

Episcopal Foundation of Dallas

February 2022

Agenda

- I. Financial Market Review
- II. Portfolio Performance
- III. Fees and Expenses
- IV. Economic and Market Outlook

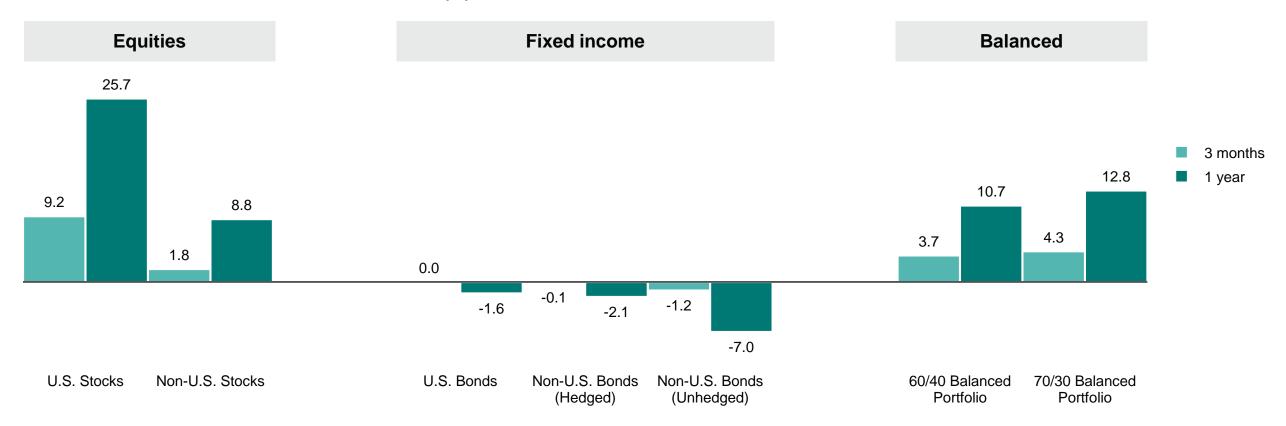
Presented by:

Geoffrey Hall, CFA, CAIA Senior Investment Consultant Vanguard Institutional Advisory Services®

Financial Market Review

Balanced portfolios produce strong returns over one year period

Global market returns as of December 31, 2021 (%)



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 Barclays, FTSE, MSCI, Russell, CRSP and Dow Jones.

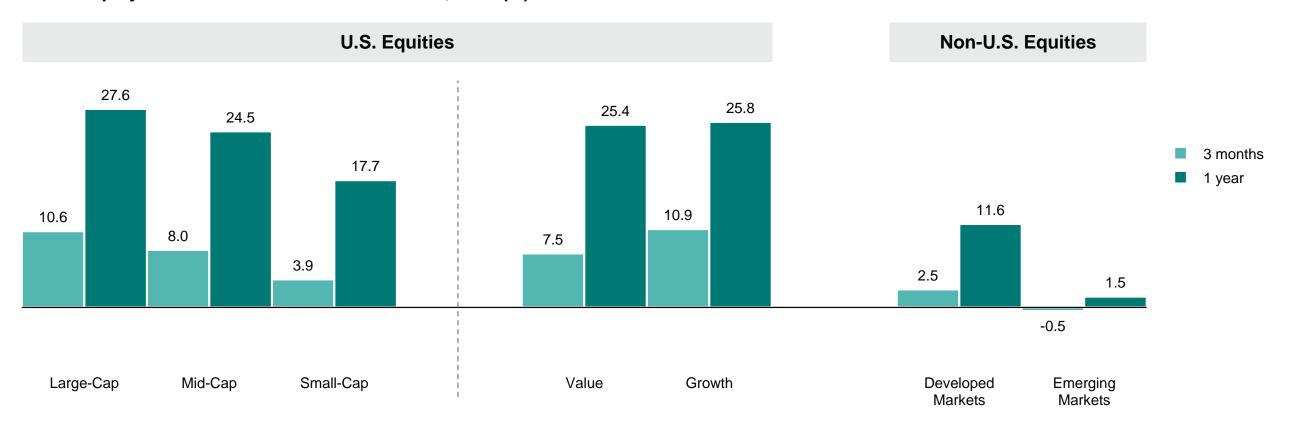
US Stocks (CRSP US Total Market Index), Non-US Stocks (FTSE Global All-Cap ex-US Index), US Bonds (Bloomberg Barclays US Aggregate Float Adjusted Index), Non-US Bonds hedged (Bloomberg Barclays Global Aggregate ex-USD Float Adjusted RIC Capped Index hedged), Non-US Bonds unhedged (Bloomberg Barclays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

International equities continue to lag U.S. equities due to coronavirus concerns; all segments of equity market produced positive returns for trailing one year

Global equity market returns as of December 31, 2021 (%)



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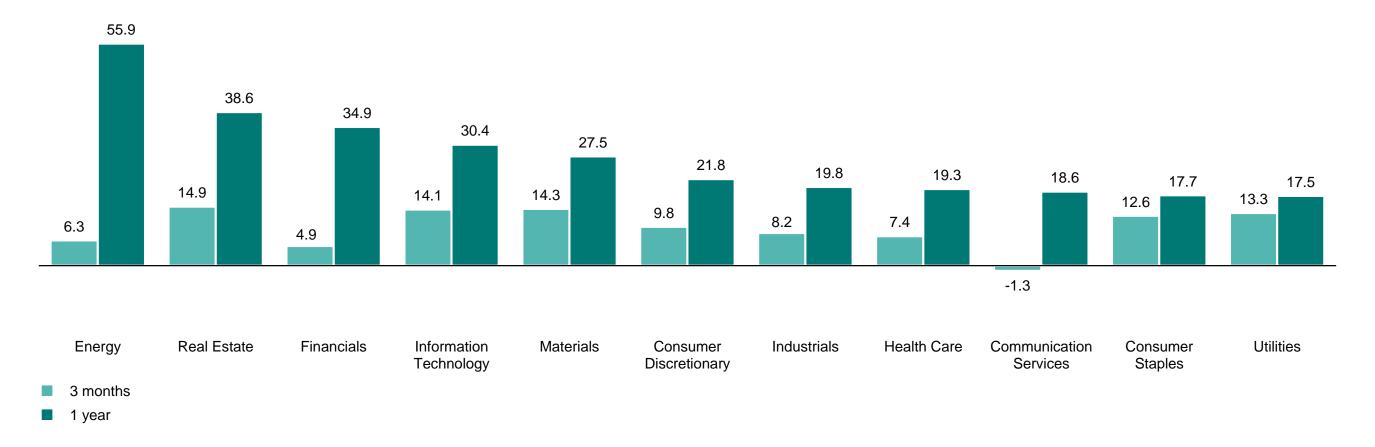
Sources: FTSE, MSCI, Russell, CRSP and Dow Jones.

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).

All U.S. sectors were positive for calendar year 2021

U.S. equity sector returns as of December 31, 2021 (%)



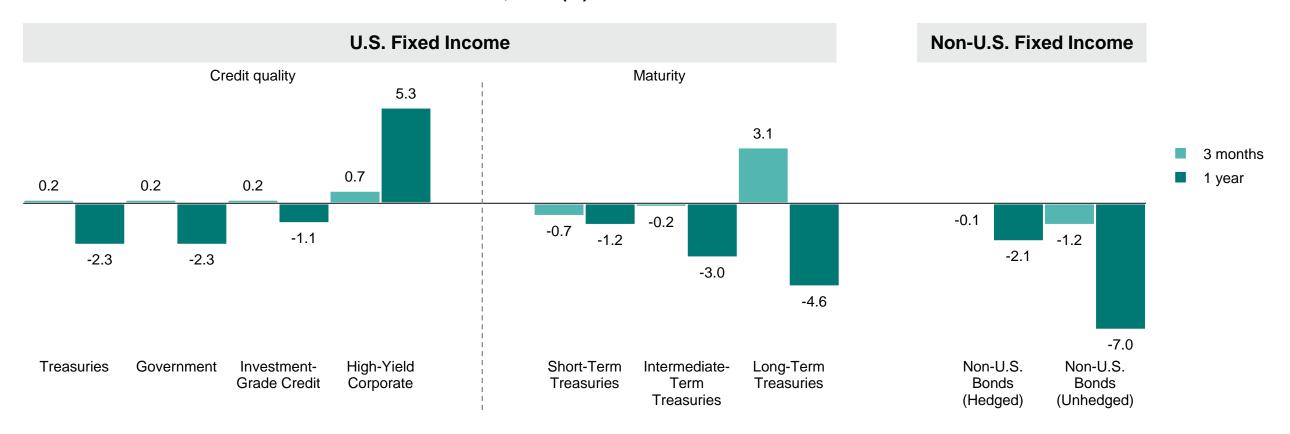
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Sources: FactSet and Vanguard.

U.S. markets measured by CRSP US Total Market Index.

Shift in Fed sentiment continues to negatively impact fixed income returns

Global fixed income market returns as of December 31, 2021 (%)



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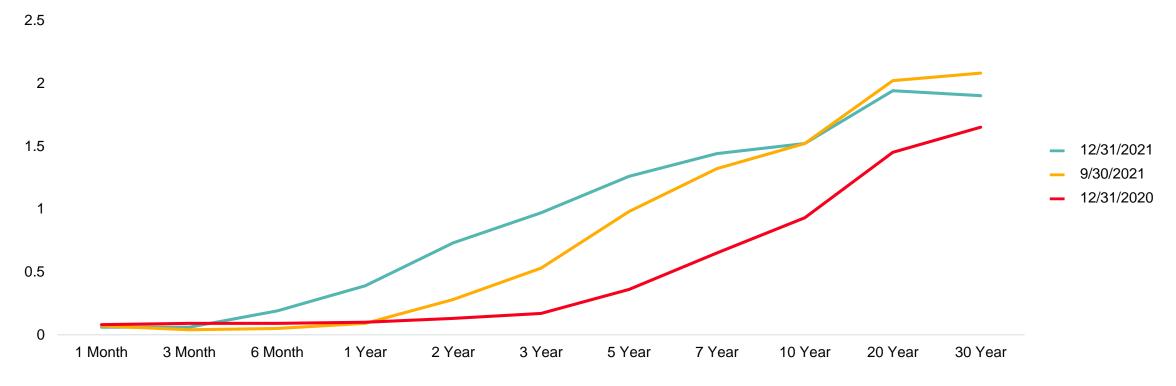
Sources: Bloomberg Barclays.

Treasuries-Government-Investment Grade Corporates-High Yield (Bloomberg Barclays US 1-5/5-10/Long Year

Non-US Bonds hedged (Bloomberg Barclays Global Aggregate ex-USD Float Adjusted RIC Capped Index hedged), Non-US Bonds unhedged (Bloomberg Barclays Global Aggregate Index ex-USD).

U.S. Treasury yield curve rises for maturities two years and greater

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 (%)	0.06	0.06	0.19	0.39	0.73	0.97	1.26	1.44	1.52	1.94	1.9
— 3 month change	-1	2	14	30	45	44	28	12	0	-8	-18
— 12 month change	-2	-3	10	29	60	80	90	79	59	49	25



Source: U.S. Treasury.

Portfolio Performance





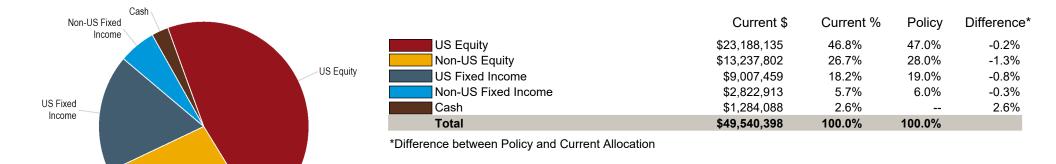
Total Portfolio Performance & Asset Allocation

Performance Summary ending December 31, 2021

	Market Value	1 Mo	3 Мо	1 Yr	3 Yrs	5 Yrs	10 Yrs	Inception	Inception
	(\$)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	Date
EPISCOPAL FOUNDATION OF DALLAS	49,540,398	2.73	4.12	13.13	16.97	12.21		10.09	Jun-15
EPISCOPAL FOUNDATION OF DALLAS (Net)		2.73	4.09	13.01	16.85	12.09		9.98	
Composite Benchmark		2.90	4.80	14.00	16.83	11.88		9.95	Jun-15

⁻ Composite Benchmark = 47% Spliced Total Stock Market Index / 28% Spliced Total International Stock Index / 19% Spliced Bloomberg Barclays US Aggregate Float Adjusted Index / 6% Bloomberg Barclays Global Aggregate ex-USD Float Adjusted RIC Capped Hedged

Current Allocation as of December 31, 2021



Gross of Advisory Fee returns reflect the deduction of fund expense ratios and any other security-level expenses.

Net of Fee returns reflect the deduction of fund expense ratios, any purchase or redemption fees, and VIAS advisory fee applied to the client portfolio.

Returns greater than one year represent annualized returns. Returns less than one year represent cumulative returns.



Non-US Equity

Performance Summary (Gross of Advisory Fees) ending December 31, 2021

	Market Value (\$)	% of Portfolio	1 Mo (%)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
EPISCOPAL FOUNDATION OF DALLAS	49,540,398	100.00	2.73	4.12	13.13	16.97	12.21		10.09	Jun-15
EPISCOPAL FOUNDATION OF DALLAS (Net)			2.73	4.09	13.01	16.85	12.09		9.98	
Composite Benchmark			2.90	4.80	14.00	16.83	11.88		9.95	Jun-15
Total Equity	36,425,938	73.53	3.79	5.62	18.02	21.31	15.35		12.25	Jun-15
Equity Domestic	23,188,135	46.81	4.28	8.49	25.71	24.02	17.04		14.58	Jun-15
Spliced Total Stock Market Index			3.82	9.16	25.72	25.79	18.00	16.31	15.42	Jun-15
Equity International	13,237,802	26.72	2.93	0.86	6.16	16.88	12.54		8.56	Jun-15
Spliced Total International Stock Index			4.27	1.76	8.83	13.82	9.92	7.73	6.80	Jun-15
Total Fixed Income	11,830,372	23.88	-0.26	-0.26	-1.49	4.66	3.57		3.42	Jun-15
Fixed Income Domestic	9,007,459	18.18	-0.11	-0.28	-1.26	5.10	3.74		3.44	Jun-15
Spliced Bloomberg Barclays US Aggregate Float Adjusted Index			-0.27	0.05	-1.58	4.91	3.64	2.94	3.31	Jun-15
Fixed Income International	2,822,913	5.70	-0.73	-0.21	-2.22	3.31	3.04		3.35	Jun-15
Bloomberg Barclays Global Aggregate ex-USD Float Adjusted RIC Capped Hedged			-0.70	-0.12	-2.10	3.48	3.24		3.57	Jun-15
Short Term Reserves	1,284,088	2.59	0.00		-	-			0.00	Nov-21
FTSE T-Bill 3 Months TR			0.00	0.01	0.05	0.96	1.11	0.60	0.00	Nov-21

Gross of Advisory Fee returns reflect the deduction of fund expense ratios and any other security-level expenses.

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Returns greater than one year represent annualized returns. Returns less than one year represent cumulative returns.



Performance Summary (Gross of Advisory Fees) ending December 31, 2021

	Market Value (\$)	% of Portfolio	1 Mo (%)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
EPISCOPAL FOUNDATION OF DALLAS	49,540,398	100.00	2.73	4.12	13.13	16.97	12.21		10.09	Jun-15
Composite Benchmark			2.90	4.80	14.00	16.83	11.88		9.95	Jun-15
Total Equity	36,425,938	73.53	3.79	5.62	18.02	21.31	15.35		12.25	Jun-15
Equity Domestic	23,188,135	46.81	4.28	8.49	25.71	24.02	17.04		14.58	Jun-15
Spliced Total Stock Market Index			3.82	9.16	25.72	25.79	18.00	16.31	15.42	Jun-15
Vanguard® Total Stock Market Index Fund Institutional Shares	12,809,920	25.86	3.82	9.16	25.73	25.78	17.99	16.30	15.42	Jun-15
Spliced Total Stock Market Index			3.82	9.16	25.72	25.79	18.00	16.31	15.42	Jun-15
Multi-Cap Core Funds Average			4.23	8.34	23.89	22.57	15.09	13.72	12.39	Jun-15
Vanguard® Windsor™ Fund Admiral™ Shares	5,220,908	10.54	6.51	8.10	28.15	21.60	13.43	14.20	11.19	Jun-15
Russell 1000 Value			6.31	7.77	25.16	17.64	11.16	12.97	10.62	Jun-15
Multi-Cap Value Funds Average			6.24	7.50	26.20	17.11	10.43	11.78	9.48	Jun-15
Vanguard® PRIMECAP Fund Admiral™ Shares	5,157,308	10.41	3.24	7.22	21.90	22.29	18.37	17.61	15.99	Jun-15
Russell 1000 Growth			2.11	11.64	27.60	34.07	25.32	19.79	20.52	Jun-15
Multi-Cap Growth Funds Average			0.22	4.17	15.43	28.64	21.31	16.70	16.12	Jun-15
Equity International	13,237,802	26.72	2.93	0.86	6.16	16.88	12.54		8.56	Jun-15
Spliced Total International Stock Index			4.27	1.76	8.83	13.82	9.92	7.73	6.80	Jun-15
Vanguard® Total International Stock Index Fund Inst Shares	6,713,695	13.55	4.06	2.12	8.68	13.71	9.93	7.71	6.73	Jun-15
Spliced Total International Stock Index			4.27	1.76	8.83	13.82	9.92	7.73	6.80	Jun-15
International Funds Average			4.14	2.25	9.54	14.75	10.07	7.90	6.59	Jun-15
Vanguard® International Value Fund	3,344,871	6.75	4.90	1.95	7.97	12.31	9.16	7.57	5.73	Jun-15
Spliced International Index			4.13	1.82	7.82	13.18	9.61	7.28	6.43	Jun-15
International Funds Average			4.14	2.25	9.54	14.75	10.07	7.90	6.59	Jun-15
Vanguard® International Growth Fund Admiral™ Shares	3,179,236	6.42	-1.29	-2.76	-0.74	27.75	21.14	13.96	14.97	Jun-15
Spliced International Index			4.13	1.82	7.82	13.18	9.61	7.28	6.43	Jun-15
International Funds Average			4.14	2.25	9.54	14.75	10.07	7.90	6.59	Jun-15
Total Fixed Income	11,830,372	23.88	-0.26	-0.26	-1.49	4.66	3.57		3.42	Jun-15
Fixed Income Domestic	9,007,459	18.18	-0.11	-0.28	-1.26	5.10	3.74		3.44	Jun-15
Spliced Bloomberg Barclays US Aggregate Float Adjusted Index			-0.27	0.05	-1.58	4.91	3.64	2.94	3.31	Jun-15

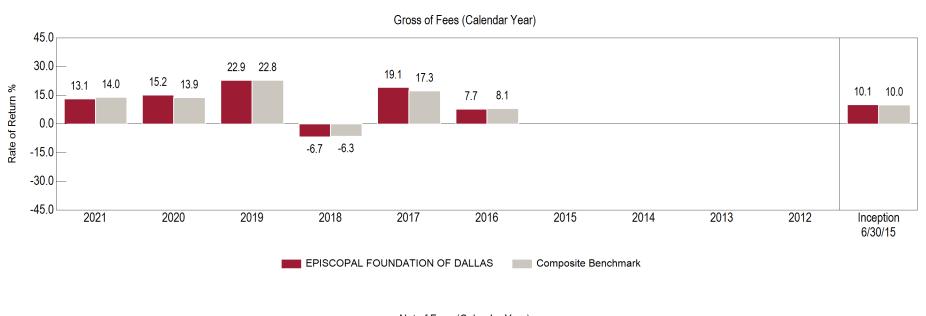


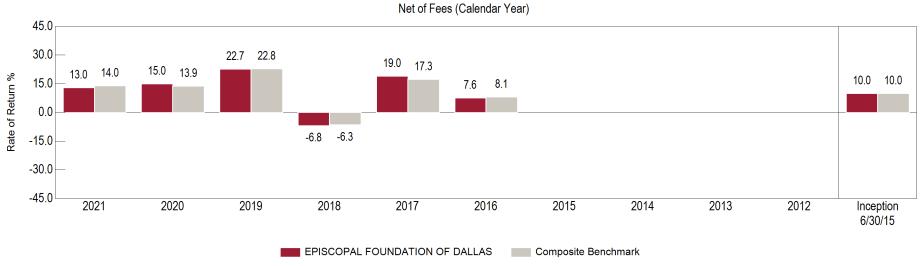
Performance Summary (Gross of Advisory Fees) ending December 31, 2021

	Market Value (\$)	% of Portfolio	1 Mo (%)	3 Mo (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Vanguard® Total Bond Market Index Institutional Shares	4,728,813	9.55	-0.40	-0.08	-1.65	4.83	3.59	2.87	-0.08	Sep-21
Spliced Bloomberg Barclays US Aggregate Float Adjusted Index			-0.27	0.05	-1.58	4.91	3.64	2.94	0.05	Sep-21
Spliced Intermediate-Term Investment-Grade Debt Funds Average			-0.19	-0.18	-1.29	5.11	3.61	3.10	-0.18	Sep-21
Vanguard® Inter-Term Investment-Grade Fund Adm [™] Shares	2,857,317	5.77	0.30	-0.40	-1.14	6.44	4.59	4.21	4.28	Jun-15
Bloomberg US Credit 5-10 Yr TR			0.21	-0.38	-1.57	7.07	4.99	4.69	4.66	Jun-15
Spliced Core Bond Funds Average			-0.19	-0.18	-1.29	5.11	3.61	3.10	3.23	Jun-15
Vanguard® Short-Term Investment-Grade Fund Adm™ Shares	1,421,329	2.87	0.04	-0.69	-0.33	3.55	2.74	2.52	2.57	Jun-15
Bloomberg US Credit 1-5 Yr TR			0.02	-0.68	-0.55	3.69	2.90	2.68	2.63	Jun-15
1-5 Year Investment-Grade Debt Funds Average			0.00	-0.51	-0.14	2.85	2.23	1.87	1.97	Jun-15
Fixed Income International	2,822,913	5.70	-0.73	-0.21	-2.22	3.31	3.04		3.35	Jun-15
Bloomberg Barclays Global Aggregate ex-USD Float Adjusted RIC Capped Hedged			-0.70	-0.12	-2.10	3.48	3.24		3.57	Jun-15
Vanguard® Total International Bond Index Fund Adm™ Shares	2,822,913	5.70	-0.73	-0.21	-2.22	3.31	3.04		3.35	Jun-15
Bloomberg Barclays Global Aggregate ex-USD Float Adjusted RIC Capped Hedged			-0.70	-0.12	-2.10	3.48	3.24		3.57	Jun-15
International Income Funds Average			0.12	-1.03	-5.23	2.23	2.56	1.46	2.11	Jun-15
Short Term Reserves	1,284,088	2.59	0.00						0.00	Nov-21
FTSE T-Bill 3 Months TR			0.00	0.01	0.05	0.96	1.11	0.60	0.00	Nov-21
Vanguard® Federal Money Market	1,284,088	2.59	0.00	0.00	0.01	0.86	1.04	0.55	0.00	Nov-21
US Government Money Market Funds Average			0.00	0.01	0.02	0.62	0.69	0.34	0.00	Nov-21



Total Portfolio Performance





Gross of Advisory Fee returns reflect the deduction of fund expense ratios and any other security-level expenses.

Net of Fee returns reflect the deduction of fund expense ratios, any purchase or redemption fees, and VIAS advisory fee applied to the client portfolio.

Returns greater than one year represent annualized returns. Returns less than one year represent cumulative returns.



Cash Flow Summary

	Last Month	Last Three Months	Year-To-Date	One Year
Beginning Market Value	\$46,962,187	\$42,783,888	\$43,876,936	\$43,876,936
Net Cash Flow	\$1,279,131	\$4,887,374	\$54,654	\$54,654
Capital Appreciation	\$890,628	\$1,427,590	\$4,783,044	\$4,783,044
Income	\$408,452	\$441,546	\$825,765	\$825,765
Ending Market Value	\$49,540,398	\$49,540,398	\$49,540,398	\$49,540,398

Month Ending December 31, 2021

	Beginning Market Value	Net Cash Flow	Capital Appreciation	Income	Ending Market Value
Vanguard® Federal Money Market	\$0	\$1,284,084	\$0	\$4	\$1,284,088
Vanguard® Inter-Term Investment-Grade Fund Adm ™ Shares	\$2,848,804	\$0	\$2,838	\$5,675	\$2,857,317
Vanguard® International Growth Fund Admiral™ Shares	\$3,216,790	\$4,335	-\$71,865	\$29,977	\$3,179,236
Vanguard® International Value Fund	\$3,188,692	\$0	\$72,494	\$83,685	\$3,344,871
Vanguard® PRIMECAP Fund Admiral™ Shares	\$4,988,698	\$6,940	\$124,801	\$36,867	\$5,157,308
Vanguard® Short-Term Investment-Grade Fund Adm™ Shares	\$1,420,766	\$0	-\$1,387	\$1,951	\$1,421,329
Vanguard® Total Bond Market Index Institutional Shares	\$4,744,929	\$2,684	-\$26,483	\$7,683	\$4,728,813
Vanguard® Total International Bond Index Fund Adm™ Shares	\$2,842,704	\$842	-\$82,883	\$62,249	\$2,822,913
Vanguard® Total International Stock Index Fund Inst Shares	\$6,451,416	\$0	\$164,744	\$97,535	\$6,713,695
Vanguard® Total Stock Market Index Fund Institutional Shares	\$12,357,621	-\$19,754	\$426,585	\$45,469	\$12,809,920
Vanguard® Windsor™ Fund Admiral™ Shares	\$4,901,767	\$0	\$281,784	\$37,357	\$5,220,908
Total	\$46,962,187	\$1,279,131	\$890,628	\$408,452	\$49,540,398



Episcopal Foundation of Dallas - Aggregated Performance Summary as-of December 31, 2021								
	Market Value*	Portfolio Allocation	Three-Month	Year-to-Date	One-Year	Three-Year	Five-Year	Since Inception
Vanguard	\$49,540,398	100.00%	4.09%	13.01%	13.01%	16.85%	12.09%	9.98%
Vanguard Composite Benchmark			4.80%	14.00%	14.00%	16.83%	11.88%	9.95%
Aggregate Portfolio (net of EFD fee)*	\$49,540,398	100.00%	4.04%	12.48%	12.48%	16.26%	11.54%	9.12%
Aggregate Composite Benchmark*			4.80%	14.00%	14.00%	16.83%	11.88%	9.93%

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 December 31, 2021. 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.

Headwinds for active equity mutual fund managers

Percentage of actively managed funds underperforming their style benchmarks*

Ten-year: December 31, 2021

71%

Emerging

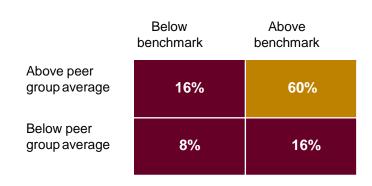


75%

Developed

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

Ten-year: December 31, 2021





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 December 31, 2021. 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 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 Value Index through April 16, 2013, CRSP US Mid Cap Value Index through April 16, 2013, CRSP US Small Cap Index thereafter; small blend: MSCI US Small Cap 1750 Index through April 16, 2013, CRSP US Small Cap Index thereafter; small growth: MSCI US Small Cap Value Index through April 16, 2013, CRSP US Small Cap Value Index thereafter; small growth: MSCI US Small Cap Value Index through April 16, 2013, CRSP US Small Cap Value Index thereafter; by the following indexes—Emerging: MSCI Emerging Markets Index; Developed: MSCI World Index; Global: MSCI All Country World Index.

62%

Global

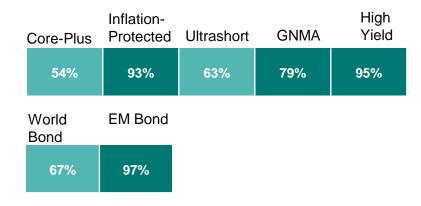
^{**} Performance measured relative to each Vanguard fund's respective primary benchmark and current Lipper category average.

Headwinds for active fixed income mutual fund managers

Percentage of actively managed fixed income funds underperforming their style benchmarks*

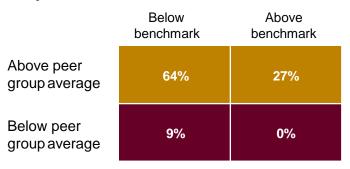
Ten-year: December 31, 2021





Vanguard active fixed income funds versus their primary and peer group benchmarks **

Ten-year: December 31, 2021



Key

≥ 75% ≥ 50% < 50% ≥25% < 25%

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 December 31, 2021. Sources: Vanguard calculations, using data from ViFi and Morningstar.

Expiration date: 7/12/2023

^{*} Style benchmarks are represented by the following indexes—short government: Bloomberg U.S. 1-5 Year Government Bond Index; intermediate government: Bloomberg U.S. Government Bond Index; long government: Bloomberg U.S. 1-5 Year Corporate Bond Index; intermediate Corporate: Bloomberg U.S. Intermediate Corporate: Bloomberg U.S. Long Government/Credit Index; core-plus: Bloomberg U.S. Universal Index; inflation-protected: Bloomberg U.S. Treasury Inflation Protected Securities Index; ultrashort: Bloomberg Government/Corporate 1 Year Duration Index; GNMA: Bloomberg U.S. GNMA Bond Index; high yield: Bloomberg U.S. Corporate High Yield Bond Index; world bond: Bloomberg Global Aggregate Bond Index Hedged USD; emerging markets bond: JP Morgan Emerging Markets Bond Index Global Diversified.

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

Fees and Expenses

VIAS management fee structure

VIAS charges a management fee based on assets under management

Annual fee schedule

Asset level	Management fee
First \$10 million	0.15%
Next \$10 million	0.12%
Next \$30 million	0.08%

Total estimated expenses

Assets under management	Fee %	\$49.5 million
Management fee	0.102%	\$50,632
Fund expenses*	0.136%	\$67,375
Commingled funds/partnership expense	0.00%	\$0
Incentive fees	0.00%	\$0
Custodial fees	0.00%	\$0
Additional travel fees	0.00%	\$0
Total all-in fee	0.238%	\$118,007

^{*} These costs are estimated. Actual weighted annul expense ratio is determined by the actual funds chosen for the portfolio.
Importantly, there are no sales commissions or 12b-1 fees for Vanguard funds. The cost of our investment management services (i.e., custodial fees, manager costs, trading costs) are reflected in the expense ratios of our funds and are deducted from each fund's earnings before they are distributed to shareholders. Vanguard is committed to maintaining operating expenses at the lowest possible level, without sacrificing premier quality service.

Investment Expense Analysis as of December 31, 2021

Name	Market Value	% of Portfolio	Expense Ratio
Total Equity	\$36,425,938	73.5%	
Equity Domestic	\$23,188,135	46.8%	
Vanguard® Total Stock Market Index Fund Institutional Shares	\$12,809,920	25.9%	0.030%
Vanguard® Windsor™ Fund Admiral™ Shares	\$5,220,908	10.5%	0.190%
Vanguard® PRIMECAP Fund Admiral™ Shares	\$5,157,308	10.4%	0.310%
Equity International	\$13,237,802	26.7%	
Vanguard® International Value Fund	\$3,344,871	6.8%	0.350%
Vanguard® International Growth Fund Admiral™ Shares	\$3,179,236	6.4%	0.320%
Vanguard® Total International Stock Index Fund Inst Shares	\$6,713,695	13.6%	0.080%
Total Fixed Income	\$11,830,372	23.9%	
Fixed Income Domestic	\$9,007,459	18.2%	
Vanguard® Short-Term Investment-Grade Fund Adm™ Shares	\$1,421,329	2.9%	0.100%
Vanguard® Inter-Term Investment-Grade Fund Adm ™ Shares	\$2,857,317	5.8%	0.100%
Vanguard® Total Bond Market Index Institutional Shares	\$4,728,813	9.5%	0.035%
Fixed Income International	\$2,822,913	5.7%	
Vanguard® Total International Bond Index Fund Adm™ Shares	\$2,822,913	5.7%	0.110%
Short Term Reserves	\$1,284,088	2.6%	
Vanguard® Federal Money Market	\$1,284,088	2.6%	0.110%
Total	\$49,540,398	100.0%	0.136%



Economic and Market Outlook

Key takeaways:

- Vanguard expects the U.S. economic recovery to continue in 2022, though at a naturally slower pace.
- The Fed's tapering program sets the stage for what Vanguard believes will be a late 2022 interest rate hike.
- We foresee inflation persisting above 2% toward the end of 2022, but broad wage gains taking hold

Asset-class return outlooks

The greatest change in our outlooks from the June 30 running of the Vanguard Capital Markets Model® (VCMM) was in emerging markets equities. Large price declines in the intervening months lowered valuations, which are reflected in a 10-year forecast range that is 60 basis points higher in the September 30 running. In fixed income, yields increased marginally in the third quarter, allowing for a marginal rise in forecasts for many fixed income sub-asset classes.

Our 10-year, annualized, nominal return projections, as of September 30, 2021, are shown below. Please note that the figures are based on a 1.0-point range around the rounded 50th percentile of the distribution of return outcomes for equities and a 0.5-point range around the rounded 50th percentile for fixed income.

Equities	Return projection	Median volatility
U.S. equities	2.3%-4.3%	16.7%
U.S. value	3.1%-5.1%	19.2%
U.S. growth	-0.9%-1.1%	17.5%
U.S. large-cap	2.2%-4.2%	16.3%
U.S. small-cap	2.2%-4.2%	22.5%
U.S. real estate investment trusts	1.9%-3.9%	19.1%
Global equities ex-U.S. (unhedged)	5.2%-7.2%	18.4%
Global ex-U.S. developed markets equities (unhedged)	5.3%-7.3%	16.4%
Emerging markets equities (unhedged)	4.2%-6.2%	26.8%

'		
Fixed income	Return projection	Median volatility
U.S. aggregate bonds	1.4%-2.4%	4.6%
U.S. Treasury bonds	1.2%-2.2%	4.7%
U.S. credit bonds	1.6%-2.6%	4.7%
U.S. high-yield corporate bonds	2.2%-3.2%	10.4%
U.S. Treasury Inflation- Protected Securities	1.0%-2.0%	7.0%
U.S. cash	1.2%-2.2%	1.2%
Global bonds ex-U.S. (hedged)	1.3%-2.3%	3.8%
Emerging markets sovereign bonds	2.3%-3.3%	10.1%
U.S. Inflation	1.5%-2.5%	2.3%

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 September 30, 2021. Results from the model may vary with each use and over time. For more information, see Important information page.

Source: Vanguard Investment Strategy Group.



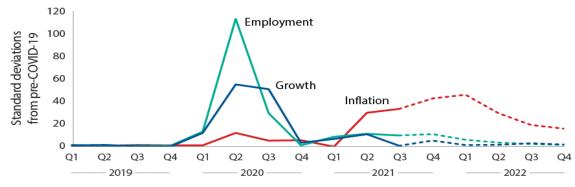
The U.S. recovery continues but pace slackens

United States. Growth appears to have stabilized in the fourth quarter as COVID-19 cases have come down from their third-quarter peaks, and we continue to see fourth-quarter growth around 5.5%.

We expect economic recovery to continue in 2022, though at a naturally slower pace as the easiest gains will already have been captured. We foresee growth of around 4% for 2022. Conditions for continuing U.S. growth look favorable, even relative to pre-pandemic conditions.

Unlike the abrupt shutdown of the economy early in the pandemic, the reopening has been a more drawn-out process and, as such, the near term will continue to be excessively volatile, adding a high degree of uncertainty to the longer-run implications (see figure).

The key drivers of U.S. inflation are sending mixed signals



Notes: The chart depicts the absolute difference in standard deviation of observed readings from the 2019 trend. Dotted lines represent Vanguard forecasted values. Sources: Vanguard forecast and calculations, based on Refinitiv data. As of November 12, 2021.

Euro area. Vanguard expects the pace of growth to moderate, a natural slowing at this stage of economic recovery from the pandemic.

- COVID-19 continues to be a concern—new cases topped 50,000 in Germany for the first time on November 11—and high energy prices weigh on household finances.
- A rapid unwinding of supply bottlenecks that would boost manufacturing represents a risk to the upside, one especially pertinent to the euro area.
- Vanguard continues to see full-year 2021 euro area growth around 5% and 2022 growth around 4%.

China. We foresee growth in the fourth quarter of around 1% compared with the third quarter, below trend, and of around 5% for all of 2022, below market expectations for growth around 5.5%.

- We expect consumption recovery to remain muted, the property downturn to deepen, and infrastructure investment to accelerate only after the National People's Congress in March.
- We expect the government to target growth around 5.5% for 2022; as such, we anticipate that it will need to tolerate an undershoot of its target or to introduce further stimulus measures.



Emerging markets. Positive health developments lead Vanguard to hold an above-consensus view on 2022 growth in emerging markets of around 5.5% in 2022.

• We anticipate that Latin America and emerging Asia, regions with high vaccine acceptance, will have vaccinated almost all eligible individuals who want to be vaccinated by the end of 2021.

Region-by-region • outlook •

(continue)

- We expect the percentage of the vaccinated population to lag significantly behind in emerging Europe, where vaccine acceptance is low.
- · We foresee vaccination rates in Africa, which have consistently lagged those of other regions, surpassing those in emerging Europe in the first half of 2022.



The Fed begins its tapering program

The gradual removal of pandemic-era monetary policy accommodation in the United States has begun with the Federal Reserve's announcement on November 3 that it would start to scale back its bond-buying program.

- The Fed said it would reduce its purchases of Treasury securities by \$10 billion per month and of agency mortgage-backed securities by \$5 billion per month so that November purchases total \$70 billion and \$35 billion, respectively, with a similar monthly reduction in purchases thereafter.
- At such a pace, the Fed's asset-purchase program will have wound down by the middle of 2022. The Fed said it was prepared to adjust the pace of purchases—up or down—as the economic outlook warranted.
- The move sets the stage for what Vanguard believes will be a late 2022 interest rate hike. If inflation evolves as Vanguard forecasts, it likely has already met its lift-off test and the Fed will turn its attention to the labor market to gauge the appropriate time for a rate hike.

What's next for U.S. government funding?

Expiration date: 7/9/2023

The threat of a U.S. government shutdown, a U.S. debt default, or both could arise in early December.

- To avoid a shutdown in December, an omnibus appropriations bill funding the discretionary portion of the budget for the remainder of the fiscal year or another continuing resolution would need to be signed.
- Meanwhile, Congress passed and the president on October 14 signed legislation to raise the U.S. debt ceiling by \$480 billion, an amount expected to allow the government to pay its bills until at least December 3.
- The consequences of a U.S. debt default would be enormous—although Vanguard believes a U.S. debt default is unlikely.



Wage gains will be key

Inflation likely to stay above 2%

Vanguard's medium-term outlook for inflation in the United States hasn't materially changed despite a stronger-than-expected reading in October, although near-term inflation is likely to be pressured higher.

- Core Consumer Price Index (CPI), which excludes volatile food and energy prices, reached 0.6% in October and 4.6% year-on-year. Strong readings over recent months have increased the possibility that supply constraints, labor shortages, and the effects of the economy's reopening will take further time to normalize.
- We foresee inflation persisting above 2% toward the end of 2022. A risk that inflation persists at or above 3% by year-end 2022 would depend on broad wage gains taking hold.
- Vanguard sees the likelihood of strong wage gains in certain pandemic-affected sectors such as leisure and hospitality, but we see the risk of such strong gains across all industries as low.



Labor-force participation lags

Unemployment continues falling

With inflation likely to have already met the Federal Reserve's criterion for an interest rate hike, we expect labor market developments to command attention in the coming months.

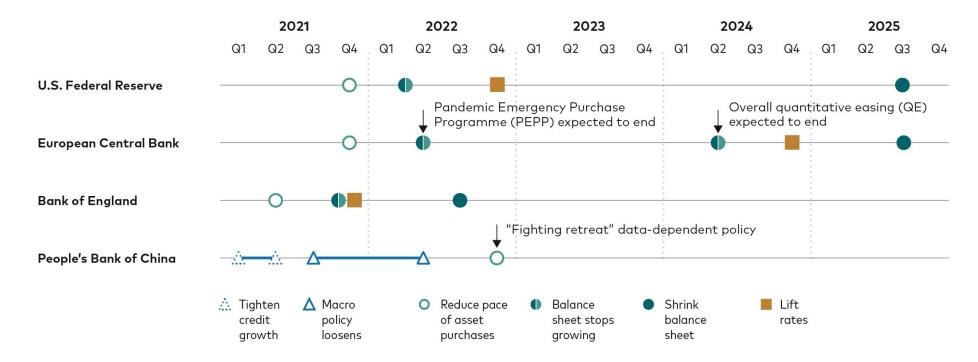
- The unemployment rate fell from 4.8% to 4.6% in October, but we don't expect the Fed to rely solely on that indicator in determining when to raise interest rates.
- Vanguard expects the unemployment rate to continue to fall, to just above 3% by the end of 2022, with labor-force participation peaking perhaps a full percentage point below its pre-pandemic level.

Expiration date: 7/9/2023

Vanguard economic and market outlook for 2022: Striking a better balance

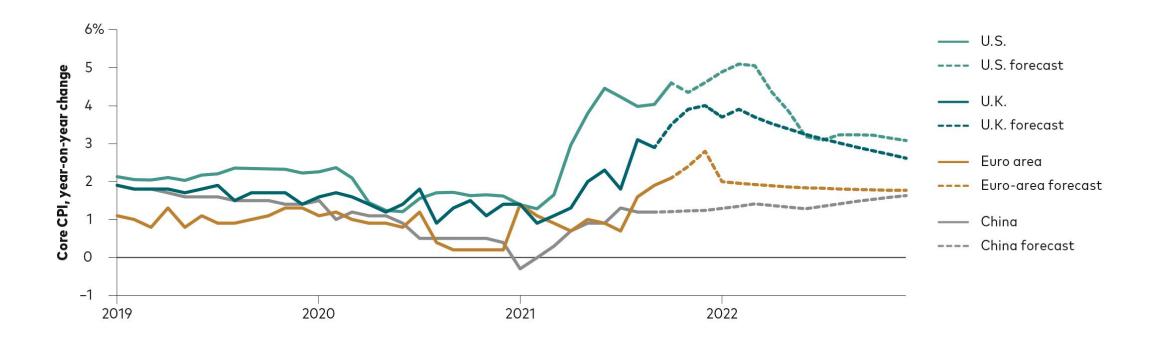
The long and winding road to normalcy

The removal of monetary accommodation will be gradual



Notes: Vanguard assessments are as of November 1, 2021, and are of actions taken or likely to be taken by the U.S. Federal Reserve, the Bank of England, the European Central Bank, and the People's Bank of China. Under a "fighting" retreat" mode, China's government would accept that growth will need to slow down, but at a gradual pace. If the deceleration is gradual, the government will not intervene and instead will focus on reforms and financial stability. But if the pace is rapid and creates market panic, the government will fight against the trend to stabilize the growth. This will allow the government to engineer a smooth deleveraging process and soft landing. Source: Vanguard, as of November 1, 2021.

How long will high inflation last?



Note: Data and Vanguard forecasts are for year-on-year percentage changes in the core Consumer Price Index, which excludes volatile food and energy prices. Actual inflation is through September 2021 for the U.S., U.K., and China and through October 2021 for the euro area. Vanguard forecasts are presented thereafter.

Sources: Vanguard calculations, using data from Bloomberg and Refinitiv.

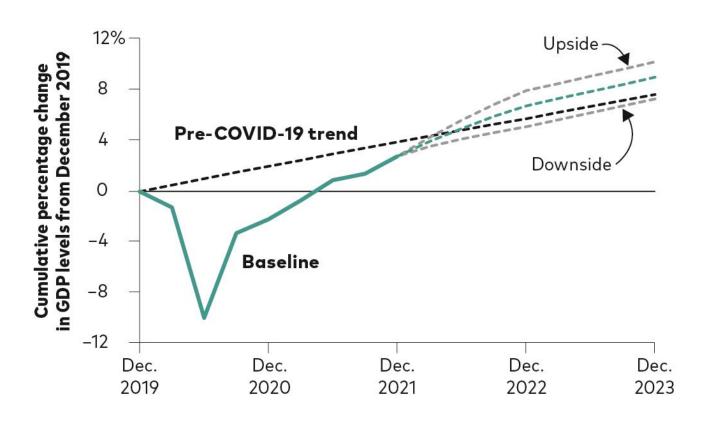
Global scenarios

	Baseline	Downside risk	Upside surprise
Immunity gap	Continued progress on herd immunity in major economies by end of 2021.	Stalled progress on herd immunity by end of 2021.	Continued progress on herd immunity in major economies by end of 2021, emerging markets through 2022.
Consumer/ business reluctance gap	Social and business activity normalize by early 2022.	Social and business activity hampered through 2022.	Social and business activity surpass pre-pandemic levels by early 2022.
COVID-19	New mutations and vaccine distribution issues subside, closing the immunity gap by early 2022.	New mutations and vaccine distribution issues persist, prolonging immunity gap well into 2022.	New mutations subside and distribution efficiencies emerge.
Labor market	Unemployment rate falling through year-end 2022.	High and sustained unemployment results in permanent labor market scarring.	Unemployment rate falling just above NAIRU rates by end of 2022.
Inflation	Inflation moves back toward target from above.	Inflation overshoots and maintains upward trajectory through 2022.	Inflation falls below target toward year-end 2022.
Policy	Central bank policies meet mandates despite unease. Additional fiscal support not necessary.	Central banks are behind the curve, and additional fiscal support would prove inflationary.	Central bank policies meet mandates as supply expands to meet rising demand. Additional fiscal support not necessary.
Growth	Global growth averages 4.6% for 2022.	Global growth averages close to 3.4% for 2022.	Global growth averages close to 5.5% for 2022.
Demand versus supply	Demand > Supply Demand and supply both increase	Demand > Supply Demand and supply both decrease	Demand = Supply Demand and supply both increase
Probability	60%	30%	10%

Notes: Historical global GDP data is taken from Bloomberg Economics estimates. Global growth estimates are derived from Vanguard forecasts, where growth numbers for the regions we forecast (the U.S., U.K., euro area, China, Australia, Japan, and Canada) are combined with IMF forecasts for Sub-Saharan Africa, Latin America, and the Middle East and Central Asia. Pre-virus trend is the average quarterly growth rate from 2013 to 2019. NAIRU refers to the nonaccelerating inflation rate of unemployment.

Sources: Vanguard model estimates, based on data from Reuters, Bloomberg, Bloomberg Economics, Macrobond, and the International Monetary Fund.

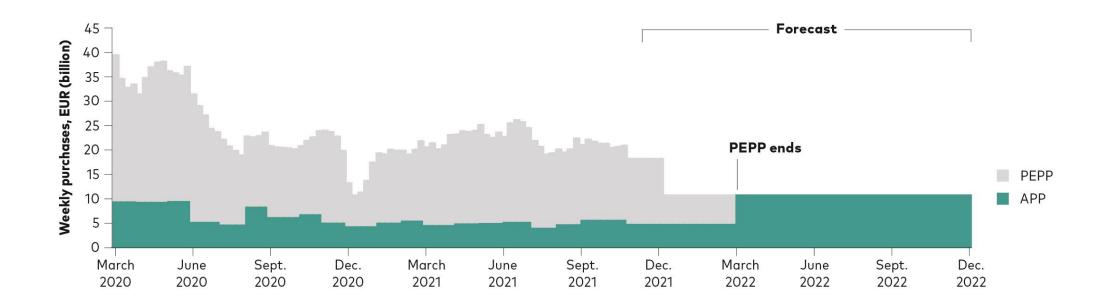
U.S. growth: Slowing but still robust



Notes: The y-axis represents the level impact from the baseline, which is December 2019. The pre-COVID-19 trend assumes a 1.9% growth rate. The baseline scenario assumes gradual normalization in supply-side constraints with unemployment rates reaching close to 3.5% by year-end 2022. The downside scenario is characterized by a lengthier persistence of current supply-side constraints, which would continue to act as a significant drag on growth. In this scenario, inflation will stay elevated as we view supply constraints dominating the demand impact on inflation currently. The upside scenario is characterized by a speedy normalization of supply-side constraints, which will allow demand to be more fully realized and allow earlier easing of inflation pressures.

Sources: Vanguard and Refinitiv, as of November 30, 2021.

ECB to continue quantitative easing even after PEPP has come to an end

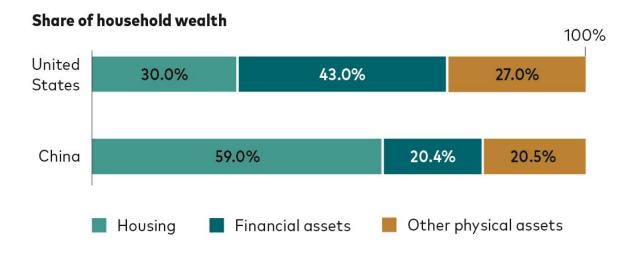


Notes: The Asset Purchase Programme (APP) is the pre-pandemic QE program run by the European Central Bank (ECB). The Pandemic Emergency Purchase Programme (PEPP) is the emergency QE program introduced in 2020. Sources: Bloomberg and Vanguard, as of November 2, 2021.

Expiration date: 7/12/2023

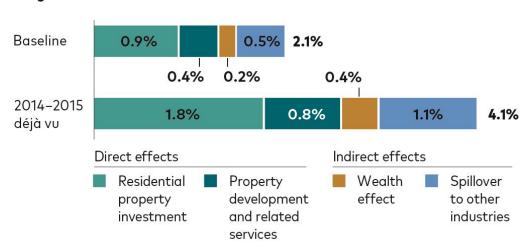
China property market downturn to deepen in 2022

Share of household wealth



Drag on China's GDP



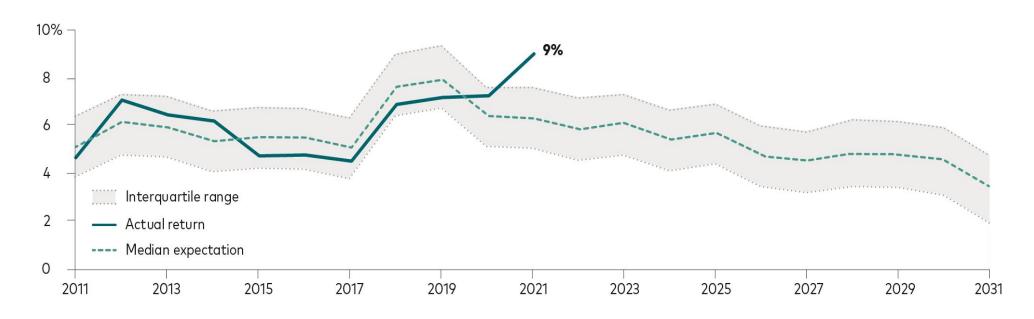


Notes: We consider both real and financial impacts of the property crackdown on GDP. In the baseline scenario, we assume growth in property investment declines by 10 percentage points from high single digits in 2021 to a modest contraction in 2022 and growth in property prices moderates by around 5 percentage points. We use China's input-output table to consider indirect effects such as the spillover impact on upstream industries such as materials and metal products, as well as impacts via the wealth effect channel. Under the downside scenario, where we see a replay of the 2014–2015 property slowdown, we assume growth in property investment declines by close to 20 percentage points and growth property prices drop by 10 percentage points.

Sources: Vanguard, using data from Refinitiv, the People's Bank of China, and the U.S. Federal Reserve, as of September 30, 2021.

Returns on a 60/40 balanced portfolio are expected to be roughly half of what investors realized over the last decade

10-year annualized returns



Notes: The chart shows the actual 10-year annualized return of a 60/40 stock/bond portfolio compared with the VCMM forecast for the same portfolio made 10 years earlier. For example, the 2011 data point at the beginning of the chart shows the actual return for the 10-year period 2001–2011 (solid line) compared with the 10-year return forecast made in 2001 (dotted line). After 2021 the dotted line is extended to show how our forecasts made between 2012 and 2021 (ending between 2022 and 2031) are evolving. The interquartile range represents the area between the 25th and 75th percentile of the return distribution. The portfolio is 36% U.S. stocks, 24% international stocks, 28% U.S. bonds, and 12% international bonds. See "Indexes for VCMM simulations" and "Indexes used in our historical calculations" for further details.

Source: Vanguard calculations, as of September 30, 2021.

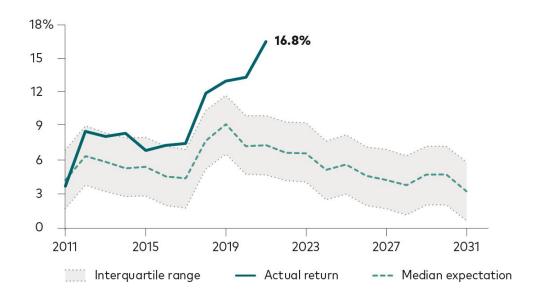
IMPORTANT: The projections and other information generated by the Vanguard Capital Markets Model regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results.

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.

Valuations are the key driver of U.S. outperformance over the last decade and underperformance over the next

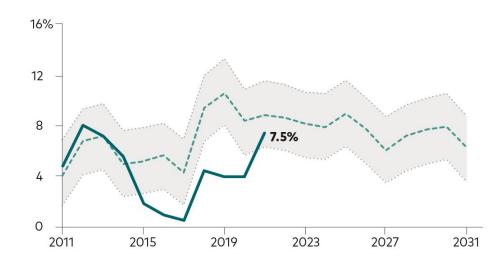
 U.S. equities have recently outperformed our expectations

10-year annualized returns



b. International equities have underperformed but are closer to our estimates

10-year annualized returns



Notes: Figure a shows the actual 10-year annualized return for U.S. equities compared with the VCMM forecast made 10 years earlier. Figure b shows the actual 10-year annualized return for international equities compared with the VCMM forecast made 10 years earlier. For example, the 2011 data point at the beginning of each chart shows the actual return for the 10-year period 2001–2011 (solid line) compared with the 10-year return forecast made in 2001 (dotted line). After 2021 the dotted line is extended to show how our forecasts made between 2012 and 2021 (ending between 2022 and 2031) are evolving. The interquartile range represents the area between the 25th and 75th percentile of the return distribution. See "Indexes for VCMM simulations" and "Indexes used in our historical calculations" for further details.

Source: Vanguard calculations, as of September 30, 2021.

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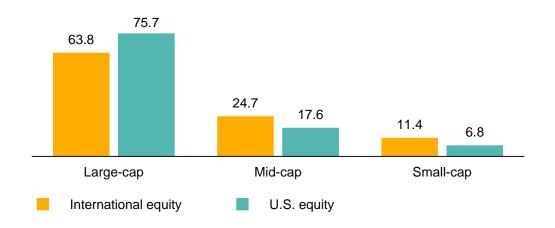
U.S. equities have not been this overvalued since the dot-com bubble



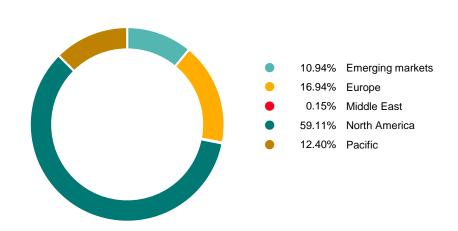
Notes: The U.S. fair-value CAPE is based on a statistical model that corrects CAPE measures for the level of inflation and interest rates. The statistical model specification is a three-variable vector error correction, including equity-earnings yields, 10-year trailing inflation, and 10-year U.S. Treasury yields estimated over the period January 1940 to September 2021. Details were published in the 2017 Vanguard research paper Global Macro Matters: As U.S. Stock Prices Rise, the Risk-Return Trade-Off Gets Tricky (Davis, 2017). A declining fair-value CAPE suggests that higher equity risk premium (ERP) compensation is required, while a rising fair-value CAPE suggests that the ERP is compressing. Sources: Vanguard calculations, based on data from Robert Shiller's website, at aida.wss.yale.edu/~shiller/data.htm, the U.S. Bureau of Labor Statistics, the Federal Reserve Board, Refinitiv, and Global Financial Data, as of September 30, 2021.

Global equity analysis

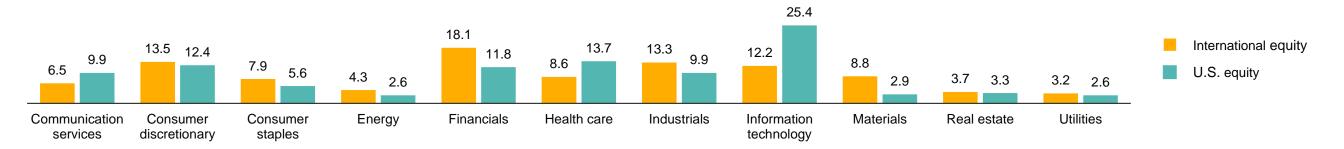
Global size exposures



Regional exposures

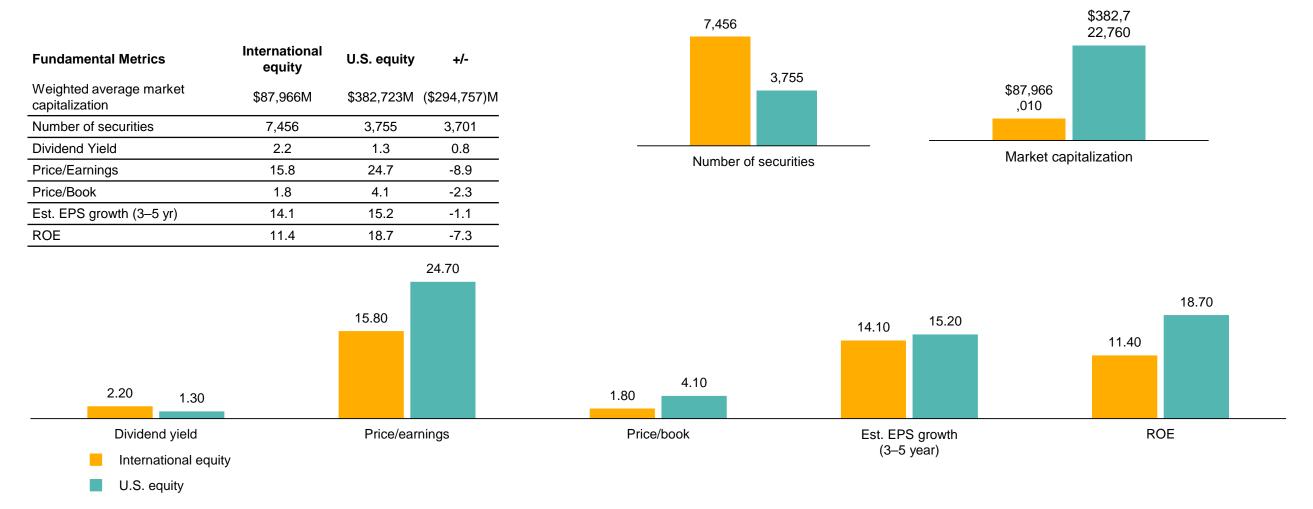


Sector exposures



Source: FactSet. Data as of 06/30/0221. Pie chart utilizes FTSE All-world index USD to represent percentage of global market capitalization, float adjusted. International equity represented by MSCI EAFE through January 30, 2001, MSCI EAFE + EMF through December 15, 2010, MSCI AC World ex USA IMI through February 27, 2014, and FTSE All Cap ex US thereafter. FTSE All Cap ex US data in FactSet only available after February 27, 2014. U.S. equity represented by Dow Jones U.S. Total Stock Market Index (formerly known as the 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.

Equity characteristics

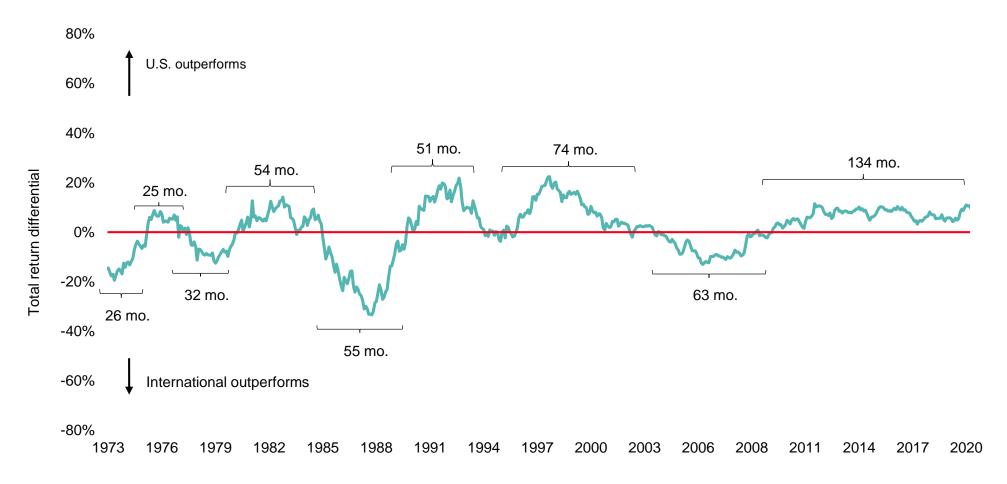


Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index. Source: FactSet. Data as of 06/30/0221.

Size and style methodology uses the Russell 9 box which excludes micro-cap companies that make up about 0.6% of the U.S. stock market. International equity represented by MSCI EAFE through January 30, 2001, MSCI EAFE + EMF through December 15, 2010, MSCI AC World ex USA IMI through February 27, 2014, and FTSE All Cap ex US thereafter. FTSE All Cap ex US data in FactSet only available after February 27, 2014. U.S. equity represented by Dow Jones U.S. Total Stock Market Index (formerly known as the 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.

U.S. versus international equity return differential (rolling 36 month)

Outperformance varies over time

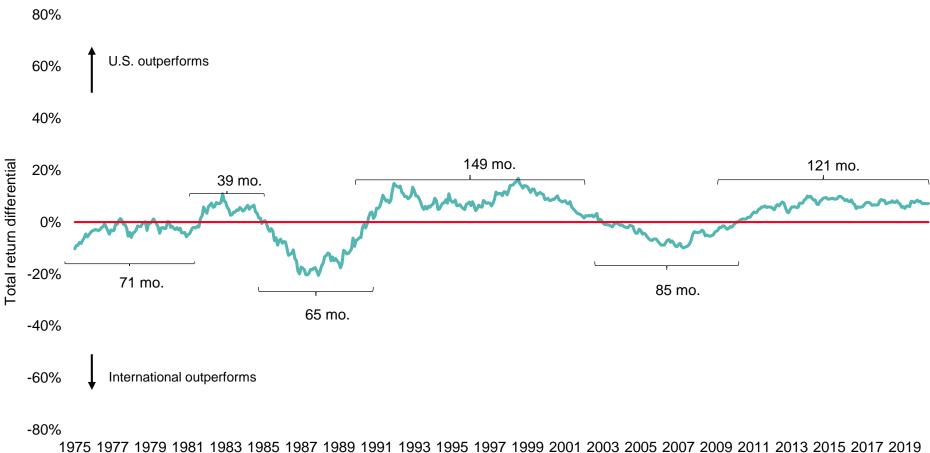


Past performance is no guarantee of future results. The performance of an index is not an exact representation of any particular investments, as you cannot invest directly in an index. Source: Vanguard, as of March 31, 2021.

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.

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

Outperformance varies over time

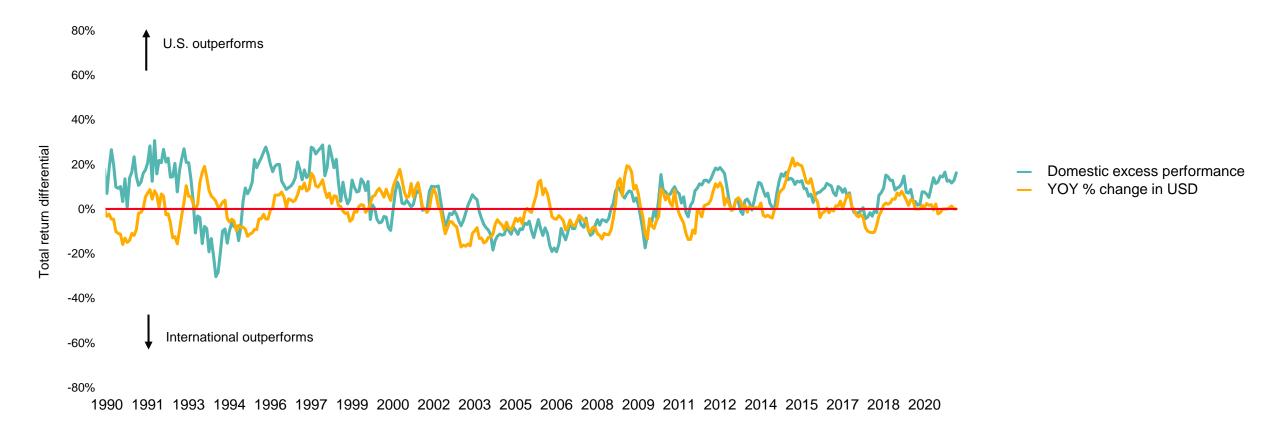


Past performance is no guarantee of future results. The performance of an index is not an exact representation of any particular investments, as you cannot invest directly in an index. Source: Vanguard, as of March 31, 2021.

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.

U.S. versus international equity return differential (rolling 12 month)

Post GFC, dollar strength has been a tailwind for U.S. returns



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. Data as of March 31, 2021.

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 U.S. YoY% change. In USD represents United States dollar Index; a measurement of the U.S. Dollar international exchange rate.

Global equity market valuations (rolling 36 months)



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: FactSet, as of June 30, 2021.

Notes: Figure displays the 36-month trailing price-to-earnings ratio defined by the most recent price divided by the 12-month average of trailing earnings. Dotted lines represent the average for each colored line since 12/29/1972. United States is represented by the MSCI United States Index and Developed Markets non-U.S. is represented by the MSCI World ex U.S. Index. Both indices are denominated in U.S. dollars and represent an unhedged position with data as of March 31, 2021.

Note on asset-return distributions



The asset-return distributions shown here represent Vanguard's view on the potential range of risk premiums that may occur over the next 10 years; such long-term projections are not intended to be extrapolated into a short-term view. These potential outcomes for long-term investment returns are generated by the Vanguard Capital Markets Model® (VCMM) and reflect the collective perspective of our Investment Strategy Group. The expected risk premiums—and the uncertainty surrounding those expectations—are among a number of qualitative and quantitative inputs used in Vanguard's investment methodology and portfolio construction process.

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 the VCMM are derived from 10,000 simulations for each modeled asset class. Simulations are as of September 30, 2021. Results from the model may vary with each use and over time.

For more information, see the Appendix section "About the Vanguard Capital Markets Model."

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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.

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.

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.

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