. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index. All investing is subject to risk, including the possible loss of money you invest. Diversification does not ensure a profit or protect against a loss.

Sources: 2023 AlphaNasdaq OCIO Index and Vanguard.

All returns are reported net of fees. The volatility of the VIAS portfolios may be materially different from that of the AlphaNasdaq portfolios. AlphaNasdaq institutions' may have had during the time periods noted above, and may currently have, investment objectives that are not consistent with the VIAS portfolios. VIAS portfolios are reviewed quarterly to determine the deviation from target weightings and rebalanced according to written investment guidelines.

Client portfolio returns shown are net of all fees and expenses and includes the reinvestment of dividends, capital gains, and interest income. Returns do not reflect the effect of tax withholdings. Had that expense been included performance results would have been lower.

Advisory fees are calculated and assessed as set forth in VIAS' advisory brochure, in each client's Investment Management Agreement, and are based on each client's assets. Underlying expenses are set forth in each product's offering documents. Clients will have access to the lowest-cost share classes for each appropriate strategy, when minimum investment requirements are met. Neither VIAS nor any affiliated entity offers any guarantee that investment results or objectives sought by any client will be achieved.

Please read additional disclosures in the Important Information section for more details on the AlphaNasdaq Indexes.

Important information about AlphaNasdaq performance

Data Source

The AlphaNasdaq OCIO indices are based on anonymized account-level return streams, asset allocation and metadata reported directly by OCIO firms. The Alpha NASDAQ OCIO indices use this anonymously reported data to construct a family of indices that represent the broad OCIO market along with variations of the OCIO market to more appropriately reflect the nuances across sub-categories, such as plan type and risk profile.

Index Constituents

The broad market AlphaNasdaq OCIO index includes all account-level returns streams reported by OCIOs. The plan type AlphaNasdaq OCIO indices are based on the associated plan type for each account as reported by each OCIO. The risk- based AlphaNasdaq OCIO indices are based on the asset allocation for each account as reported by each OCIO. Below are the number of observations included in each of the AlphaNasdaq OCIO indices as of June 30, 2023. Unreported periods have fewer than 15 observations.

Index	MRQ	One year	Three year	Five year	Seven year	Ten year
AlphaNasdaq OCIO Broad Market Index	1,286	1,166	640	480	282	218
AlphaNasdaq OCIO Defined Benefit Pension Plans Index	510	481	249	178	116	89
AlphaNasdaq OCIO Endowments & Foundations Index	590	516	292	229	124	92
AlphaNasdaq OCIO Healthcare Operating Reserves Index	71	64	45	39	21	19
AlphaNasdaq OCIO Insurance Reserves Index	47	37	15	—	—	—
AlphaNasdaq OCIO Aggressive Allocation Index	92	60	35	28	—	—
AlphaNasdaq OCIO Moderately Aggressive Allocation Index	358	264	130	97	46	34
AlphaNasdaq OCIO Moderate Allocation Index	478	398	253	184	112	93
AlphaNasdaq OCIO Moderately Conservative Allocation Index	189	160	79	55	36	25
AlphaNasdaq OCIO Conservative Allocation Index	169	143	69	61	39	33

Risk Category Bands

The risk-based AlphaNasdaq OCIO indices are constituted based on the account-level asset allocation. Asset allocation is collected across 25 asset classes. Each asset class is defined as Growth or Risk-Mitigating based on the relative historical volatility of each asset class. Accounts in each risk-based index are reviewed annually (Q1 reported data) to determine if an account has shifted into a new risk category. The risk-based index thresholds are defined as:

- Aggressive: 0-20% allocation to risk-mitigating asset classes
- Moderately Aggressive: 21-30% allocation to risk-mitigating asset classes
- Moderate: 31-50% allocation to risk-mitigating asset classes
- Moderately Conservative: 51-75% allocation to risk-mitigating asset classes
- Conservative: 76-100% allocation to risk-mitigating asset classes

Calculation Methodology

Each of the AlphaNasdaq OCIO indices are calculated using the average net of fees return, as reported by each OCIO, for all the constituents within a given index. All constituents are equally weighted in each respective index. A minimum of 15 accounts are required to create a sub-category of the AlphaNasdaq OCIO Broad Market index.

Index Inclusion

To be included in any of the AlphaNasdaq OCIO indices, account size must be $50m or greater, must be fully discretionary, represent a US-based client, and the performance must be live client performance net of all fees. Defined Contribution accounts are excluded. Accounts already included in the index that fall below $50m due to market activity are granted a 10% allowance below the $50m threshold to remain in the index.

Important information about AlphaNasdaq

- **The AlphaNasdaq OCIO Broad Market Index** is an equal-weighted, net of fees index composed of approximately 1,100 account-level OCIO client constituents, including Defined Benefit Pension Plans, Endowments & Foundations, Healthcare Operating Reserves, Insurance Reserves, and other account types. Each constituent must be reported in USD and have a minimum of $50m in assets to be included in the index.
- **The AlphaNasdaq OCIO Defined Benefit Pension Plans Index** is an equal-weighted, net of fees index composed of approximately 415 account-level Defined Benefit Pension Plan constituents. Each constituent must be reported in USD and have a minimum of $50m in assets to be included in the index.
- **The AlphaNasdaq OCIO Endowments & Foundations Index** is an equal-weighted, net of fees index composed of approximately 530 account-level Endowment or Foundation constituents. Each constituent must be reported in USD and have a minimum of $50m in assets to be included in the index.
- **The AlphaNasdaq OCIO Healthcare Operating Reserves Index** is an equal-weighted, net of fees index composed of approximately 60 account-level Healthcare Operating Reserve constituents. Each constituent must be reported in USD and have a minimum of $50m in assets to be included in the index.
- **The AlphaNasdaq OCIO Insurance Reserves Index** is an equal-weighted, net of fees index composed of approximately 45 account-level Insurance Reserve constituents. Each constituent must be reported in USD and have a minimum of $50m in assets to be included in the index.
- **The AlphaNasdaq OCIO Aggressive Allocation Index** is an equal-weighted, net of fees index composed of approximately 60 account-level Defined Benefit Pension Plans, Endowments & Foundations, Healthcare Operating Reserves, Insurance Reserves, and other account types that have less than 20% of their assets allocated to risk-mitigating asset classes, as measured by the relative historical volatility of the underlying asset classes. Each constituent must be reported in USD and have a minimum of $50m in assets to be included in the index.
- **The AlphaNasdaq OCIO Moderately Aggressive Allocation Index** is an equal-weighted, net of fees index composed of approximately 320 account-level Defined Benefit Pension Plans, Endowments & Foundations, Healthcare Operating Reserves, Insurance Reserves, and other account types that between 21% and 30% of their assets allocated to risk-mitigating asset classes, as measured by the relative historical volatility of the underlying asset classes. Each constituent must be reported in USD and have a minimum of $50m in assets to be included in the index.
- **The AlphaNasdaq OCIO Moderate Allocation Index** is an equal-weighted, net of fees index composed of approximately 470 account-level Defined Benefit Pension Plans, Endowments & Foundations, Healthcare Operating Reserves, Insurance Reserves, and other account types that between 31% and 50% of their assets allocated to risk-mitigating asset classes, as measured by the relative historical volatility of the underlying asset classes. Each constituent must be reported in USD and have a minimum of $50m in assets to be included in the index.
- **The AlphaNasdaq OCIO Moderately Conservative Allocation Index** is an equal-weighted, net of fees index composed of approximately 160 account-level Defined Benefit Pension Plans, Endowments & Foundations, Healthcare Operating Reserves, Insurance Reserves, and other account types that between 51% and 75% of their assets allocated to risk-mitigating asset classes, as measured by the relative historical volatility of the underlying asset classes. Each constituent must be reported in USD and have a minimum of $50m in assets to be included in the index.
- **The AlphaNasdaq OCIO Conservative Allocation Index** is an equal-weighted, net of fees index composed of approximately 105 account-level Defined Benefit Pension Plans, Endowments & Foundations, Healthcare Operating Reserves, Insurance Reserves, and other account types that between 76% and 100% of their assets allocated to risk-mitigating asset classes, as measured by the relative historical volatility of the underlying asset classes. Each constituent must be reported in USD and have a minimum of $50m in assets to be included in the index.

Important information about AlphaNasdaq

Asset class categorization for risk categories

Growth
- Commodities
- Emerging Market Equity
- Global Equity
- Global REITs
- International (EAFE) Equity
- Private Debt
- Private Equity
- Private Real Estate
- Real Assets
- U.S. Equity
- U.S. REITs
- Venture Capital

Risk Mitigating
- Absolute Return
- Bank Loans
- Cash and Equivalents
- Credit Hedge Funds
- Emerging Markets Debt
- Equity Hedge Funds
- Global Core Fixed Income
- Global High Yield Fixed Income
- Macro Hedge Funds
- Municipal Fixed Income
- Treasuries
- U.S. Core Fixed Income
- U.S. High Yield Fixed Income

Important information

For more information about any fund, visit institutional.vanguard.com or call 866-499-8473 to obtain a prospectus or, if available, a summary prospectus. Investment objectives, risks, charges, expenses, and other important information are contained in the prospectus; read and consider it carefully before investing.

Vanguard ETF® Shares are not redeemable with the issuing fund other than in very large aggregations worth millions of dollars. Instead, investors must buy or sell Vanguard ETF Shares in the secondary market and hold those shares in a brokerage account. In doing so, the investor may incur brokerage commissions and may pay more than net asset value when buying and receive less than net asset value when selling.

Mutual funds and all investments are subject to risk, including the possible loss of the money you invest. Prices of mid- and small-cap stocks often fluctuate more than those of large-company stocks. Investments in stocks or bonds issued by non-U.S. companies are subject to risks including country/regional risk and currency risk. These risks are especially high in emerging markets. Funds that concentrate on a relatively narrow sector face the risk of higher share-price volatility. It is possible that tax-managed funds will not meet their objective of being tax-efficient. Because company stock funds concentrate on a single stock, they are considered riskier than diversified stock funds.

Investments in bond funds are subject to the risk that an issuer will fail to make payments on time and that bond prices will decline because of rising interest rates or negative perceptions of an issuer's ability to make payments. High-yield bonds generally have medium- and lower-range credit quality ratings and are therefore subject to a higher level of credit risk than bonds with higher credit quality ratings. Although the income from a municipal bond fund is exempt from federal tax, you may owe taxes on any capital gains realized through the fund's trading or through your own redemption of shares. For some investors, a portion of the fund's income may be subject to state and local taxes, as well as to the federal Alternative Minimum Tax. Diversification does not ensure a profit or protect against a loss. There is no guarantee that any particular asset allocation or mix of funds will meet your investment objectives or provide you with a given level of income.

While U.S. Treasury or government agency securities provide substantial protection against credit risk, they do not protect investors against price changes due to changing interest rates. Unlike stocks and bonds, U.S. Treasury bills are guaranteed as to the timely payment of principal and interest.

Investments in Target Retirement Funds and Trusts are subject to the risks of their underlying funds. The year in the fund or trust name refers to the approximate year (the target date) when an investor in the fund or trust would retire and leave the workforce. The fund/trust will gradually shift its emphasis from more aggressive investments to more conservative ones based on its target date. The Income Trust/Fund and Income and Growth Trust have fixed investment allocations and are designed for investors who are already retired. An investment in a Target Retirement Fund or Trust is not guaranteed at any time, including on or after the target date.

Vanguard is responsible only for selecting the underlying funds and periodically rebalancing the holdings of target-date investments. The asset allocations Vanguard has selected for the Target Retirement Funds are based on our investment experience and are geared to the average investor. Investors should regularly check the asset mix of the option they choose to ensure it is appropriate for their current situation.

Vanguard collective trusts are not mutual funds. They are collective trusts available only to tax-qualified plans and their eligible participants. Investment objectives, risks, charges, expenses, and other important information should be considered carefully before investing. The collective trust mandates are managed by Vanguard Fiduciary Trust Company, a wholly owned subsidiary of The Vanguard Group, Inc.

A stable value investment is neither insured nor guaranteed by the U.S. government. There is no assurance that the investment will be able to maintain a stable net asset value, and it is possible to lose money in such an investment.

Vanguard Digital Advisor® and Vanguard Personal Advisor® services are provided solely by Vanguard Advisers, Inc. (VAI), a registered investment advisor. Please review the Vanguard Digital Advisor and Personal Advisor brochure (https://personal.vanguard.com/pdf/vanguard-digital-advice-brochure.pdf) for important details about these services, including Personal Advisor's asset-based service levels. Vanguard Digital Advisor's and Personal Advisor's financial planning tools provide projections and goal forecasts, which are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. Vanguard Situational Advisor™ is provided by Vanguard Advisers, Inc. (VAI), a federally registered investment advisor. Eligibility restrictions may apply.

VAI is a subsidiary of The Vanguard Group, Inc., and an affiliate of Vanguard Marketing Corporation. Neither VAI nor its affiliates guarantee profits or protection from losses.

Important information

The Factor Funds are subject to investment style risk, which is the chance that returns from the types of stocks in which a Factor Fund invests will trail returns from U.S. stock markets. The Factor Funds are also subject to manager risk, which is the chance that poor security selection will cause a Factor Fund to underperform its relevant benchmark or other funds with a similar investment objective, and sector risk, which is the chance that significant problems will affect a particular sector in which a Factor Fund invests, or that returns from that sector will trail returns from the overall stock market.

The information contained herein does not constitute tax advice and cannot be used by any person to avoid tax penalties that may be imposed under the Internal Revenue Code. We recommend that you consult a tax or financial advisor about your individual situation.

Schwab Personal Choice Retirement Account® (PCRA) is offered through Charles Schwab & Co., Inc. (Member SIPC), the registered broker/dealer, which also provides other brokerage and custody services to its customers.

Charles Schwab & Co., Inc., and Vanguard are not affiliated and are not responsible for the products and services provided by the other. CFA® and Chartered Financial Analyst® are trademarks owned by CFA Institute.

The Vanguard Group has partnered with Financial Engines Advisors L.L.C. (FEA) to provide subadvisory services to the Vanguard Managed Account Program and Personal Online Advisor. FEA is an independent, federally registered investment advisor that does not sell investments or receive commission for the investments it recommends with respect to the services which it is engaged in as subadvisor for Vanguard Advisers, Inc. (VAI). Advice is provided by Vanguard Advisers, Inc. (VAI), a federally registered investment advisor and an affiliate of The Vanguard Group, Inc. (Vanguard). Vanguard is owned by the Vanguard funds, which are distributed by Vanguard Marketing Corporation, a registered broker-dealer affiliated with VAI and Vanguard. Neither Vanguard, FEA, nor their respective affiliates guarantee future results. Vanguard will use your information in accordance with Vanguard's Privacy Policy.

CGS identifiers have been provided by CUSIP Global Services, managed on behalf of the American Bankers Association by Standard & Poor's Financial Services, LLC, and are not for use or dissemination in a manner that would serve as a substitute for any CUSIP service. The CUSIP Database, © 2023 American Bankers Association. "CUSIP" is a registered trademark of the American Bankers Association.

"Bloomberg®" is a service mark of Bloomberg Finance L.P. and its affiliates, including Bloomberg Index Services Limited ("BISL"), the administrator of the index (collectively, "Bloomberg") and have been licensed for use for certain purposes by Vanguard. Bloomberg is not affiliated with Vanguard, and Bloomberg does not approve, endorse, review, or recommend the Vanguard funds. Bloomberg does not guarantee the timeliness, accurateness, or completeness of any data or information relating to the Vanguard funds.

Apple®, iPhone®, and iPad® are trademarks of Apple Inc., registered in the United States and other countries. App Store is a service mark of Apple Inc. Android™ is a trademark of Google Inc.

Morningstar data © 2023 Morningstar, Inc. All rights reserved. The information contained herein: (1) is proprietary to Morningstar and/or its content providers; (2) may not be copied or distributed; and (3) is not warranted to be accurate, complete, or timely. Neither Morningstar nor its content providers are responsible for any damages or losses arising from any use of this information. Past performance is no guarantee of future results.

Private investments involve a high degree of risk and, therefore, should be undertaken only by prospective investors capable of evaluating and bearing the risks such an investment represents. Investors in private equity generally must meet certain minimum financial qualifications that may make it unsuitable for specific market participants.

Important information

Vanguard

London Stock Exchange Group companies include FTSE International Limited ("FTSE"), Frank Russell Company ("Russell"), MTS Next Limited ("MTS"), and FTSE TMX Global Debt Capital Markets Inc. ("FTSE TMX"). All rights reserved. "FTSE®," "Russell®," "MTS®," "FTSE TMX®," and "FTSE Russell," and other service marks and trademarks related to the FTSE or Russell Indexes are trademarks of the London Stock Exchange Group companies and are used by FTSE, MTS, FTSE TMX, and Russell under license. All information is provided for information purposes only. No responsibility or liability can be accepted by the London Stock Exchange Group companies nor its licensors for any errors or for any loss from use of this publication. Neither the London Stock Exchange Group companies nor any of its licensors make any claim, prediction, warranty, or representation whatsoever, expressly or impliedly, either as to the results to be obtained from the use of the FTSE Indexes or the fitness or suitability of the indexes for any particular purpose to which they might be put.

The index is a product of S&P Dow Jones Indices LLC (“SPDJI”) and has been licensed for use by Vanguard. Standard & Poor’s® and S&P® are registered trademarks of Standard & Poor’s Financial Services LLC (“S&P”); Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC (“Dow Jones”); S&P® and S&P 500® are trademarks of S&P; and these trademarks have been licensed for use by SPDJI and sublicensed for certain purposes by Vanguard. Vanguard product(s) are not sponsored, endorsed, sold, or promoted by SPDJI, Dow Jones, S&P, or their respective affiliates, and none of such parties make any representation regarding the advisability of investing in such product(s) nor do they have any liability for any errors, omissions, or interruptions of the index.

Center for Research in Security Prices, LLC (CRSP®) and its third-party suppliers have exclusive proprietary rights in the CRSP® Index Data, which has been licensed for use by Vanguard but is and shall remain valuable intellectual property owned by, and/or licensed to, CRSP®. The Vanguard Funds are not sponsored, endorsed, sold, or promoted by CRSP®, The University of Chicago, or The University of Chicago Booth School of Business, and neither CRSP®, The University of Chicago, nor The University of Chicago Booth School of Business makes any representation regarding the advisability of investing in the Vanguard Funds.

The Russell Indexes and Russell® are registered trademarks of Russell Investments and have been licensed for use by The Vanguard Group. The products are not sponsored, endorsed, sold, or promoted by Russell Investments, and Russell Investments makes no representation regarding the advisability of investing in the products.

“Dividend Achievers” is a trademark of The NASDAQ OMX Group, Inc. (collectively, with its affiliates, “NASDAQ OMX”) and has been licensed for use by The Vanguard Group, Inc. Vanguard mutual funds are not sponsored, endorsed, sold, or promoted by NASDAQ OMX, and NASDAQ OMX makes no representation regarding the advisability of investing in the funds. NASDAQ OMX MAKES NO WARRANTIES AND BEARS NO LIABILITY WITH RESPECT TO THE VANGUARD MUTUAL FUNDS.

The funds or securities referred to herein are not sponsored, endorsed, or promoted by MSCI, and MSCI bears no liability with respect to any such funds or securities. The prospectus or the Statement of Additional Information contains a more detailed description of the limited relationship MSCI has with Vanguard and any related funds.

The Global Industry Classification Standard ("GICS") was developed by and is the exclusive property and a service mark of MSCI Inc. ("MSCI") and Standard and Poor's, a division of McGraw-Hill Companies, Inc. ("S&P") and is licensed for use by Vanguard. Neither MSCI, S&P, nor any third party involved in making or compiling the GICS or any GICS classification makes any express or implied warranties or representations with respect to such standard or classification (or the results to be obtained by the use thereof), and all such parties hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability, or fitness for a particular purpose with respect to any such standard or classification. Without limiting any of the foregoing, in no event shall MSCI, S&P, any of its affiliates, or any third party involved in making or compiling the GICS or any GICS classification have any liability for any direct, indirect, special, punitive, consequential, or any other damages (including lost profits) even if notified of the possibility of such damages.

Vanguard Marketing Corporation, Distributor of the Vanguard Funds.

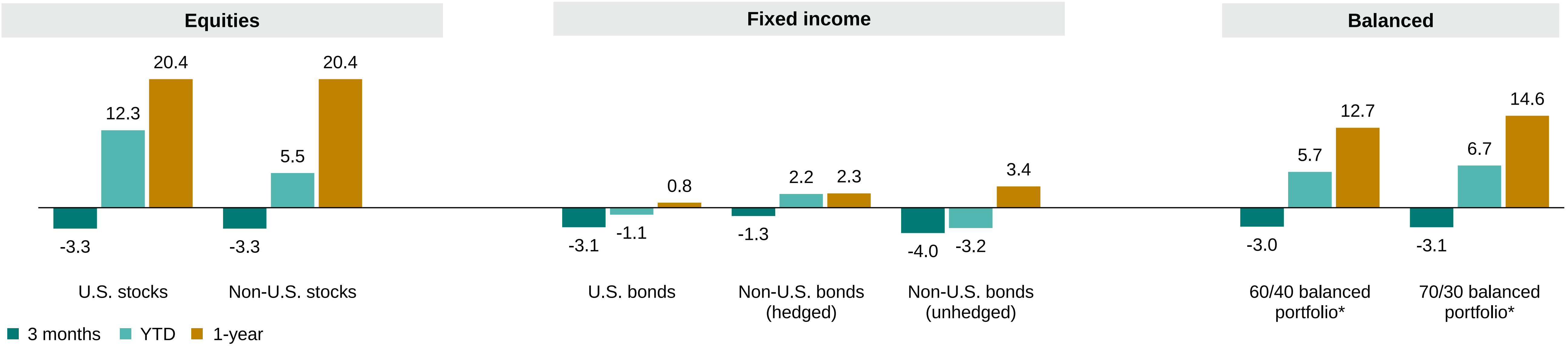
Rev_092023

Markets and economy

Market momentum shifts intra-quarter as yields surge

- Markets hit YTD highs in July driven by AI optimism and reduced risks of a hard landing scenario due to resilient U.S. economic data and sustained disinflation.
- Yet global stocks declined in August and accelerated to the downside in September on a combination of worries about China's growth and higher-for-longer messaging from the Fed.
- Markets discounted growing concerns around potential exogenous risks, including a spike in energy prices, labor disruptions, a U.S. government shutdown, and China's property crisis.

Global market returns as of September 30, 2023 (%)



Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Sources: Bloomberg, FTSE, MSCI, Russell, CRSP and Dow Jones.

US Stocks (CRSP US Total Market Index), Non-US Stocks (FTSE Global All-Cap ex-US Index), US Bonds (Bloomberg US Aggregate Float Adjusted Index), Non-US Bonds hedged (Bloomberg Global Aggregate ex-USD Float Adjusted RIC Capped Index hedged), Non-US Bonds unhedged (Bloomberg Global Aggregate Index ex-USD).

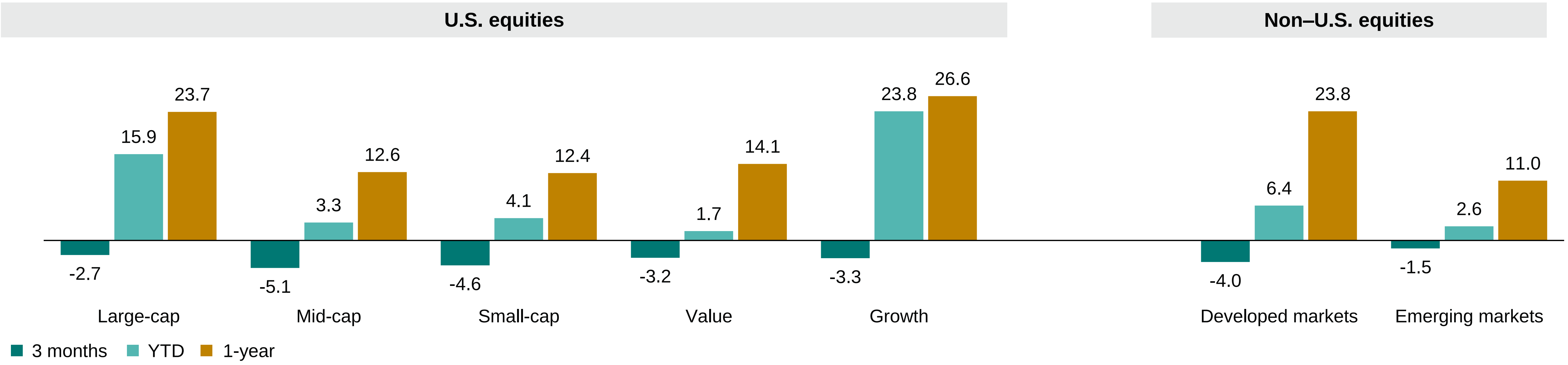
* 60/40 balanced portfolio Static Composite (36% U.S. stocks, 24% international stocks, and 28% investment-grade U.S. bonds, 12% investment-grade international bonds).

** 70/30 balanced portfolio Static Composite (42% U.S. stocks, 28% international stocks, and 21% investment-grade U.S. bonds, 9% investment-grade international bonds).

Rising rate outlook pressures stocks globally

- Despite ending the quarter up 12% YTD, September saw the S&P 500 sustain its biggest monthly decline since last December and its first back-to-back drawdown sequence in a year.
- Emerging markets are experiencing stiff headwinds from rising yields and a stronger U.S. dollar, which surged 6.5% from its mid-July low to the highest level since last November.
- Small- and mid-cap stocks continue to lag the broader market due to higher sensitivity to a potential recession and to the banking crisis and lower exposure to AI tailwinds.

Global equity market returns as of September 30, 2023 (%)

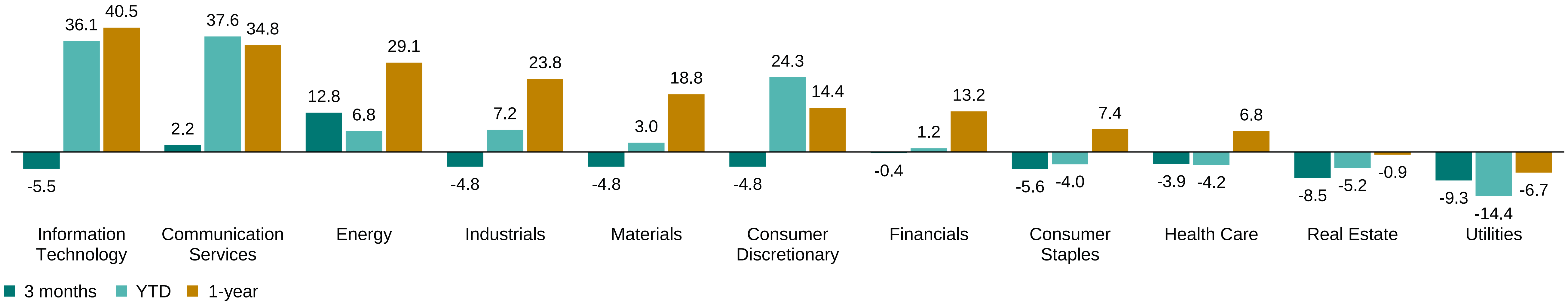


Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.
Sources: FTSE, MSCI, Russell, CRSP and Dow Jones.
Large-cap (CRSP US Mega Cap Index), Mid-cap (CRSP US Mid Cap Index), Small-cap (CRSP US Small Cap Index); Value (Russell 3000 Value Index), Growth (Russell 3000 Growth Index); Developed markets (FTSE Developed All Cap ex-US Index), Emerging markets (FTSE Emerging Markets All Cap China A Inclusion Index).

U.S. stocks see broad-based weakness as big tech pulls back

- Higher rates caused investors to shy away from the “Magnificent Seven” due to lofty valuations and hit other rate-sensitive sectors, such as industrials, home builders, and utilities.
- Energy was the only gainer in August and September, as oil prices jumped 28% in Q3 driven by OPEC cuts and low U.S. inventories due to production constraints.
- A more hostile regulatory environment weighed on Apple (-8.9%), Amazon (-7.9%), and Alphabet (-4.0%) last month as China restricted government officials’ iPhone use and the U.S. government brought antitrust suits against Amazon and Google.

U.S. equity sector returns as of September 30, 2023 (%)

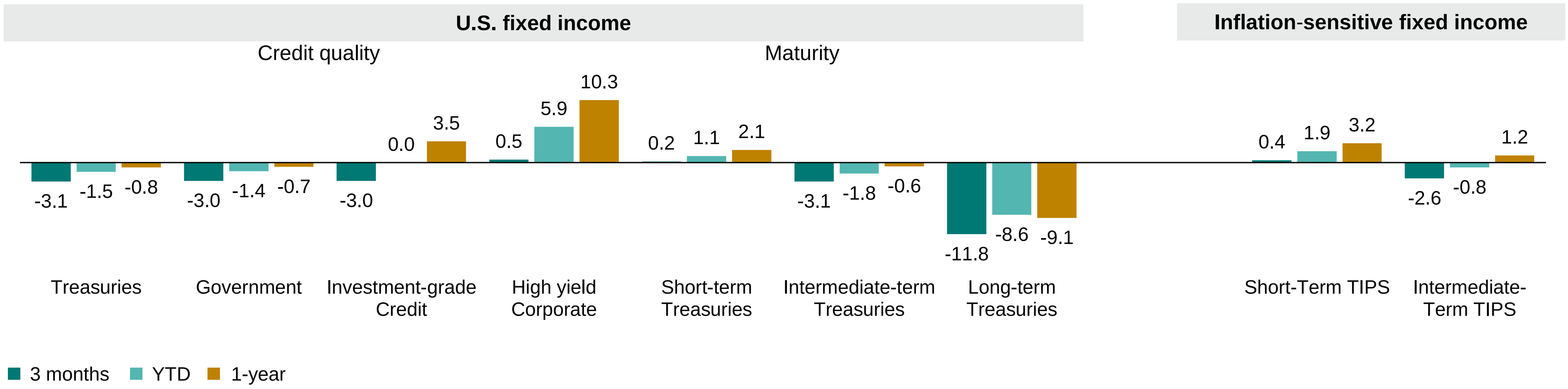


Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.
Source: FactSet.
U.S. markets measured by CRSP U.S. Total Market Index.

Long-term Treasurys sell off as rate cut hopes evaporate

- Long-term treasuries sold off after the Fed indicated that they expect to keep rates higher further into 2024 to suppress inflation amid resilient economic data.
- The 10-year Treasury yield surpassed 4.6% for the first time since 2007 and rose sharply from 3.818% at the end of June.
- High yield has been a bright spot in the bond market this year due to its relatively shorter duration vs. investment-grade credit and short supply of new bond issuance.

Domestic fixed income market returns as of September 30, 2023 (%)



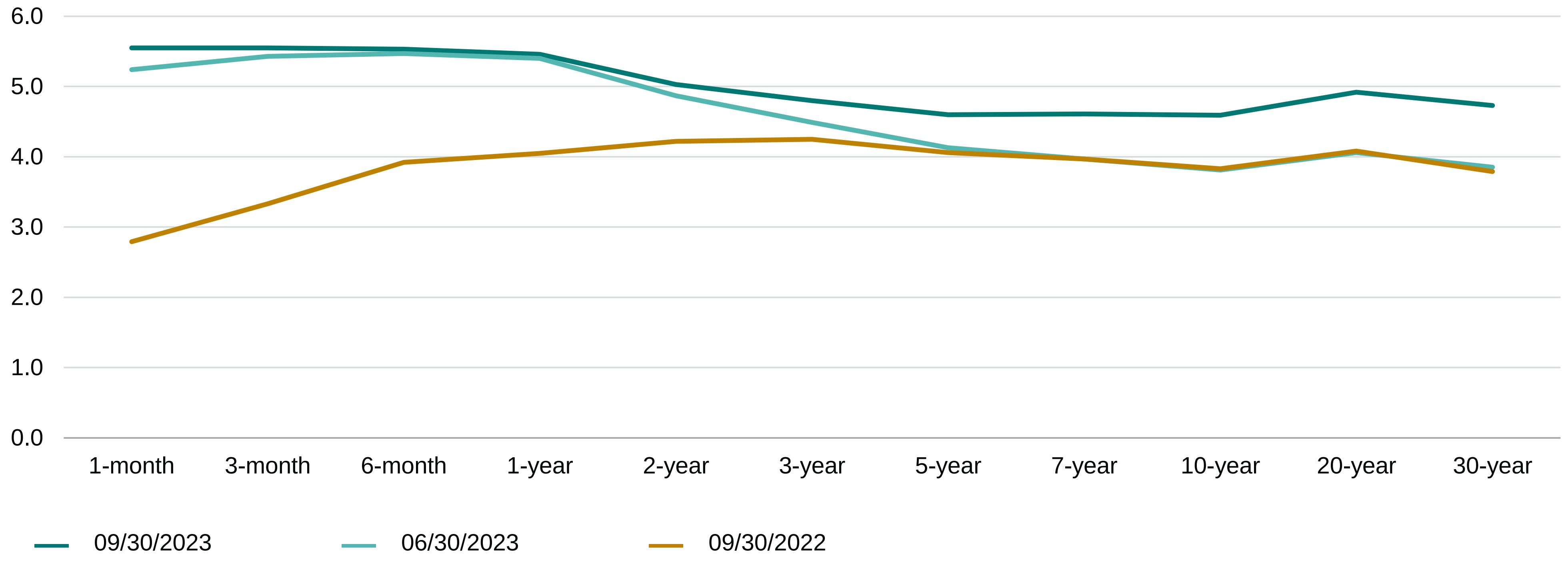
Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Source: Bloomberg.

Treasuries, government, investment-grade credit; high-yield (Bloomberg U.S. Treasury/Government/Credit/Corporate High-Yield Indices); short-inter-long-term Treasuries (Bloomberg U.S. 1–5/5–10/Long Treasury Indices); short-term TIPS (Bloomberg U.S. Treasury 0–5 Year Inflation-Protected Index); intermediate-term TIPS (Bloomberg U.S. Treasury Inflation-Protected Index).

Curve flattening shifts to “bear steepening”

	Yield (%) and change (bps)	1-month	3-month	6-month	1-year	2-year	3-year	5-year	7-year	10-year	20-year	30-year
—	Current yield (%)	5.55	5.55	5.53	5.46	5.03	4.80	4.60	4.61	4.59	4.92	4.73
—	3 Mo. Δ	31	12	6	6	16	31	47	64	78	86	88
—	12 Mo. Δ	276	222	161	141	81	55	54	64	76	84	94



Source: Morningstar.

Market leadership changes

- Emerging markets equities appears at both the top and bottom multiple times, illustrating the relatively high volatility of single asset classes
- The balanced composite generally falls near the middle, demonstrating the volatility dampening effect of high-grade fixed income and the consistency resulting from holding a broadly diversified portfolio
- U.S. stock returns exceeded non-U.S. stock returns by a significant amount over the past ten years, yet it's important to remember that recent outperformance by a sub-asset class or market segment does not imply future outperformance

2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	10-Year Average
Sml 38.8	REIT 30.4	Grw 5.1	Sml 21.3	Emg 31.1	IB 3.2	Grw 35.8	Grw 38.3	REIT 43.1	Cmd 13.8	Grw 13.8
Grw 34.2	Lrg 13.2	REIT 2.5	Val 18.4	Grw 29.6	T-Bill 1.9	Lrg 31.4	Lrg 21.0	Cmd 27.1	T-Bill 1.5	Lrg 12.4
Lrg 33.1	Val 12.7	IB 1.4	HY 17.1	Dev 26.3	Bnd 0.0	Val 26.3	Sml 20.0	Lrg 26.5	HF -4.4	Val 10.2
Val 32.7	Grw 12.4	Lrg 0.9	Lrg 12.1	Lrg 21.7	HY -2.1	REIT 25.8	Emg 15.5	Grw 25.8	Val -8.0	Sml 9.0
Dev 20.5	IB 8.8	Bnd 0.5	Cmd 11.4	Bal 16.5	Grw -2.1	Sml 25.5	Bal 13.4	Val 25.4	IB -9.8	Bal 6.5
Bal 16.8	Bal 6.4	T-Bill 0.0	Emg 10.3	Sml 14.6	REIT -4.6	Dev 22.3	Dev 10.0	Sml 14.8	HY -11.2	REIT 6.5
HY 7.4	Bnd 6.0	Bal -0.6	REIT 8.6	Val 13.2	Lrg -4.8	Bal 20.7	Bnd 7.5	Bal 12.0	Bnd -13.0	Dev 4.8
HF 6.7	Sml 4.9	Dev -1.8	Grw 7.4	HY 7.5	Bal -5.5	Emg 20.4	HY 7.1	Dev 11.6	Dev -15.6	HY 4.0
REIT 2.5	Emg 2.6	HF -3.6	Bal 7.3	HF 6.0	HF -6.7	HY 14.3	HF 6.8	HY 5.3	Bal -15.9	Emg 2.1
IB 1.2	HY 2.5	Val -4.1	IB 4.9	REIT 5.1	Val -8.6	Bnd 8.7	IB 3.9	HF 3.7	Emg -17.6	IB 2.1
T-Bill 0.1	T-Bill 0.0	Sml -4.4	Dev 3.1	Bnd 3.5	Sml -11.0	HF 8.6	Val 2.9	Emg 1.5	Lrg -19.1	HF 1.8
Bnd -2.0	HF -0.6	HY -4.5	Bnd 2.6	IB 2.5	Cmd -13.0	IB 7.6	T-Bill 0.6	T-Bill 0.0	Sml -20.4	Bnd 1.1
Emg -3.2	Dev -4.4	Emg -13.5	HF 2.5	T-Bill 0.8	Emg -14.8	Cmd 5.4	Cmd -3.5	IB -1.4	REIT -24.5	T-Bill 0.7
Cmd -9.6	Cmd -17.0	Cmd -24.7	T-Bill 0.3	Cmd 0.7	Dev -14.8	T-Bill 2.3	REIT -7.6	Bnd -1.5	Grw -29.0	Cmd -2.1

Val	Value oriented U.S. based stocks (Russell 3000 Value Index)
Grw	Growth oriented U.S. based stocks (Russell 3000 Growth Index)
Lrg	Large U.S. based stocks (Russell 1000 Index)
Sml	Small U.S. based stocks (Russell 2000 Index)
Dev	International stocks from developed countries (FTSE Developed All Cap ex US Index)
Emg	International stocks from emerging countries (FTSE Emerging ACap CN A Inclus Idx)
Bnd	Investment-grade U.S. bonds (Bloomberg US Aggregate Bond Index)
HY	High-yield U.S. bonds (Bloomberg US Corp High Yield Index)
IB	Investment-grade international bonds (Bloomberg GA ex-USD Index Hedged)
T-Bill	Short-term Treasury rates (Citigroup 3-Month US T-Bill Index)
REIT	U.S. public equity real estate (REIT) (MSCI US REIT Index)
Cmd	Commodities (Bloomberg Commodity Index)
HF	Hedge funds (HFRX Global Hedge Fund Index*)
Bal	Balanced Static Composite (39% U.S. stocks**, 26% Int'l stocks†, 24.5% Invest-grade U.S. bonds††, 10.5% Invest-grade Int'l bonds††)

Source: Vanguard. Last observation: December 31, 2022; 10-year average performance from December 31, 2011 through December 31, 2022.

* Source: Hedge Fund Research, Inc.

** U.S. stocks: MSCI U.S. Broad Market Index.

† International Stocks: FTSE Global All Cap ex-US Index.

†† Bonds: Bloomberg US Aggregate Bond Index and Bloomberg Global Aggregate ex-USD Index Hedged.

Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

For institutional use only. Not for distribution to retail investors.

Vanguard monthly market and economic update

The views below are those of the global economics and markets team of Vanguard Investment Strategy Group as of September 13, 2023.

Key Highlights

- U.S. fiscal and monetary policies appear headed in different directions, leading to a period of higher sustained interest rates.
- Both core and headline inflation marginally exceeded our expectations.
- Further promising economic data from China is evidence of potential stabilization.

Asset-class return outlooks

Our 10-year annualized nominal return and volatility forecasts are shown below. They are based on the June 30, 2023 running of the Vanguard Capital Markets Model® (VCMM). Equity returns reflect a 2-point range around the 50th percentile of the distribution of probable outcomes. Fixed income returns reflect a 1-point range around the 50th percentile. More extreme returns are possible.

Equities	Return projection	Median volatility
U.S. equities	**3.7%–5.7%**	17.0%
Global equities ex-U.S. (unhedged)	**6.4%–8.4%**	18.2%

Fixed income	Return projection	Median volatility
U.S. aggregate bonds	**4.0%–5.0%**	5.6%
U.S. Treasury bonds	**3.6%–4.6%**	5.9%
Global bonds ex-U.S. (hedged)	**4.0%–5.0%**	4.4%

These probabilistic return assumptions depend on current market conditions and, as such, may change over time.

IMPORTANT: The projections or other information generated by the Vanguard Capital Markets Model® regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. Distribution of return outcomes from the VCMM are derived from 10,000 simulations for each modeled asset class. Simulations are as of June 30, 2023. Results from the model may vary with each use and over time. For more information, see Important information page.

Source: Vanguard Investment Strategy Group.

Vanguard monthly market and economic update

Region-by-region outlook

United States

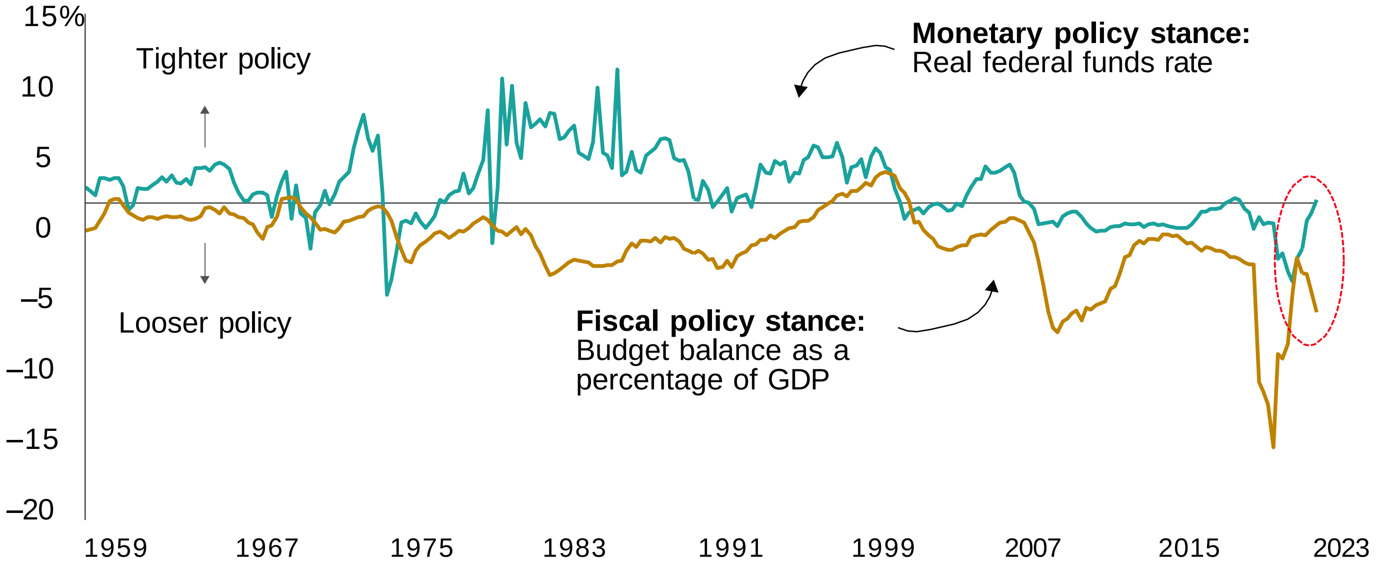
In the last significant data release before the Federal Reserve's next policy decision, core inflation accelerated in August compared with the two previous months, the Bureau of Labor Statistics reported. Although both core and headline inflation marginally exceeded our expectations, we don't see cause for concern. Shelter costs continue to trend lower, goods prices have been deflationary, and—outside of volatile transportation prices—services prices have been largely within expectations.

- We still expect year-over-year headline inflation of 3.2% and core inflation of 3.6% to end 2023, based on the Personal Consumption Expenditures Index, one of two key U.S. inflation indicators. However, given recent volatility in energy prices, the upside risk to our headline forecast has increased.
- Either a rate hike or a pause seems plausible at the September 20 meeting of the Federal Reserve—but we forecast another 25–75 basis points of Fed rate hikes before the end of the current monetary tightening cycle. The Fed's current rate target is 5.25%–5.50%, a 22-year high.
- Our view that the Fed may raise its rate target by 25–75 basis points is in line with market expectations, though we differ from the market on when the cycle will reverse. Markets foresee rate cuts early next year, while we foresee rate cuts starting only in the second half of 2024. We believe the catalyst for easing would be either a recession or inflation falling while economic activity remains strong (a "soft landing"). A recession appears significantly more likely.
- We recently increased our forecast for 2023 GDP growth to 1.8%. Recession in the next 18 months remains our baseline expectation, though we now peg the probability of recession at about 70%, down from our previous view of more than 90%.

Over decades, U.S. fiscal and monetary policies have mostly traveled in the same direction, toward either more restrictive (tighter) or less restrictive (looser) financial conditions. Recently, though, they have diverged. Legislation intended to boost the economy after the COVID-19 pandemic has run into an aggressive series of central bank interest rate hikes meant to quell the post-pandemic recovery's rampant inflation.

Vanguard monthly market and economic update

U.S. fiscal and monetary policies heading in different directions



In short, explains Josh Hirt, a Vanguard senior economist, "Monetary policy is still working its way through the economy, trying to constrain activity even as the impacts of supportive fiscal policy have kicked in. This is one of the reasons we believe the economy faces a period of higher sustained interest rates than we've grown accustomed to seeing." Vanguard believes that the Federal Reserve may need to raise rates further and keep them at their highest levels for an extended period in the face of continued economic resilience.

Note: The federal funds rate is the annualized rate of interest that banks charge one another for overnight loans. The Federal Reserve sets a target rate that controls the effective rate. The real (inflation-adjusted) federal funds rate is the effective federal funds rate minus the 12-month rate of core inflation (which excludes volatile food and energy prices), as measured by the Consumer Price Index. The budget balance (surplus or deficit) is for the federal government and is a rolling 12-month sum.
Sources: Vanguard calculations through June 30, 2023, using data from the U.S. Treasury, the Bureau of Labor Statistics, the Federal Reserve Bank of New York, and the Bureau of Economic Analysis.

Vanguard monthly market and economic update

China

A September 15 release of data on retail and housing sales, industrial production, and fixed asset investment will say a lot about whether an economy that has struggled for several months may have hit its bottom.

- "Recent data releases on trade, inflation, and credit demand weren't as dire as many had expected," said Grant Feng, a Vanguard senior economist. "One month of data isn't enough to say things have turned around, and China's economic challenges certainly aren't over, but further promising data this week would offer more evidence of potential stabilization."
- After a brief foray into deflation in July, when broad consumer prices fell on a year-over-year basis, consumer prices rose 0.1% year-over-year in August and 0.3% month- over-month. Producer prices continued to fall, declining by 3.0% in August from a year earlier, less than the 4.4% year-over-year drop in July. We expect headline inflation of 0.5%–1.0% for the full year.
- We maintain our view for full-year economic growth in a range of 5.25%–5.75%, with risks tilted to the lower end of our forecast range. In a recent interview, Feng and Qian Wang, Vanguard Asia-Pacific chief economist, provided perspective on China's challenging economy.

Emerging markets

Continued progress on inflation has enabled further interest rate cuts in Latin America. Banco Central Chile cut its key interest rate by 75 basis points on September 5, to 9.5%, following a 100-basis-point cut in late July. Banco Central do Brasil is widely expected to announce on September 19 that it will further lower its Selic rate. At its last meeting, the central bank lowered the Selic by 50 basis points to 13.25%.

- Vanguard is watching how emerging markets contend with a U.S. dollar that appreciated against leading global currencies over the last eight weeks.
- "The primary risk now for emerging markets from an appreciating dollar is that it raises the cost of dollar- denominated imports, which can drive inflation and slow the timing of interest rate cuts that are important to growth," said Vytas Maciulis, a Vanguard economist. Emerging markets have often used higher interest rates as a tool for defending currencies.
- We're also watching for potential effects of slowing growth in China. To date, the effects have been minimal amid global economic resilience and given greater diversification in global trade to countries including Mexico, South Korea, and Vietnam.

Vanguard monthly market and economic update

Euro area

The European Central Bank (ECB) announced a 25-basis- point rate hike on September 14, taking its deposit facility rate to 4%. With that, Vanguard believes the bank has reached its peak rate in a hiking cycle that began in July 2022.

- “The manufacturing sector has been in a deep malaise for a year, and broader high-frequency data have been weak in the third quarter,” said Shaan Raithatha, a Vanguard senior economist. “Given our expectation that already- implemented monetary policy tightening will have its maximum impact in the next two quarters, we don’t expect the ECB will see a need for further rate hikes.” We expect the ECB to leave rates on hold until the middle of 2024.
- The hiking cycle was initiated to counter generationally high inflation. Headline inflation was unchanged at 5.3% in August compared with a year earlier, according to Eurostat, the European Union’s statistical agency. We expect a sharp disinflationary trajectory for the remainder of 2023, with core inflation ending the year at about 3.3%.
- As with the United Kingdom, we are skeptical about the prospect for “painless disinflation,” in which prices normalize without economic weakening and meaningful job losses. We expect the unemployment rate to rise to 7%, though risks skew to the downside.
- We attach a 90% probability to recession in the next 18 months. In our base case, we expect the economy to contract in the third and fourth quarters of 2023.

United Kingdom

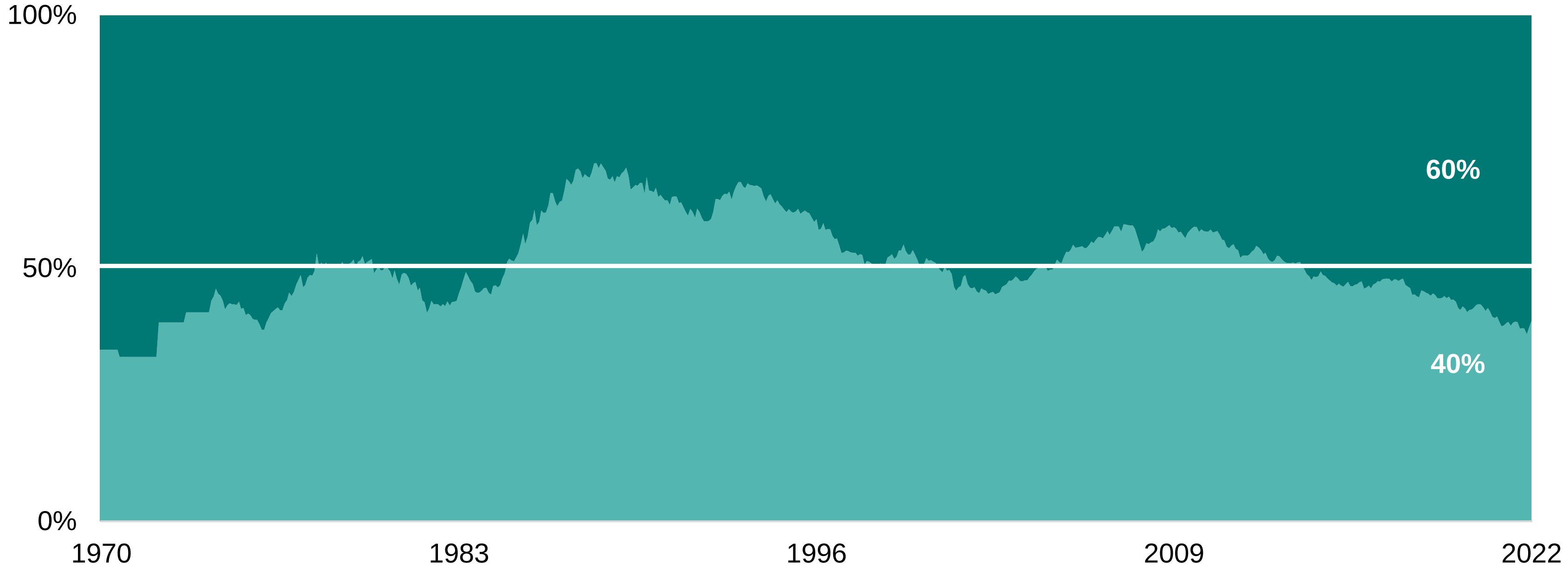
The Bank of England (BOE) finds itself in a tricky spot ahead of its September 21 interest rate announcement. Inflation and wage pressures remain strong even as high-frequency data suggest economic weakening in the third quarter.

- We believe the bank will lift interest rates by 25 basis points on September 21, and we continue to foresee a rate peak of 5.50%–5.75%. Persistently strong wage and inflation data could cause the BOE to hike beyond our forecast peak.
- We expect both headline and core inflation to fall to close to 5% by the end of 2023, led by favorable comparisons to year-earlier prices for energy, food, and core goods. But we foresee limited progress on services inflation the rest of the year.
- The latest employment report sent mixed signals. “Although wage growth remains hot, there are signs of labor market easing,” said Shaan Raithatha, a Vanguard senior economist. “Employment fell further, job vacancies dropped below 1 million for the first time since 2021, and the unemployment rate ticked up. We believe the BOE will almost certainly raise the bank rate in its September meeting. The next meeting, in November, will be a closer call.”
- We continue to expect full-year 2023 GDP to be largely unchanged from 2022. Our base case remains that the U.K. economy will enter recession within the next 18 months.

Appendix

Why international stocks?

U.S. and international market value, as a percentage of global market value



U.S. market cap as a percentage of global market cap

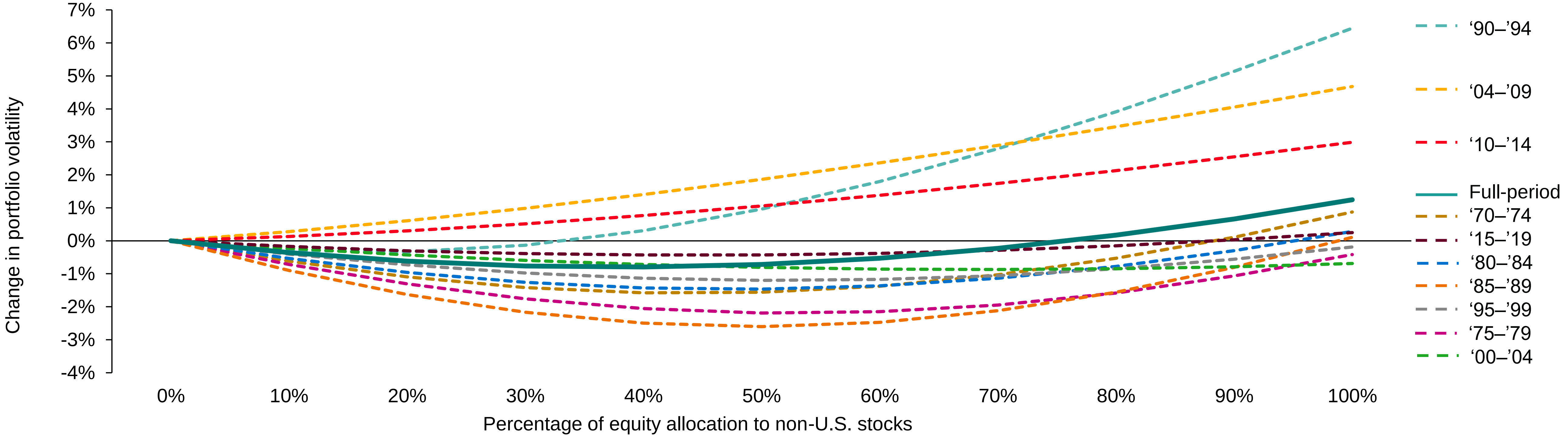
Non-U.S. market cap as a percentage of global market cap

- They are a valuable diversifier to a balanced portfolio and can serve to dampen volatility over the long-term
- International stocks, including emerging markets, account for nearly 40% of the global equity market
- Offer exposure to global industries and a wider array of economic and market forces

Notes: U.S. market represented by MSCI USA Index; non-U.S. market represented by MSCI World ex USA from 1969 through 1987 and MSCI All Country World Index ex USA thereafter.
Sources: Vanguard, FactSet, MSCI, as of December 31, 2022.

International diversification has reduced portfolio volatility through time

Change in annualized volatility by non-overlapping 5-year periods when including non-U.S. stocks in a U.S. equity portfolio, 1970-2022



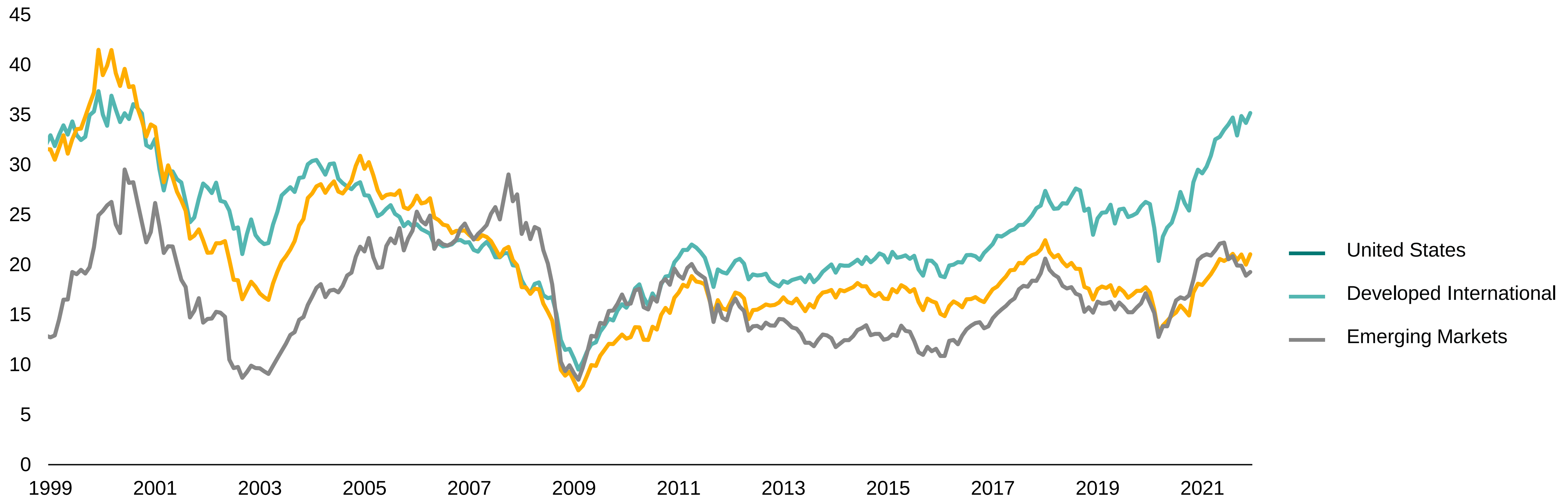
Past performance is no guarantee of future results. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Notes: Non-U.S. equities represented by MSCI World Index ex USA from 1970 through June 1994 and MSCI All Country World Index ex USA thereafter. U.S. stocks are represented by the FT Wilshire 5000 Index from 1970 through June 1994, MSCI USA Investable Market Index from July 1994 through June 2001, and CRSP US Total Market Index thereafter.

Sources: Investment Advisory Research Center calculations using data from MSCI and Morningstar Direct. Data as of December 31, 2022.

Valuations stretched in the U.S. and developed markets

Valuation for global stock indexes Price over 36–month trailing earnings



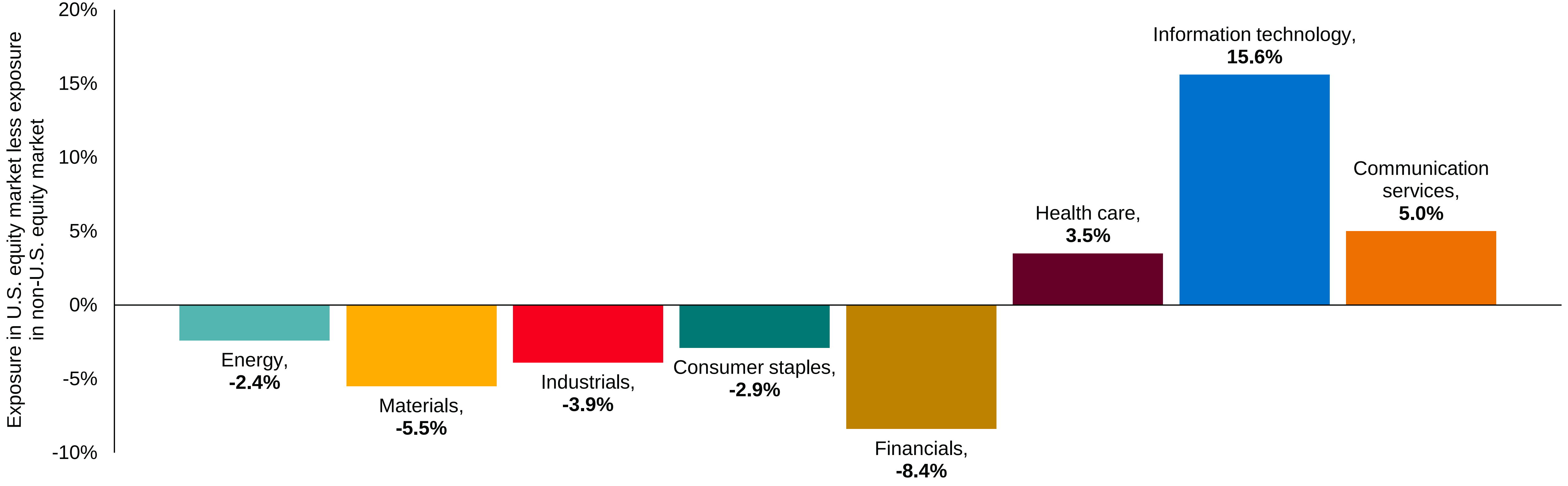
Past performance is no guarantee of future results. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Notes: Figure displays the price/earnings ratio with 36-month trailing average earnings. United States is defined as the MSCI United States Index, developed markets ex-US are defined as the MSCI All-World ex-US Index, and emerging markets are defined as the MSCI Emerging Markets Index. Data as of December 31, 2021.
Sources: Vanguard calculations, based on data from MSCI.

Slide ID #: S005102 Tracking #: 3135994 Expiration date: 4/2/2025

Global orientation helps reduce sector tilts

Relative sector weights for U.S. versus non-U.S. equities



Notes: U.S. equity is represented by MSCI USA Index. Non-U.S. equity is represented by MSCI All-Country World ex USA Index.
Sources: Investment Advisory Research Center calculations, based on data from FactSet. Data as of December 31, 2021.

Geographic revenue snapshot

Majority of global revenue comes from companies domiciled outside of the U.S.

S&P 500 Index revenue
Revenue exposure by country

Total LTM Revenue $15,289.8B

	% of Tot. Rev.	% Chg (Y/Y)
United States	58.9	-1.1
Mainland China	7.6	1.3
Japan	2.8	-5.5
United Kingdom	2.3	-3.0
Germany	2.2	-5.5
Canada	1.8	-1.3
Taiwan, China	1.5	32.7
France	1.4	-4.0

Showing up to 8 of 257 countries
Values are estimated based on FactSet's proprietary algorithm

MSCI ACWI ex-USA Index revenue
Revenue exposure by country

Total LTM Revenue 18,969.1B

	% of Tot. Rev.	% Chg (Y/Y)
United States	18.3	5.3
Mainland China	14.1	-3.8
Japan	8.7	-5.4
Canada	5.2	-7.5
India	4.4	4.8
United Kingdom	4.1	-3.9
Australia	3.4	-4.2
Germany	3.3	-2.1

Showing up to 8 of 257 countries
Values are estimated based on FactSet's proprietary algorithm

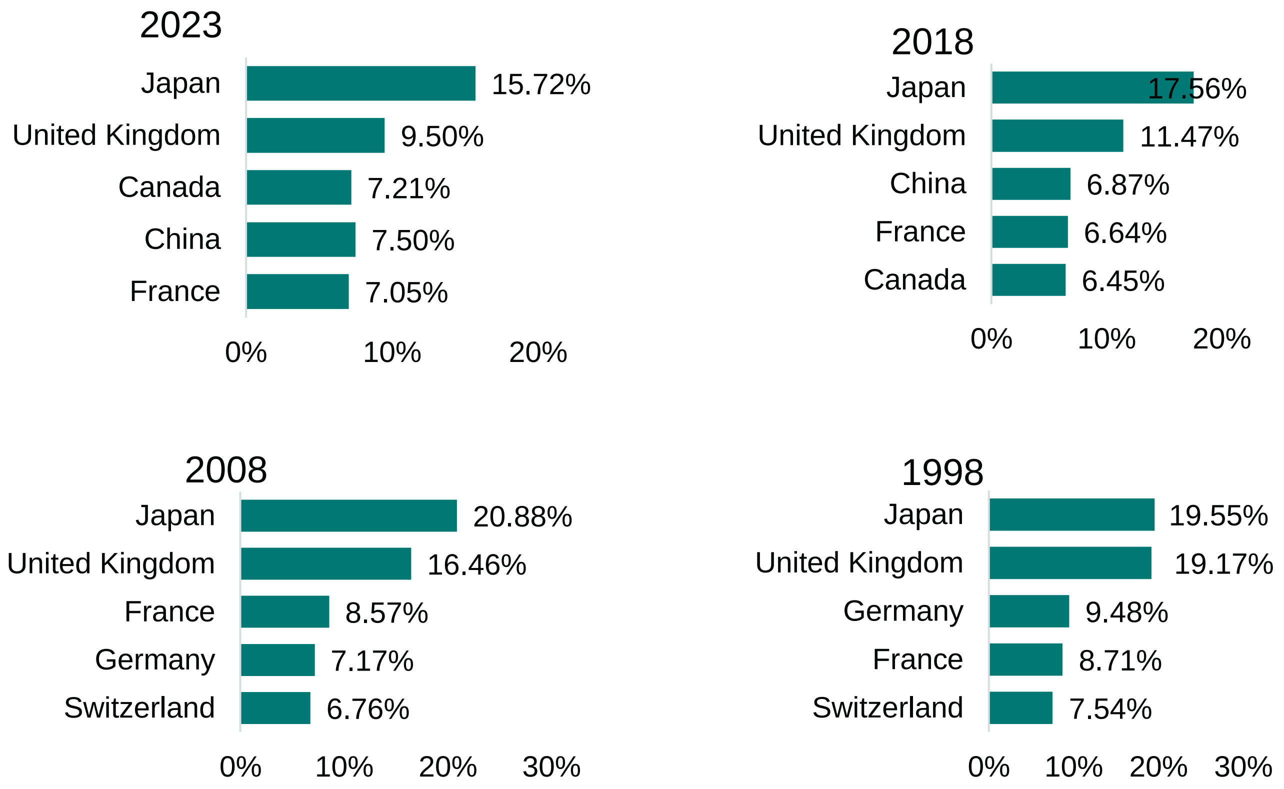
Past performance is not a guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.
Source: FactSet, as of August 28, 2023.
Note: U.S. equity represented by S&P 500; non-U.S. equity represented by MSCI ACWI ex-USA Index.

Country weighting over time: 1998–2023

Not investing international means missing out on 50 countries outside the U.S.

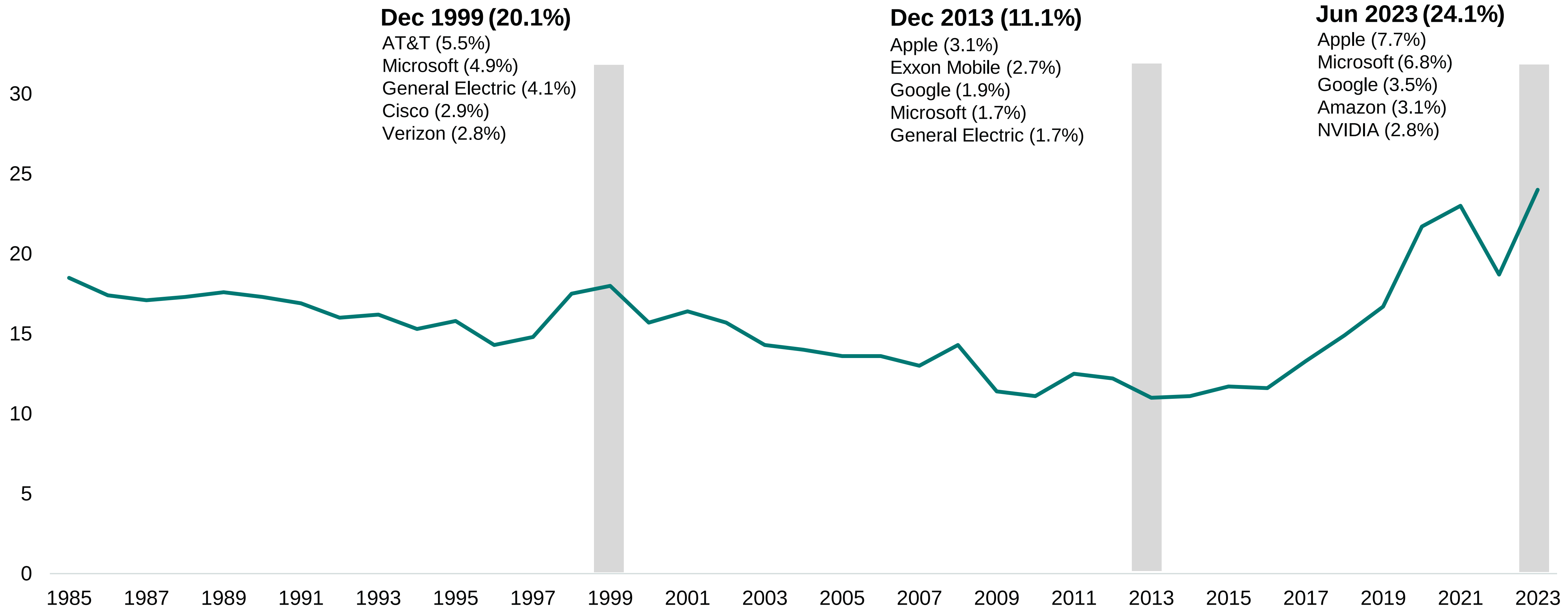
Countries	1998	2003	2008	2013	2018	2023
Japan	19.55	19.20	20.88	15.68	17.56	15.72
United Kingdom	19.17	23.21	16.46	15.82	11.47	9.50
China	0.00	0.87	2.09	3.96	6.87	7.50
Canada	0.00	0.01	0.00	7.07	6.45	7.21
France	8.71	8.54	8.57	6.59	6.64	7.05
Switzerland	7.54	6.65	6.76	6.04	5.45	5.84
Germany	9.48	6.43	7.17	6.41	5.68	5.09
Australia	2.52	4.56	4.91	5.35	4.81	4.98
Taiwan	0.00	1.42	1.99	2.74	3.20	4.66
India	0.00	0.65	1.19	1.53	2.70	4.54
Korea	0.00	1.89	2.45	3.25	3.54	3.49
Netherlands	5.96	4.95	2.06	1.87	2.02	2.69
Sweden	2.49	2.01	1.63	2.31	1.96	2.11
Denmark	0.83	0.68	0.69	0.95	1.14	1.82
Italy	4.73	3.47	2.95	1.76	1.68	1.70
Hong Kong	3.17	1.47	2.87	2.15	2.40	1.52
Spain	3.12	3.30	3.71	2.28	1.99	1.61
Brazil	1.11	1.05	2.33	2.18	1.94	1.63
South Africa	0.99	1.57	1.50	1.50	1.57	0.86
Singapore	1.24	0.74	0.84	1.14	0.97	0.84
Mexico	1.01	0.74	0.95	0.98	0.72	0.78
Thailand	0.25	0.36	0.25	0.48	0.85	0.65
Belgium	1.72	0.94	0.61	0.87	0.73	0.63
Finland	1.41	1.49	1.13	0.76	0.78	0.60
Norway	0.37	0.43	0.50	0.67	0.60	0.53
Indonesia	0.17	0.17	0.26	0.44	0.56	0.57
Malaysia	0.30	0.00	0.55	0.85	0.74	0.44
Russia	0.00	0.00	1.03	0.98	0.71	0.00

Top 5 countries



Source: Vanguard as of June 30, 2023. Note: Table represents the top 28 regions by weight in the Spliced Total International Stock Index as of March 31, 2022. Benchmark history: Spliced Total International Stock Index: Total International Composite Index through August 31, 2006; MSCI EAFE + Emerging Markets Index through December 15, 2010; MSCI AWI ex USA IMI Index through June 2, 2013; and FTSE Global All Cap ex US Index thereafter.

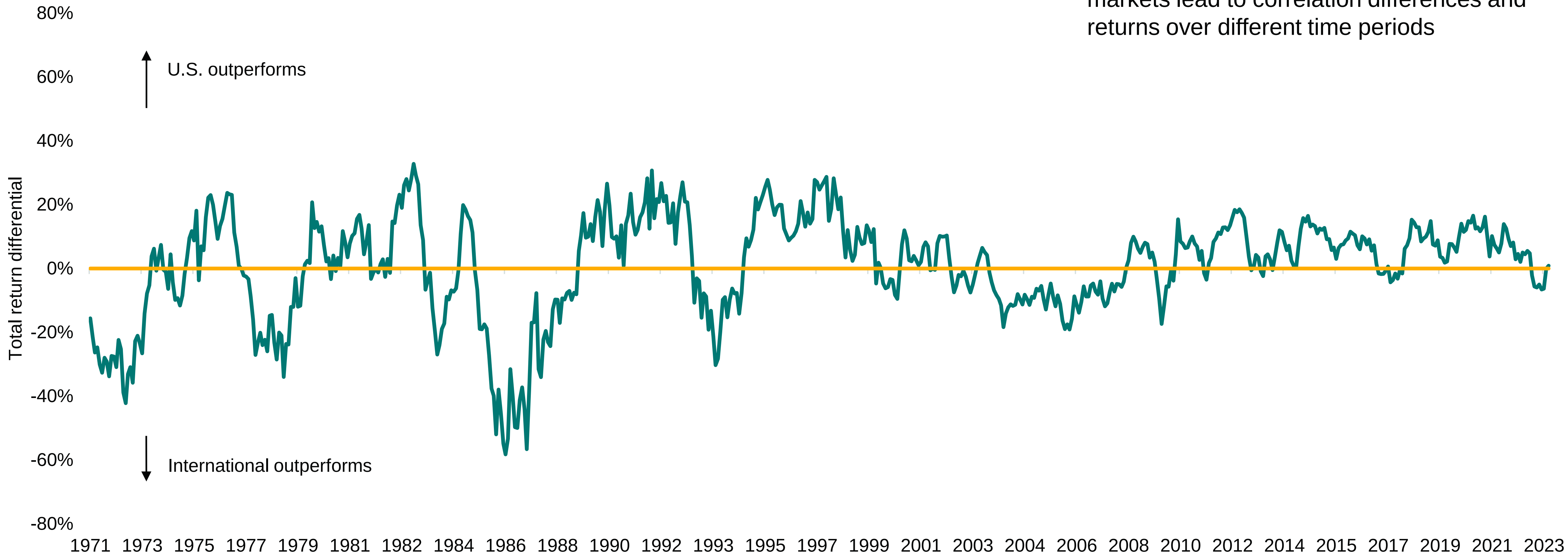
Top five stocks as percentage of S&P 500



Past performance is no guarantee of future results. The performance of an index is not an exact representation of any particular investments, as you cannot invest directly in an index.
Sources: Vanguard and FactSet as of June 30, 2023.

Historical returns illustrate benefits of global exposure during various market cycles

Trailing 12-month return differential between U.S. and non-U.S. stocks

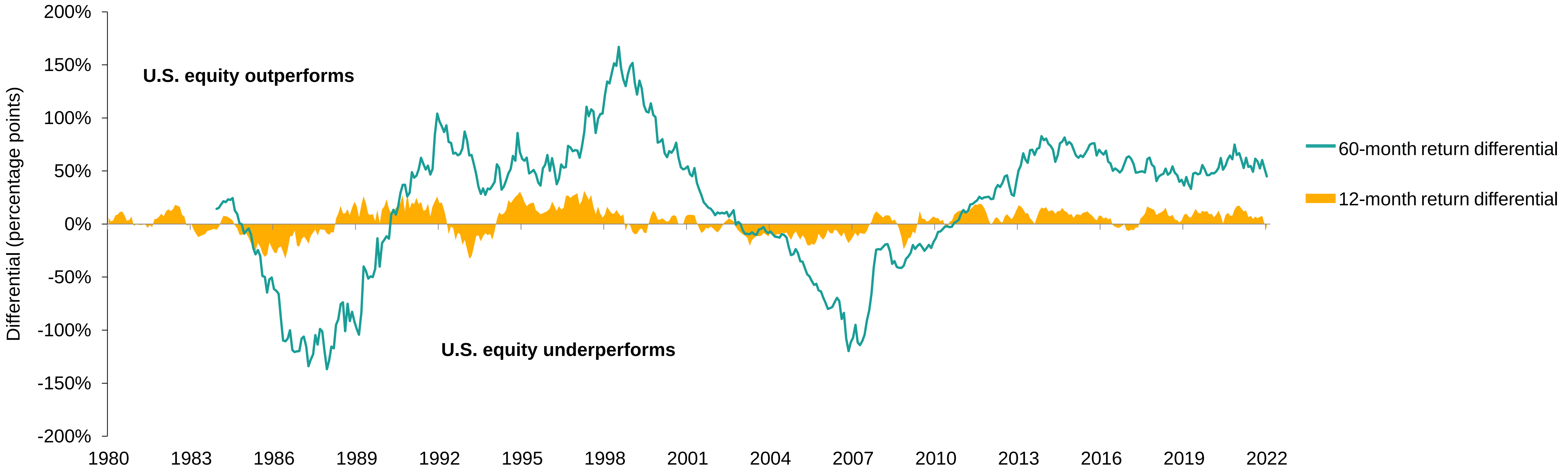


- Idiosyncrasies between the U.S. and non-U.S. markets lead to correlation differences and returns over different time periods

Past performance is no guarantee of future results. The performance of an index is not an exact representation of any particular investments, as you cannot invest directly in an index.
Source: Vanguard, as of June 30, 2023.
Note: U.S. equity represented by Dow Jones Wilshire 5000 Index through April 22, 2005; MSCI US Broad Market Index through June 2, 2013; CRSP US Total Market Index thereafter. Non-U.S. equity represented by MSCI World Index ex US.

Performance differentials can be significant and highly variable

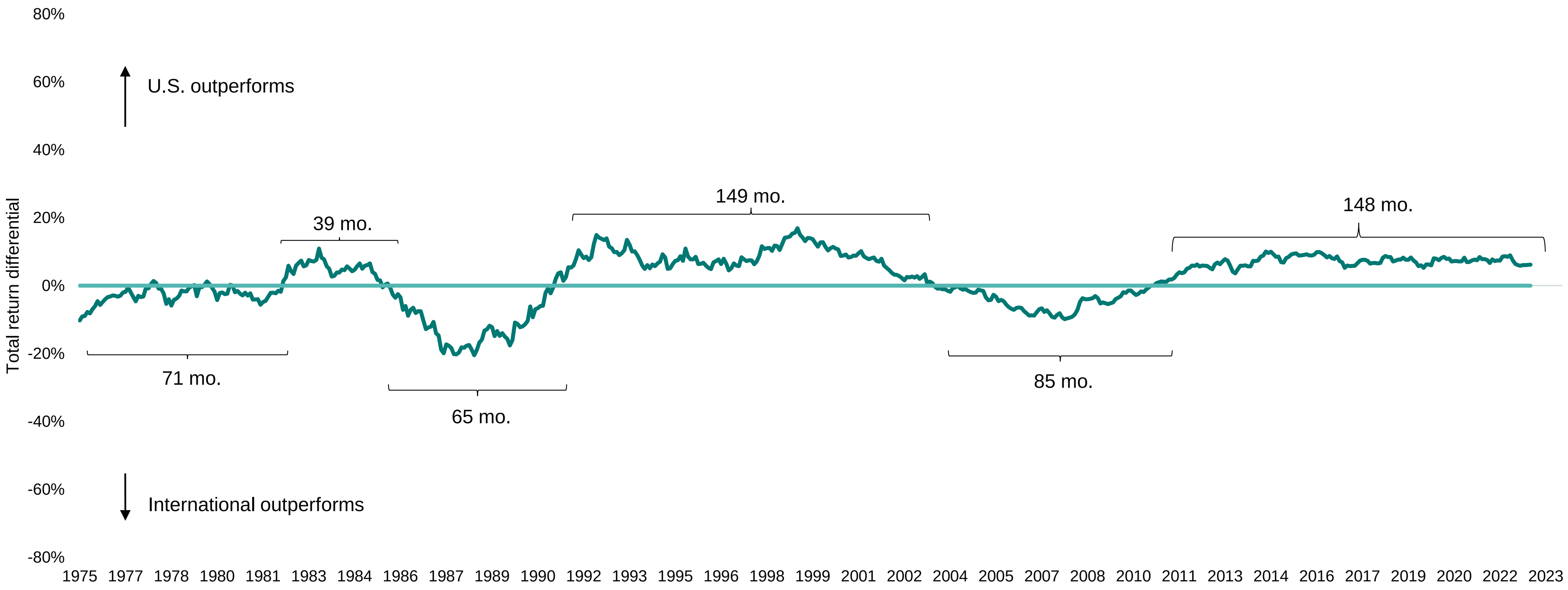
Relative performance of U.S and non-U.S. equity



Past performance is no guarantee of future results. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.
Notes: U.S. equity is represented by Dow Jones Wilshire 5000 Index through April 22, 2005, MSCI US Broad Market Index through June 2, 2013, and CRSP US Total Market Index thereafter. Non-U.S. equity is represented by MSCI World Index through December 31, 1987, and MSCI AC World ex US Index thereafter.
Sources: Investment Advisory Research Center calculations, based on data from FactSet. Data as of December 31, 2022.

U.S. versus international equity return differential (rolling 60 month)

Outperformance varies over time



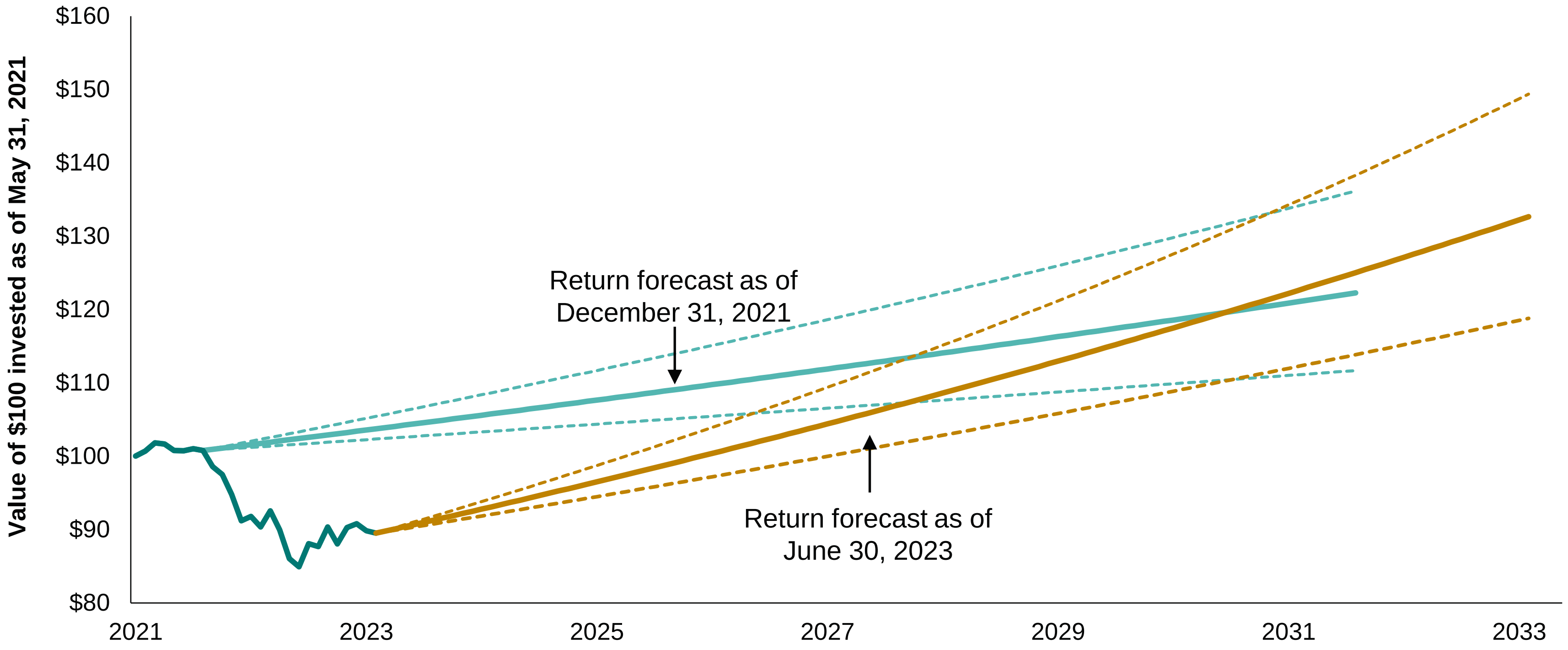
Past performance is no guarantee of future results. The performance of an index is not an exact representation of any particular investments, as you cannot invest directly in an index.
Source: Vanguard, as of June 30, 2023..
Note: U.S. equity represented by Dow Jones Wilshire 5000 Index through April 22, 2005; MSCI US Broad Market Index through June 2, 2013; CRSP US Total Market Index thereafter. Non-U.S. equity represented by MSCI World Index ex US.

Rising rates mean higher returns for long-term investors

Higher coupon payments offset principal losses

- We expect investors to be better off because of (not in spite of) rising rates.
- The amount of time this recovery takes is equal to duration—about seven years for the U.S. aggregate bond index.
- This does not mean that investors won't realize more fixed income losses in the short term or are guaranteed profits in the long term.
- Interest rate risk can be reduced by calibrating duration to time horizon.

Near-term pain, but long-term gain



IMPORTANT: The projections and other information generated by the VCMM regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. Distribution of return outcomes from VCMM are derived from 10,000 simulations for each modeled asset class. Simulations as of December 31, 2021, and June 30, 2023. Results from the model may vary with each use and over time. For more information, please see the "Important information" section.

Notes: The chart shows actual returns for the Bloomberg U.S. Aggregate Bond Index along with Vanguard's forecast for cumulative returns over the subsequent 10 years as of December 31, 2021, and June 30, 2023. The dashed lines represent the 10th and 90th percentiles of the forecasted distribution. Data as of June 30, 2023.

Sources: Vanguard calculations, using June 30, 2023, VCMM simulations and data from Bloomberg.

Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

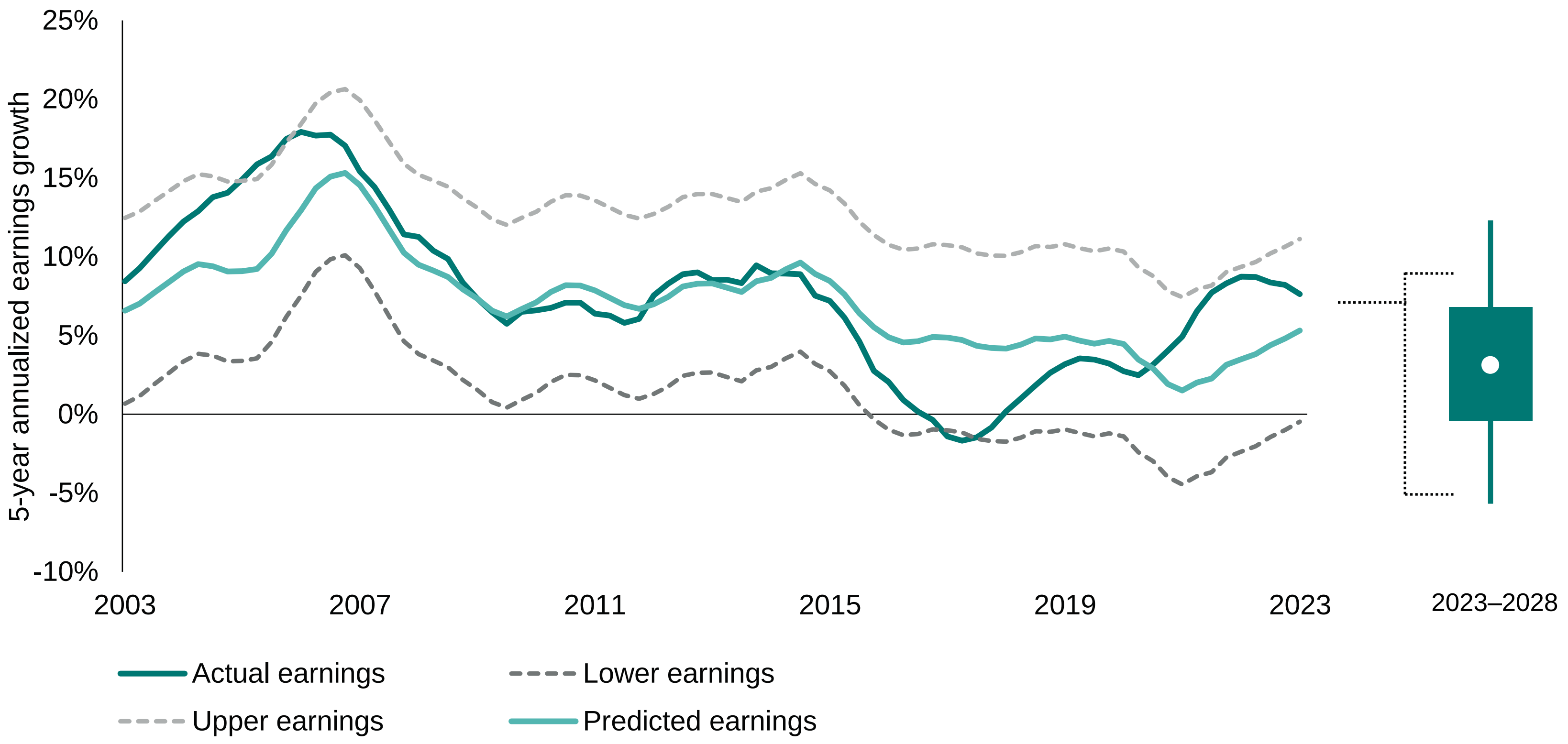
Earnings growth should be a headwind for the U.S. compared with that of the last decade

GDP and margins are likely to be headwinds

- U.S. profit margins have been consistently higher than those of other developed markets since 2010.
- High labor costs, "slow-balization," and fiscal policy normalization are near-term headwinds.
- A U.S. recession would lower our outlook for revenue growth.
- We expect earnings growth to average 5% per year for the next decade.

Five-year annualized U.S. earnings have been above expectations since 2020

Outlook for the next five years



IMPORTANT: The projections and other information generated by the VCMM regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. Distribution of return outcomes from VCMM are derived from 10,000 simulations for each modeled asset class. Simulations as March 31, 2023. Results from the model may vary with each use and over time.

For more information, please see the "Important information" section.

Notes: For more information, see our forthcoming research in the *Journal of Investing* titled: From Economics to Earnings: A Macro-Based Equity Earnings Growth Forecasting Model. Data are as of March 31, 2023.

Sources: Vanguard calculations, based on data from Refinitiv.

Important information

IMPORTANT: The projections and other information generated by the Vanguard Capital Markets Model regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. VCMM results will vary with each use and over time.

The VCMM projections are based on a statistical analysis of historical data. Future returns may behave differently from the historical patterns captured in the VCMM. More important, the VCMM may be underestimating extreme negative scenarios unobserved in the historical period on which the model estimation is based.

The Vanguard Capital Markets Model® is a proprietary financial simulation tool developed and maintained by Vanguard's primary investment research and advice teams. The model forecasts distributions of future returns for a wide array of broad asset classes. Those asset classes include U.S. and international equity markets, several maturities of the U.S. Treasury and corporate fixed income markets, international fixed income markets, U.S. money markets, commodities, and certain alternative investment strategies. The theoretical and empirical foundation for the Vanguard Capital Markets Model is that the returns of various asset classes reflect the compensation investors require for bearing different types of systematic risk (beta). At the core of the model are estimates of the dynamic statistical relationship between risk factors and asset returns, obtained from statistical analysis based on available monthly financial and economic data from as early as 1960. Using a system of estimated equations, the model then applies a Monte Carlo simulation method to project the estimated interrelationships among risk factors and asset classes as well as uncertainty and randomness over time. The model generates a large set of simulated outcomes for each asset class over several time horizons. Forecasts are obtained by computing measures of central tendency in these simulations. Results produced by the tool will vary with each use and over time.

Indexes for VCMM simulations

The long-term returns of our hypothetical portfolios are based on data for the appropriate market indexes through March 31, 2023. We chose these benchmarks to provide the most complete history possible, and we apportioned the global allocations to align with Vanguard's guidance in constructing diversified portfolios. Asset classes and their representative forecast indexes are as follows:

U.S. equities: MSCI US Broad Market Index.
Global ex-U.S. equities: MSCI All Country World ex USA Index.
U.S. REITs: FTSE/NAREIT US Real Estate Index.
U.S. cash: U.S. 3-Month Treasury—constant maturity.
U.S. Treasury bonds: Bloomberg U.S. Treasury Index.
U.S. short-term Treasury bonds: Bloomberg U.S. 1–5 Year Treasury Bond Index.
U.S. long-term Treasury bonds: Bloomberg U.S. Long Treasury Bond Index.
U.S. credit bonds: Bloomberg U.S. Credit Bond Index.
U.S. short-term credit bonds: Bloomberg U.S. 1–3 Year Credit Bond Index.
U.S. high-yield corporate bonds: Bloomberg U.S. High Yield Corporate Bond Index.
U.S. bonds: Bloomberg U.S. Aggregate Bond Index.
Global ex-U.S. bonds: Bloomberg Global Aggregate ex-USD Index.
U.S. TIPS: Bloomberg U.S. Treasury Inflation Protected Securities Index.
U.S. short-term TIPS: Bloomberg U.S. 1–5 Year Treasury Inflation Protected Securities Index.
Euro area aggregate bonds: Bloomberg Euro-Aggregate Index.
U.K. aggregate bonds: Bloomberg Sterling Aggregate Index.
Global aggregate bonds: Bloomberg Global Aggregate Index.
U.S. aggregate bonds: Bloomberg U.S. Aggregate Index.
Japan aggregate bonds: Bloomberg Japanese Aggregate Index.
Australia aggregate bonds: Bloomberg Australia Aggregate Index.
Canada aggregate bonds: Bloomberg Canada Aggregate Index.
Emerging markets: MSCI Emerging Markets Index.
Developed markets ex-U.S.: MSCI World ex-US Index.

All equity indexes below are weighted by market capitalization. The factor definitions below apply to all slides except slide 9, where the factors are defined by the indexes described in the notes and sources.
Small-cap equities: Stocks with a market cap in the lowest two-thirds of the Russell 3000 Index.
Large-cap equities: Stocks with a market cap in the highest two-thirds of the Russell 1000 Index.
Growth equities: Stocks with a price/book ratio in the highest one-third of the Russell 1000 Index.
Value equities: Stocks with a price/book ratio in the lowest one-third of the Russell 1000 Index.

Important information (continued)

Sector indexes in the order they are presented on slide 9: S&P 500 Energy Sector Total Return Index, S&P 500 Industrials Sector Total Return Index, S&P 500 Financial Sector Total Return Index, S&P 500 Materials Sector Total Return Index, S&P 500 Consumer Discretionary Sector Total Return Index, S&P 500 Consumer Staples Sector Total Return Index, S&P 500 Information Technology Sector Total Return Index, S&P 500 Utility Sector Total Return Index, S&P 500 Health Care Sector Total Return Index, and S&P 500 Real Estate Sector GICS Level 1 Total Return Index. *GICS* stands for Global Industry Classification Standard.

Indexes for slide 12: Low-quality growth, high-quality growth, and high-quality value portfolios are constructed based on data from Kenneth R. French's website, using New York Stock Exchange-listed companies sorted in quintiles
by operating profit and the ratio of book value to market value (B/P). The low-quality growth portfolio is represented by the lowest quintile operating profit (quality) and B/P companies. The high-quality value portfolio is represented
by the highest quintile operating profit and B/P companies. U.S. equities are represented by the Dow Jones U.S. Total Stock Market Index (formerly known as the Dow Jones Wilshire 5000) through April 22, 2005; the MSCI US
Broad Market Index through June 2, 2013; and the CRSP US Total Market Index thereafter. Growth stocks are based on the S&P 500/Barra Growth Index through May 16, 2003; the MSCI US Prime Market Growth Index through April 16, 2013; and the CRSP US Large Cap Growth Index thereafter. Value stocks are based on the S&P 500/Barra Value Index through May 16, 2003; the MSCI US Prime Market Value Index through April 16, 2013; and the CRSP US Large Cap Value Index thereafter. Small-cap equities are based on the Russell 2000 Index through May 16, 2003; the MSCI US Small Cap 1750 Index through January 30, 2013; and the CRSP US Small Cap Index thereafter. Emerging-market equities are based on the Select Emerging Market Index through August 23, 2006; the MSCI Emerging Markets Index Net USD through January 9, 2013; the FTSE Emerging Transition Index through June 27, 2013; the FTSE Emerging Index through November 1, 2015; the FTSE Emerging Markets All Cap China A Transition Index through 9/18/2016; and the FTSE Emerging Markets All Cap China A Inclusion Index thereafter. High-yield bonds are based on the Bloomberg U.S. Corporate High-Yield Index. International equities are based on the MSCI EAFE Index through May 31, 2010, and the MSCI All Country World Index ex USA thereafter. Commodities are based on the Bloomberg Commodities Total Return Index. U.S. bonds are based on the Bloomberg U.S. Aggregate Bond Index through December 31, 2009, and the Bloomberg U.S. Aggregate Float Adjusted Index thereafter. U.S. home prices are obtained from the U.S. home price dataset published by Robert Shiller.

All investing is subject to risk, including the possible loss of the money you invest. Be aware that fluctuations in the financial markets and other factors may cause declines in the value of your account. There is no guarantee that any particular asset allocation or mix of funds will meet your investment objectives or provide you with a given level of income. Diversification does not ensure a profit or protect against a loss. Prices of mid- and small-cap stocks often fluctuate more than those of large-company stocks. Investments in stocks or bonds issued by non-U.S. companies are subject to risks including country/regional risk and currency risk. These risks are especially high in emerging markets.

Bond funds are subject to the risk that an issuer will fail to make payments on time, and that bond prices will decline because of rising interest rates or negative perceptions of an issuer's ability to make payments. While U.S. Treasury or government agency securities provide substantial protection against credit risk, they do not protect investors against price changes due to changing interest rates. Unlike stocks and bonds, U.S. Treasury bills are guaranteed as to the timely payment of principal and interest. High-yield bonds generally have medium- and lower-range credit quality ratings and are therefore subject to a higher level of credit risk than bonds with higher credit quality ratings.

Important information

IMPORTANT: The projections or other information generated by the Vanguard Capital Markets Model® (VCMM) regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. VCMM results will vary with each use and over time.

The VCMM projections are based on a statistical analysis of historical data. Future returns may behave differently from the historical patterns captured in the VCMM. More importantly, the VCMM may be underestimating extreme negative scenarios unobserved in the historical period on which the model estimation is based.

The Vanguard Capital Markets Model® is a proprietary financial simulation tool developed and maintained by Vanguard's primary investment research and advice teams. The model forecasts distributions of future returns for a wide array of broad asset classes. Those asset classes include U.S. and international equity markets, several maturities of the U.S. Treasury and corporate fixed income markets, international fixed income markets, U.S. money markets, commodities, and certain alternative investment strategies. The theoretical and empirical foundation for the Vanguard Capital Markets Model is that the returns of various asset classes reflect the compensation investors require for bearing different types of systematic risk (beta). At the core of the model are estimates of the dynamic statistical relationship between risk factors and asset returns, obtained from statistical analysis based on available monthly financial and economic data from as early as 1960. Using a system of estimated equations, the model then applies a Monte Carlo simulation method to project the estimated interrelationships among risk factors and asset classes as well as uncertainty and randomness over time. The model generates a large set of simulated outcomes for each asset class over several time horizons. Forecasts are obtained by computing measures of central tendency in these simulations. Results produced by the tool will vary with each use and over time.

Important information

For more information about any fund, visit institutional.vanguard.com or call 866-499-8473 to obtain a prospectus or, if available, a summary prospectus. Investment objectives, risks, charges, expenses, and other important information are contained in the prospectus; read and consider it carefully before investing.

Vanguard ETF® Shares are not redeemable with the issuing fund other than in very large aggregations worth millions of dollars. Instead, investors must buy or sell Vanguard ETF Shares in the secondary market and hold those shares in a brokerage account. In doing so, the investor may incur brokerage commissions and may pay more than net asset value when buying and receive less than net asset value when selling.

Mutual funds and all investments are subject to risk, including the possible loss of the money you invest. Prices of mid- and small-cap stocks often fluctuate more than those of large-company stocks. Investments in stocks or bonds issued by non-U.S. companies are subject to risks including country/regional risk and currency risk. These risks are especially high in emerging markets. Funds that concentrate on a relatively narrow sector face the risk of higher share-price volatility. It is possible that tax-managed funds will not meet their objective of being tax-efficient. Because company stock funds concentrate on a single stock, they are considered riskier than diversified stock funds.

Investments in bond funds are subject to the risk that an issuer will fail to make payments on time and that bond prices will decline because of rising interest rates or negative perceptions of an issuer's ability to make payments. High-yield bonds generally have medium- and lower-range credit quality ratings and are therefore subject to a higher level of credit risk than bonds with higher credit quality ratings. Although the income from a municipal bond fund is exempt from federal tax, you may owe taxes on any capital gains realized through the fund's trading or through your own redemption of shares. For some investors, a portion of the fund's income may be subject to state and local taxes, as well as to the federal Alternative Minimum Tax. Diversification does not ensure a profit or protect against a loss. There is no guarantee that any particular asset allocation or mix of funds will meet your investment objectives or provide you with a given level of income.

While U.S. Treasury or government agency securities provide substantial protection against credit risk, they do not protect investors against price changes due to changing interest rates. Unlike stocks and bonds, U.S. Treasury bills are guaranteed as to the timely payment of principal and interest.

Investments in Target Retirement Funds and Trusts are subject to the risks of their underlying funds. The year in the fund or trust name refers to the approximate year (the target date) when an investor in the fund or trust would retire and leave the workforce. The fund/trust will gradually shift its emphasis from more aggressive investments to more conservative ones based on its target date. The Income Trust/Fund and Income and Growth Trust have fixed investment allocations and are designed for investors who are already retired. An investment in a Target Retirement Fund or Trust is not guaranteed at any time, including on or after the target date.

Vanguard is responsible only for selecting the underlying funds and periodically rebalancing the holdings of target-date investments. The asset allocations Vanguard has selected for the Target Retirement Funds are based on our investment experience and are geared to the average investor. Investors should regularly check the asset mix of the option they choose to ensure it is appropriate for their current situation.

Vanguard collective trusts are not mutual funds. They are collective trusts available only to tax-qualified plans and their eligible participants. Investment objectives, risks, charges, expenses, and other important information should be considered carefully before investing. The collective trust mandates are managed by Vanguard Fiduciary Trust Company, a wholly owned subsidiary of The Vanguard Group, Inc.

A stable value investment is neither insured nor guaranteed by the U.S. government. There is no assurance that the investment will be able to maintain a stable net asset value, and it is possible to lose money in such an investment.

Vanguard Digital Advisor® and Vanguard Personal Advisor® services are provided solely by Vanguard Advisers, Inc. (VAI), a registered investment advisor. Please review the Vanguard Digital Advisor and Personal Advisor brochure (https://personal.vanguard.com/pdf/vanguard-digital-advice-brochure.pdf) for important details about these services, including Personal Advisor's asset-based service levels. Vanguard Digital Advisor's and Personal Advisor's financial planning tools provide projections and goal forecasts, which are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. Vanguard Situational Advisor™ is provided by Vanguard Advisers, Inc. (VAI), a federally registered investment advisor. Eligibility restrictions may apply.

VAI is a subsidiary of The Vanguard Group, Inc., and an affiliate of Vanguard Marketing Corporation. Neither VAI nor its affiliates guarantee profits or protection from losses.

Important information

The Factor Funds are subject to investment style risk, which is the chance that returns from the types of stocks in which a Factor Fund invests will trail returns from U.S. stock markets. The Factor Funds are also subject to manager risk, which is the chance that poor security selection will cause a Factor Fund to underperform its relevant benchmark or other funds with a similar investment objective, and sector risk, which is the chance that significant problems will affect a particular sector in which a Factor Fund invests, or that returns from that sector will trail returns from the overall stock market.

The information contained herein does not constitute tax advice and cannot be used by any person to avoid tax penalties that may be imposed under the Internal Revenue Code. We recommend that you consult a tax or financial advisor about your individual situation.

Schwab Personal Choice Retirement Account® (PCRA) is offered through Charles Schwab & Co., Inc. (Member SIPC), the registered broker/dealer, which also provides other brokerage and custody services to its customers.

Charles Schwab & Co., Inc., and Vanguard are not affiliated and are not responsible for the products and services provided by the other. CFA® and Chartered Financial Analyst® are trademarks owned by CFA Institute.

The Vanguard Group has partnered with Financial Engines Advisors L.L.C. (FEA) to provide subadvisory services to the Vanguard Managed Account Program and Personal Online Advisor. FEA is an independent, federally registered investment advisor that does not sell investments or receive commission for the investments it recommends with respect to the services which it is engaged in as subadvisor for Vanguard Advisers, Inc. (VAI). Advice is provided by Vanguard Advisers, Inc. (VAI), a federally registered investment advisor and an affiliate of The Vanguard Group, Inc. (Vanguard). Vanguard is owned by the Vanguard funds, which are distributed by Vanguard Marketing Corporation, a registered broker-dealer affiliated with VAI and Vanguard. Neither Vanguard, FEA, nor their respective affiliates guarantee future results. Vanguard will use your information in accordance with Vanguard's Privacy Policy.

Edelman Financial Engines® is a registered trademark of Edelman Financial Engines, LLC. All rights reserved. Used with permission.

CGS identifiers have been provided by CUSIP Global Services, managed on behalf of the American Bankers Association by Standard & Poor's Financial Services, LLC, and are not for use or dissemination in a manner that would serve as a substitute for any CUSIP service. The CUSIP Database, © 2023 American Bankers Association. "CUSIP" is a registered trademark of the American Bankers Association.

"Bloomberg®" is a service mark of Bloomberg Finance L.P. and its affiliates, including Bloomberg Index Services Limited ("BISL"), the administrator of the index (collectively, "Bloomberg") and have been licensed for use for certain purposes by Vanguard. Bloomberg is not affiliated with Vanguard, and Bloomberg does not approve, endorse, review, or recommend the Vanguard funds. Bloomberg does not guarantee the timeliness, accurateness, or completeness of any data or information relating to the Vanguard funds.

Apple®, iPhone®, and iPad® are trademarks of Apple Inc., registered in the United States and other countries. App Store is a service mark of Apple Inc. Android™ is a trademark of Google Inc.

Morningstar data © 2023 Morningstar, Inc. All rights reserved. The information contained herein: (1) is proprietary to Morningstar and/or its content providers; (2) may not be copied or distributed; and (3) is not warranted to be accurate, complete, or timely. Neither Morningstar nor its content providers are responsible for any damages or losses arising from any use of this information. Past performance is no guarantee of future results.

Private investments involve a high degree of risk and, therefore, should be undertaken only by prospective investors capable of evaluating and bearing the risks such an investment represents. Investors in private equity generally must meet certain minimum financial qualifications that may make it unsuitable for specific market participants.

Important information

London Stock Exchange Group companies include FTSE International Limited ("FTSE"), Frank Russell Company ("Russell"), MTS Next Limited ("MTS"), and FTSE TMX Global Debt Capital Markets Inc. ("FTSE TMX"). All rights reserved. "FTSE®," "Russell®," "MTS®," "FTSE TMX®," and "FTSE Russell," and other service marks and trademarks related to the FTSE or Russell Indexes are trademarks of the London Stock Exchange Group companies and are used by FTSE, MTS, FTSE TMX, and Russell under license. All information is provided for information purposes only. No responsibility or liability can be accepted by the London Stock Exchange Group companies nor its licensors for any errors or for any loss from use of this publication. Neither the London Stock Exchange Group companies nor any of its licensors make any claim, prediction, warranty, or representation whatsoever, expressly or impliedly, either as to the results to be obtained from the use of the FTSE Indexes or the fitness or suitability of the indexes for any particular purpose to which they might be put.

The index is a product of S&P Dow Jones Indices LLC ("SPDJI") and has been licensed for use by Vanguard. Standard & Poor's® and S&P® are registered trademarks of Standard & Poor's Financial Services LLC ("S&P"); Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC ("Dow Jones"); S&P® and S&P 500® are trademarks of S&P; and these trademarks have been licensed for use by SPDJI and sublicensed for certain purposes by Vanguard. Vanguard product(s) are not sponsored, endorsed, sold, or promoted by SPDJI, Dow Jones, S&P, or their respective affiliates, and none of such parties make any representation regarding the advisability of investing in such product(s) nor do they have any liability for any errors, omissions, or interruptions of the index.

Center for Research in Security Prices, LLC (CRSP®) and its third-party suppliers have exclusive proprietary rights in the CRSP® Index Data, which has been licensed for use by Vanguard but is and shall remain valuable intellectual property owned by, and/or licensed to, CRSP®. The Vanguard Funds are not sponsored, endorsed, sold, or promoted by CRSP®, The University of Chicago, or The University of Chicago Booth School of Business, and neither CRSP®, The University of Chicago, nor The University of Chicago Booth School of Business makes any representation regarding the advisability of investing in the Vanguard Funds.

The Russell Indexes and Russell® are registered trademarks of Russell Investments and have been licensed for use by The Vanguard Group. The products are not sponsored, endorsed, sold, or promoted by Russell Investments, and Russell Investments makes no representation regarding the advisability of investing in the products.

"Dividend Achievers" is a trademark of The NASDAQ OMX Group, Inc. (collectively, with its affiliates, "NASDAQ OMX") and has been licensed for use by The Vanguard Group, Inc. Vanguard mutual funds are not sponsored, endorsed, sold, or promoted by NASDAQ OMX, and NASDAQ OMX makes no representation regarding the advisability of investing in the funds. NASDAQ OMX MAKES NO WARRANTIES AND BEARS NO LIABILITY WITH RESPECT TO THE VANGUARD MUTUAL FUNDS.

The funds or securities referred to herein are not sponsored, endorsed, or promoted by MSCI, and MSCI bears no liability with respect to any such funds or securities. The prospectus or the Statement of Additional Information contains a more detailed description of the limited relationship MSCI has with Vanguard and any related funds.

The Global Industry Classification Standard ("GICS") was developed by and is the exclusive property and a service mark of MSCI Inc. ("MSCI") and Standard and Poor's, a division of McGraw-Hill Companies, Inc. ("S&P") and is licensed for use by Vanguard. Neither MSCI, S&P, nor any third party involved in making or compiling the GICS or any GICS classification makes any express or implied warranties or representations with respect to such standard or classification (or the results to be obtained by the use thereof), and all such parties hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability, or fitness for a particular purpose with respect to any such standard or classification. Without limiting any of the foregoing, in no event shall MSCI, S&P, any of its affiliates, or any third party involved in making or compiling the GICS or any GICS classification have any liability for any direct, indirect, special, punitive, consequential, or any other damages (including lost profits) even if notified of the possibility of such damages.

Vanguard Marketing Corporation, Distributor of the Vanguard Funds.

Rev_092023