



Episcopal Foundation of Dallas

September 2020

Agenda

- I. Financial Market Review
- II. Portfolio Performance
- III. Fees and Expenses
- IV. Competitive Review
- V. Economic and Market Outlook
- VI. Vanguard Updates

Presented by:

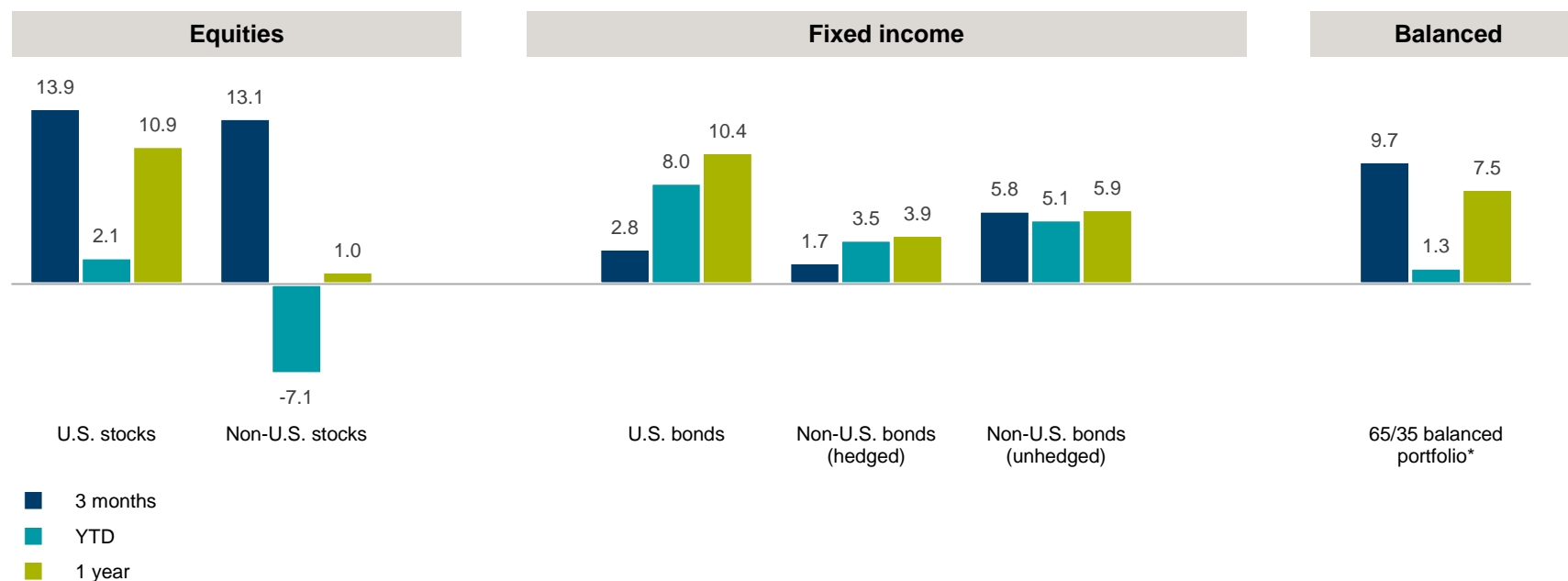
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Financial Market Review

Global markets stabilize amid continued pandemic uncertainty

- As the coronavirus pandemic continues to impact global economies, markets are assessing length and shape of recovery in progress
- Global equities sold off sharply during the first quarter, driving markets briefly into bear market territory, yet have recovered significantly from worst levels
- Fixed income delivered positive returns as Treasury yields reached record lows and credit bonds weathered the impact of the uncertainty

Global market returns as of July 31, 2020 (%)



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, CRSP, and FTSE.

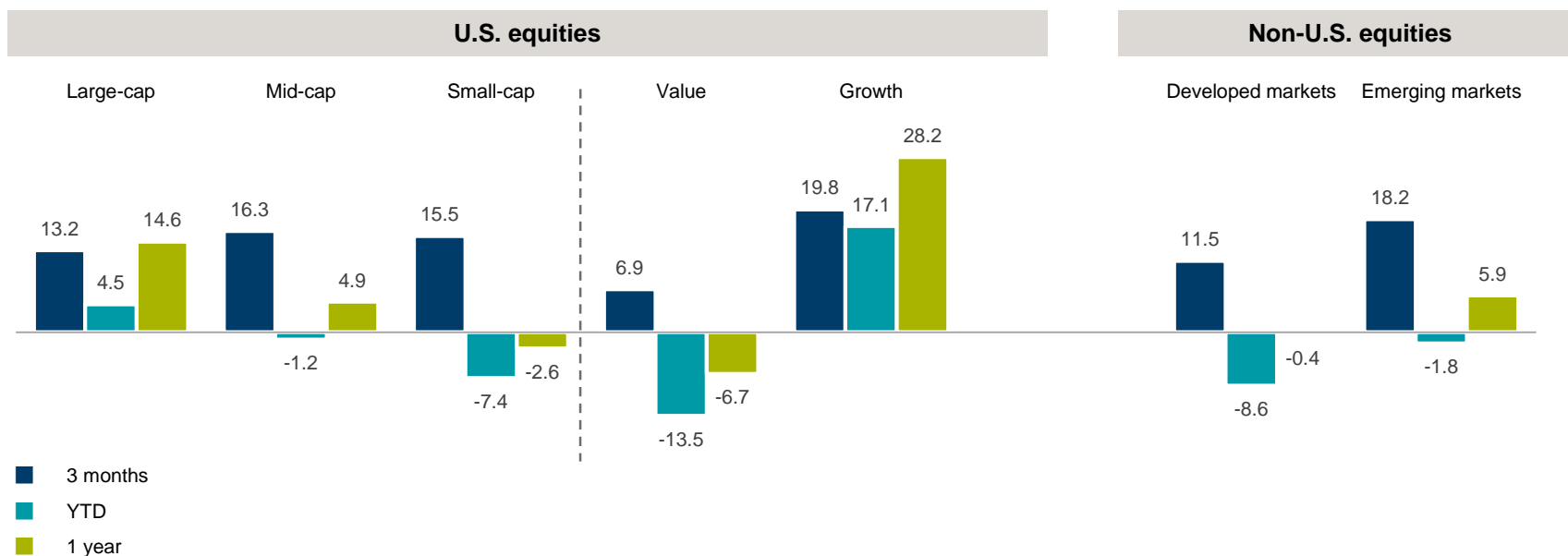
U.S. stocks (CRSP U.S. Total Market Index), non-U.S. stocks (FTSE Global All Cap ex US Index), U.S. bonds (Bloomberg Barclays U.S. Aggregate Float Adjusted Index), non-U.S. bonds hedged (Bloomberg Barclays Global Aggregate ex-USD Float Adjusted RIC Capped Index hedged), non-U.S. bonds unhedged (Bloomberg Barclays Global Aggregate Index ex USD).

* 65/35 balanced portfolio Static Composite (39% U.S. stocks, 26% international stocks, and 24.5% investment-grade U.S. bonds, 10.5% investment-grade international bonds).

Stocks across market cap and style see significant divergence

- Large-cap stocks posted the largest positive return by market cap during the trailing 12 months, and have avoided losses to a greater extent than mid- and small-caps YTD
- Growth stocks, led by a select group of mega-cap companies, have significantly outperformed value stocks, extending their recent performance advantage of the last couple years
- In non-U.S. equity markets, both developed and emerging markets have fallen short of the U.S. market returns YTD and over the past 12 months

Global equity market returns as of July 31, 2020 (%)



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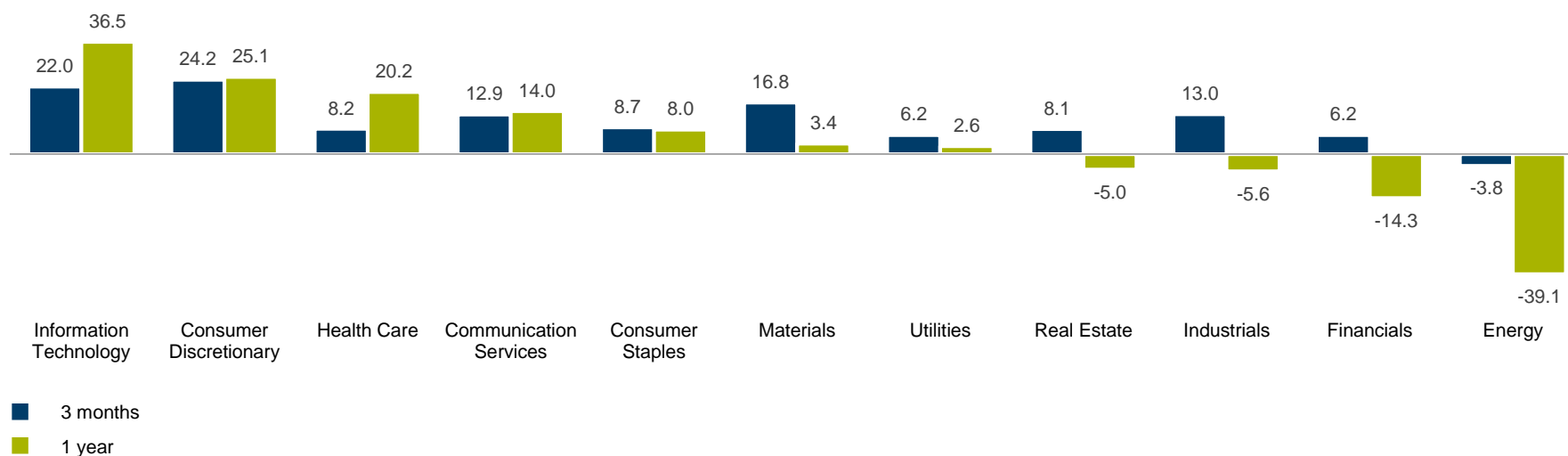
Sources: CRSP, FTSE, and Russell.

Large-cap (CRSP U.S. Mega Cap Index), mid-cap (CRSP U.S. Mid Cap Index), small-cap (CRSP U.S. Small Cap Index); value (Russell 3000 Value Index), growth (Russell 3000 Growth Index); developed markets (FTSE Developed All Cap ex U.S. Index), emerging markets (FTSE Emerging Markets All Cap China A Inclusion Index).

U.S. sector performance—Recovery present in many industries

- No sector escaped the sell-off in the first quarter as steep losses were booked across industries, yet growth-oriented companies have led the recovery during the second quarter
- Wide divergence in 12-month returns between the top and bottom sectors illustrates the benefit of diversification
- Energy has posted the deepest loss over the trailing 12 months, impacted by a severe demand shock from the COVID-19 pandemic

U.S. equity sector returns as of July 31, 2020 (%)



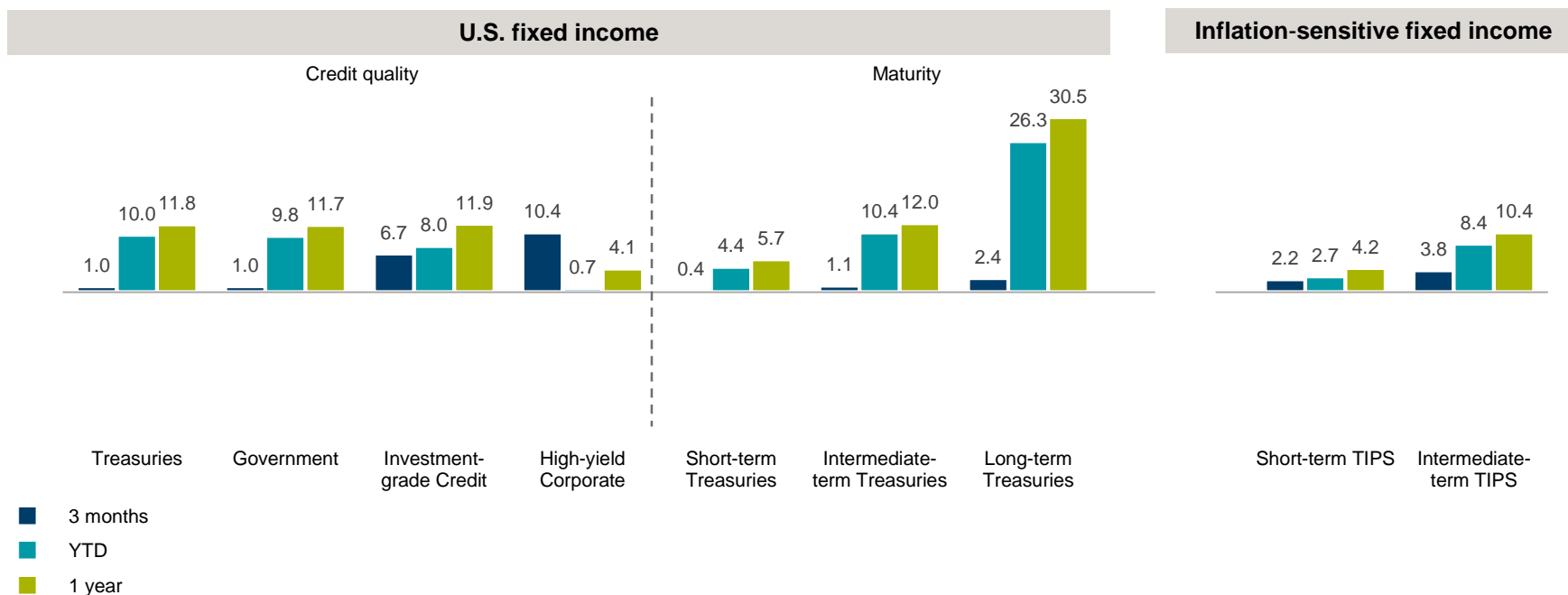
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Source: FactSet.
U.S. markets measured by CRSP U.S. Total Market Index.

Bonds post positive returns during crisis

- Treasury yields hit record lows across the curve as investors fled risky assets and the Federal Reserve cut short-term rates to near-zero
- Credit spreads widened sharply during the initial outbreak and market reaction, yet both investment-grade and high-yield have recovered during the past three months
- Treasuries have had exceptionally strong performance as economic activity and expectations have fallen dramatically

Domestic fixed income market returns as of July 31, 2020 (%)



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 Barclays.

Treasuries-Government-Investment-Grade Credit; High-Yield (Bloomberg Barclays U.S. Treasury/Government/Credit/Corporate High-Yield Indices); short-inter-long-term Treasuries (Bloomberg Barclays U.S. 1-5/5-10/Long Treasury Indices); short-term TIPS (Bloomberg Barclays U.S. Treasury 0-5 Year Inflation-Protected Index); intermediate-term TIPS (Bloomberg Barclays U.S. Treasury Inflation-Protected Index).

Portfolio Performance

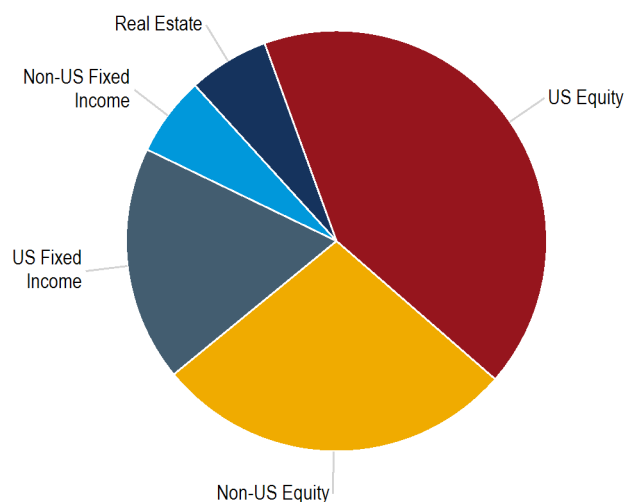
Total Portfolio Performance & Asset Allocation

Performance Summary ending July 31, 2020

	Market Value (\$)	1 Mo (%)	3 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
EPISCOPAL FOUNDATION OF DALLAS	38,745,381	3.88	11.23	-0.47	7.26	6.73	7.19	--	7.25	Jun-15
EPISCOPAL FOUNDATION OF DALLAS (Net)		3.88	11.23	-0.52	7.14	6.62	7.09	--	7.14	
Composite Benchmark		4.18	10.52	0.16	7.09	7.02	7.18	--	7.29	Jun-15

- Composite Benchmark = 6% Bloomberg Barclays Global Aggregate ex-USD Float Adjusted RIC Capped Hedged / 6% Real Estate Spliced Index / 18% Spliced Bloomberg Barclays US Aggregate Float Adjusted Index / 28% Spliced Total International Stock Index / 42% Spliced Total Stock Market Index

Current Allocation as of July 31, 2020



	Current \$	Current %	Policy	Difference*
US Equity	\$16,255,498	42.0%	42.0%	0.0%
Non-US Equity	\$10,722,832	27.7%	28.0%	-0.3%
US Fixed Income	\$7,021,095	18.1%	18.0%	0.1%
Non-US Fixed Income	\$2,349,338	6.1%	6.0%	0.1%
Real Estate	\$2,396,617	6.2%	6.0%	0.2%
Total	\$38,745,381	100.0%	100.0%	

*Difference between Policy and Current Allocation

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.

Performance Summary (Gross of Advisory Fees) ending July 31, 2020

	Market Value (\$)	% of Portfolio	1 Mo (%)	3 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
EPISCOPAL FOUNDATION OF DALLAS	38,745,381	100.00	3.88	11.23	-0.47	7.26	6.73	7.19	--	7.25	Jun-15
EPISCOPAL FOUNDATION OF DALLAS (Net)			3.88	11.23	-0.52	7.14	6.62	7.09	--	7.14	
Composite Benchmark			4.18	10.52	0.16	7.09	7.02	7.18	--	7.29	Jun-15
Total Equity	26,978,331	69.63	4.64	13.87	-2.54	7.14	7.06	7.97	--	7.94	Jun-15
Equity Domestic	16,255,498	41.95	4.41	11.82	-3.12	6.33	8.97	9.58	--	9.68	Jun-15
Spliced Total Stock Market Index			5.65	13.88	2.06	10.87	11.39	10.89	13.60	11.05	Jun-15
Equity International	10,722,832	27.68	4.98	16.98	-1.68	8.35	4.17	5.52	--	5.28	Jun-15
Spliced Total International Stock Index			4.48	13.11	-7.07	1.02	1.41	3.42	4.72	3.26	Jun-15
Total Fixed Income	9,370,433	24.18	1.40	3.28	6.55	8.34	5.48	4.49	--	4.56	Jun-15
Fixed Income Domestic	7,021,095	18.12	1.52	3.81	7.62	9.93	5.56	4.53	--	4.56	Jun-15
Spliced Bloomberg Barclays US Aggregate Float Adjusted Index			1.59	2.77	7.98	10.42	5.80	4.55	3.92	4.62	Jun-15
Fixed Income International	2,349,338	6.06	1.03	1.68	3.40	3.71	5.23	4.36	--	4.54	Jun-15
Bloomberg Barclays Global Aggregate ex-USD Float Adjusted RIC Capped Hedged			0.95	1.73	3.50	3.92	5.46	4.58	--	4.77	Jun-15
Total Real Estate	2,396,617	6.19	3.57	7.95	-10.80	-5.12	3.00	4.95	--	6.00	Jun-15
Real Estate Domestic	2,396,617	6.19	3.57	7.95	-10.80	-5.12	3.00	4.95	--	6.00	Jun-15
Real Estate Spliced Index			3.58	8.00	-10.73	-5.01	3.09	5.06	9.16	6.11	Jun-15

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

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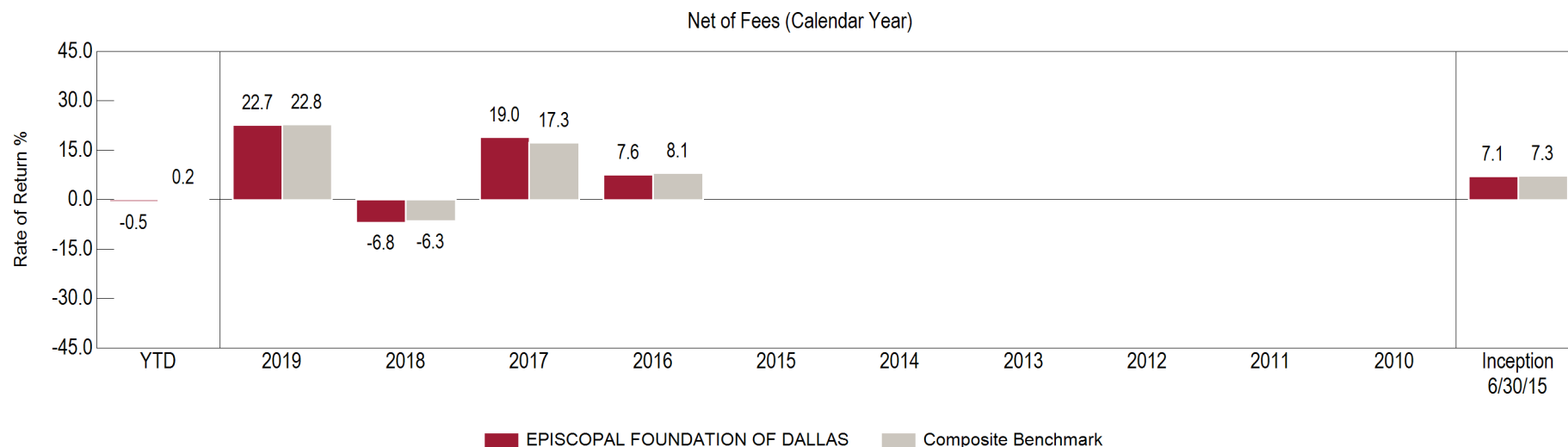
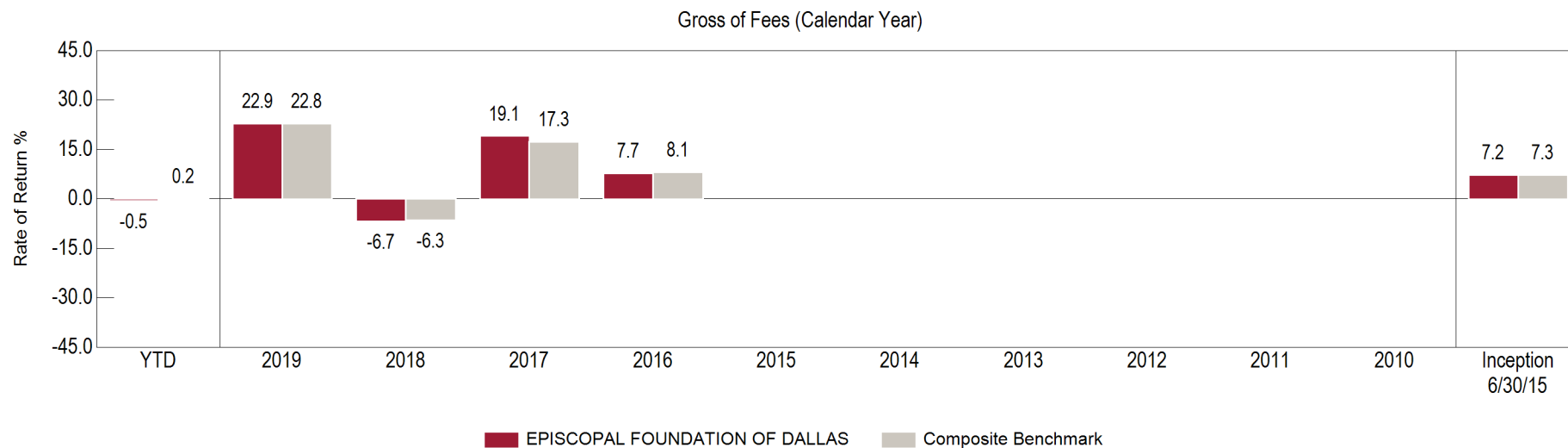
Performance Summary (Gross of Advisory Fees) ending July 31, 2020

	Market Value (\$)	% of Portfolio	1 Mo (%)	3 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
EPISCOPAL FOUNDATION OF DALLAS	38,745,381	100.00	3.88	11.23	-0.47	7.26	6.73	7.19	--	7.25	Jun-15
Composite Benchmark			4.18	10.52	0.16	7.09	7.02	7.18	--	7.29	Jun-15
Total Equity	26,978,331	69.63	4.64	13.87	-2.54	7.14	7.06	7.97	--	7.94	Jun-15
Equity Domestic	16,255,498	41.95	4.41	11.82	-3.12	6.33	8.97	9.58	--	9.68	Jun-15
Spliced Total Stock Market Index			5.65	13.88	2.06	10.87	11.39	10.89	13.60	11.05	Jun-15
Vanguard® Total Stock Market Index Fund Institutional Shares	8,197,095	21.16	5.64	13.88	2.07	10.87	11.39	10.88	13.59	11.05	Jun-15
Spliced Total Stock Market Index			5.65	13.88	2.06	10.87	11.39	10.89	13.60	11.05	Jun-15
Multi-Cap Core Funds Average			5.41	13.35	-0.71	6.64	8.09	7.79	10.88	7.89	Jun-15
Vanguard® Windsor™ Fund Admiral™ Shares	4,044,747	10.44	2.58	8.24	-13.20	-3.41	2.24	4.61	10.24	4.57	Jun-15
Russell 1000 Value			3.95	6.80	-12.95	-6.01	2.70	5.36	10.12	5.36	Jun-15
Multi-Cap Value Funds Average			3.55	7.85	-14.45	-8.42	0.76	3.66	8.50	3.62	Jun-15
Vanguard® PRIMECAP Fund Admiral™ Shares	4,013,656	10.36	3.75	11.28	-2.86	7.34	10.95	11.90	14.75	12.02	Jun-15
Russell 1000 Growth			7.69	19.93	18.26	29.84	20.91	16.84	17.29	17.31	Jun-15
Multi-Cap Growth Funds Average			7.16	21.09	17.06	23.78	17.80	13.29	14.48	13.63	Jun-15
Equity International	10,722,832	27.68	4.98	16.98	-1.68	8.35	4.17	5.52	--	5.28	Jun-15
Spliced Total International Stock Index			4.48	13.11	-7.07	1.02	1.41	3.42	4.72	3.26	Jun-15
Vanguard® Total International Stock Index Fund Inst Shares	5,377,717	13.88	4.08	13.79	-6.94	1.80	1.33	3.44	4.69	3.22	Jun-15
Spliced Total International Stock Index			4.48	13.11	-7.07	1.02	1.41	3.42	4.72	3.26	Jun-15
International Funds Average			3.92	13.67	-5.84	2.92	1.44	2.92	4.98	2.98	Jun-15
Vanguard® International Growth Fund Admiral™ Shares	2,677,362	6.91	8.71	29.96	22.16	37.64	15.37	14.04	11.14	13.55	Jun-15
Spliced International Index			4.46	12.75	-7.03	0.66	1.39	3.22	4.52	3.11	Jun-15
International Funds Average			3.92	13.67	-5.84	2.92	1.44	2.92	4.98	2.98	Jun-15
Vanguard® International Value Fund	2,667,753	6.89	2.76	10.17	-12.84	-4.69	-1.06	1.27	4.03	1.22	Jun-15
Spliced International Index			4.46	12.75	-7.03	0.66	1.39	3.22	4.52	3.11	Jun-15
International Funds Average			3.92	13.67	-5.84	2.92	1.44	2.92	4.98	2.98	Jun-15

Performance Summary (Gross of Advisory Fees) ending July 31, 2020

	Market Value (\$)	% of Portfolio	1 Mo (%)	3 Mo (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fixed Income	9,370,433	24.18	1.40	3.28	6.55	8.34	5.48	4.49	--	4.56	Jun-15
Fixed Income Domestic	7,021,095	18.12	1.52	3.81	7.62	9.93	5.56	4.53	--	4.56	Jun-15
Spliced Bloomberg Barclays US Aggregate Float Adjusted Index			1.59	2.77	7.98	10.42	5.80	4.55	3.92	4.62	Jun-15
Vanguard® Total Bond Market Index Fund Admiral™ Shares	3,507,590	9.05	1.56	2.84	8.01	10.40	5.75	4.48	3.84	4.56	Jun-15
Spliced Bloomberg Barclays US Aggregate Float Adjusted Index			1.59	2.77	7.98	10.42	5.80	4.55	3.92	4.62	Jun-15
Spliced Intermediate-Term Investment-Grade Debt Funds Average			1.82	4.23	7.27	9.44	5.24	4.20	3.85	4.23	Jun-15
Vanguard® Inter-Term Investment-Grade Fund Adm™ Shares	2,343,996	6.05	1.83	5.60	8.75	11.34	6.30	5.39	5.06	5.42	Jun-15
BBgBarc US Credit 5-10 Yr TR			2.22	6.67	7.54	11.04	6.76	5.97	5.63	5.95	Jun-15
Spliced Core Bond Funds Average			1.82	4.23	7.27	9.44	5.24	4.20	3.85	4.23	Jun-15
Vanguard® Short-Term Investment-Grade Fund Adm™ Shares	1,169,508	3.02	0.75	3.15	4.04	5.58	3.65	3.14	2.75	3.13	Jun-15
BBgBarc US Credit 1-5 Yr TR			0.72	2.90	4.10	6.11	3.93	3.29	3.01	3.27	Jun-15
1-5 Year Investment-Grade Debt Funds Average			0.70	2.86	2.65	3.93	2.77	2.30	2.04	2.28	Jun-15
Fixed Income International	2,349,338	6.06	1.03	1.68	3.40	3.71	5.23	4.36	--	4.54	Jun-15
Bloomberg Barclays Global Aggregate ex-USD Float Adjusted RIC Capped Hedged			0.95	1.73	3.50	3.92	5.46	4.58	--	4.77	Jun-15
Vanguard® Total International Bond Index Fund Adm™ Shares	2,349,338	6.06	1.03	1.68	3.40	3.71	5.23	4.36	--	4.54	Jun-15
Bloomberg Barclays Global Aggregate ex-USD Float Adjusted RIC Capped Hedged			0.95	1.73	3.50	3.92	5.46	4.58	--	4.77	Jun-15
International Income Funds Average			2.85	5.88	1.72	2.29	2.39	3.06	2.25	2.96	Jun-15
Total Real Estate	2,396,617	6.19	3.57	7.95	-10.80	-5.12	3.00	4.95	--	6.00	Jun-15
Real Estate Domestic	2,396,617	6.19	3.57	7.95	-10.80	-5.12	3.00	4.95	--	6.00	Jun-15
Real Estate Spliced Index			3.58	8.00	-10.73	-5.01	3.09	5.06	9.16	6.11	Jun-15
Vanguard® Real Estate Index Fund Admiral™ Shares	2,396,617	6.19	3.57	7.95	-10.80	-5.12	3.00	4.95	9.08	6.00	Jun-15
Real Estate Spliced Index			3.58	8.00	-10.73	-5.01	3.09	5.06	9.16	6.11	Jun-15
Real Estate Funds Average			4.54	8.74	-10.75	-5.48	2.56	4.20	8.31	5.14	Jun-15

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	\$37,330,792	\$34,931,316	\$39,302,262	\$37,562,414
Net Cash Flow	-\$76,103	-\$146,103	-\$582,585	-\$1,712,679
Capital Appreciation	\$1,477,011	\$3,792,491	-\$263,019	\$2,037,094
Income	\$13,680	\$167,677	\$288,723	\$858,552
Ending Market Value	\$38,745,381	\$38,745,381	\$38,745,381	\$38,745,381

Month Ending July 31, 2020

	Beginning Market Value	Net Cash Flow	Capital Appreciation	Income	Ending Market Value
Vanguard® Inter-Term Investment-Grade Fund Adm™ Shares	\$1,922,426	\$384,996	\$32,165	\$4,410	\$2,343,996
Vanguard® International Growth Fund Admiral™ Shares	\$3,077,192	-\$673,360	\$273,530	\$0	\$2,677,362
Vanguard® International Value Fund	\$2,676,041	-\$83,631	\$75,342	\$0	\$2,667,753
Vanguard® PRIMECAP Fund Admiral™ Shares	\$4,063,816	-\$204,452	\$154,293	\$0	\$4,013,656
Vanguard® Real Estate Index Fund Admiral™ Shares	\$2,181,377	\$132,147	\$83,093	\$0	\$2,396,617
Vanguard® Short-Term Investment-Grade Fund Adm™ Shares	\$928,696	\$233,310	\$5,526	\$1,977	\$1,169,508
Vanguard® Total Bond Market Index Fund Admiral™ Shares	\$2,801,000	\$661,427	\$39,727	\$5,437	\$3,507,590
Vanguard® Total International Bond Index Fund Adm™ Shares	\$1,851,900	\$477,278	\$18,303	\$1,857	\$2,349,338
Vanguard® Total International Stock Index Fund Inst Shares	\$5,461,477	-\$309,772	\$226,012	\$0	\$5,377,717
Vanguard® Total Stock Market Index Fund Institutional Shares	\$8,322,647	-\$588,806	\$463,254	\$0	\$8,197,095
Vanguard® Windsor™ Fund Admiral™ Shares	\$4,044,219	-\$105,238	\$105,767	\$0	\$4,044,747
Total	\$37,330,792	-\$76,103	\$1,477,011	\$13,680	\$38,745,381

Episcopal Foundation of Dallas - Aggregated Performance Summary								
as-of June 30, 2020								
	Market Value*	Portfolio Allocation	Three-Month	Year-to-Date	One-Year	Three-Year	Five-Year	Since Inception
Vanguard	\$37,330,792	100.00%	16.24%	-4.24%	3.54%	5.96%	6.45	6.46%
Vanguard Composite Benchmark			15.42%	-3.86%	3.31%	6.24%	6.54%	6.54%
Aggregate Portfolio (net of EFD fee)*	\$37,330,792	100.00%	16.11%	-4.49%	2.99%	5.40%	5.97%	7.43%
Aggregate Composite Benchmark*			15.42%	-3.86%	3.31%	6.24%	6.78%	8.40%
<p>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 June 30, 2020. Performance effective date for Vanguard Composite as-of September 30, 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.</p> <p>*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.</p>								

Performance Summary (Gross of Advisory Fees) ending December 31, 2018

	Market Value (\$)	% of Portfolio	2018 Q4 (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
EPISCOPAL FOUNDATION OF DALLAS	34,586,939	100.00	-9.86	-6.66	6.20	--	--	4.52	Jun-15
Composite Benchmark			-9.35	-6.31	5.93	--	--	4.38	Jun-15
Total Equity	23,904,971	69.12	-13.73	-9.32	7.60	--	--	5.02	Jun-15
Equity Domestic	14,550,417	42.07	-14.49	-6.20	8.92	--	--	7.07	Jun-15
Spliced Total Stock Market Index			-14.26	-5.17	9.00	7.92	13.26	7.21	Jun-15
Vanguard® Total Stock Market Index Fund Institutional Shares	7,345,381	21.24	-14.26	-5.16	8.99	7.91	13.26	7.21	Jun-15
Spliced Total Stock Market Index			-14.26	-5.17	9.00	7.92	13.26	7.21	Jun-15
Multi-Cap Core Funds Average			-14.42	-7.96	6.51	5.29	11.20	4.34	Jun-15
Vanguard® PRIMECAP Fund Admiral™ Shares	3,665,062	10.60	-14.42	-1.94	12.06	11.41	15.26	10.84	Jun-15
Russell 1000 Growth			-15.89	-1.51	11.15	10.40	15.29	9.99	Jun-15
Multi-Cap Growth Funds Average			-16.19	-2.85	8.21	7.28	12.95	6.37	Jun-15
Vanguard® Windsor™ Fund Admiral™ Shares	3,539,973	10.23	-15.03	-12.37	5.56	4.96	12.07	2.98	Jun-15
Russell 1000 Value			-11.72	-8.27	6.95	5.95	11.18	4.94	Jun-15
Multi-Cap Value Funds Average			-14.40	-11.29	5.89	4.29	10.60	3.35	Jun-15
Equity International	9,354,554	27.05	-12.51	-13.93	5.54	--	--	1.91	Jun-15
Spliced Total International Stock Index			-11.79	-14.61	4.44	1.05	6.64	1.13	Jun-15
Vanguard® Total International Stock Index Fund Inst Shares	4,741,570	13.71	-11.66	-14.39	4.56	0.97	6.38	1.08	Jun-15
Spliced Total International Stock Index			-11.79	-14.61	4.44	1.05	6.64	1.13	Jun-15
International Funds Average			-13.47	-15.58	2.46	0.15	6.08	0.06	Jun-15
Vanguard® International Value Fund	2,369,918	6.85	-12.01	-14.52	4.54	-0.05	6.03	0.39	Jun-15
Spliced International Index			-11.46	-14.20	4.48	0.68	5.53	0.96	Jun-15
International Funds Average			-13.47	-15.58	2.46	0.15	6.08	0.06	Jun-15
Vanguard® International Growth Fund Admiral™ Shares	2,243,066	6.49	-14.76	-12.58	8.42	3.68	9.67	5.04	Jun-15
Spliced International Index			-11.46	-14.20	4.48	0.68	5.53	0.96	Jun-15
International Funds Average			-13.47	-15.58	2.46	0.15	6.08	0.06	Jun-15
Total Fixed Income	8,571,907	24.78	1.31	0.84	2.46	--	--	2.37	Jun-15
Fixed Income Domestic	6,365,655	18.40	1.13	0.15	2.18	--	--	2.03	Jun-15
Spliced Bloomberg Barclays US Aggregate Float Adjusted Index			1.58	-0.08	2.09	2.50	3.49	1.95	Jun-15

Legal

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Total Portfolio returns represent client-specific time-weighted returns (TWR) are presented gross of any applicable service fees with the exception of mutual fund expense ratios and other security-level expenses.

Internal rates of return (IRR) are net of any applicable service fees, include account-specific cash flows, and are not directly comparable to a benchmark, since benchmarks do not include cash flows.

Client performance inception date is generally the first month-end after initial funding. Mutual funds and all investments are subject to risk, including the possible loss of the money you invest. Diversification does not ensure a profit or protect against a loss.

Performance figures assume the reinvestment of dividends and capital gains distributions. The fund performance percentages are based on fund total return data, adjusted for expenses, obtained from Lipper, a Thomson Reuters Company. The total return data was not adjusted for fees and loads.

Benchmark comparative indexes represent unmanaged or average returns on various financial assets, which can be compared with funds' total returns for the purpose of measuring relative performance.

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The performance data shown represents past performance, which is not a guarantee of future results. Investment returns and principal value will fluctuate, so investors' shares, when sold, may be worth more or less than their original cost. Current performance may be lower or higher than the 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. For performance data current to the most recent quarter-end, visit our website at www.vanguard.com/performance.

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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 %	\$38.7 million
Management fee	0.108%	\$41,996
Fund expenses*	0.146%	\$56,568
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	0.254%	\$98,564

* These costs are estimated. Actual weighted annual 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 July 31, 2020

Name	Market Value	% of Portfolio	Expense Ratio
Total Equity	\$26,978,331	69.6%	
Equity Domestic	\$16,255,498	42.0%	
Vanguard® Total Stock Market Index Fund Institutional Shares	\$8,197,095	21.2%	0.030%
Vanguard® Windsor™ Fund Admiral™ Shares	\$4,044,747	10.4%	0.200%
Vanguard® PRIMECAP Fund Admiral™ Shares	\$4,013,656	10.4%	0.310%
Equity International	\$10,722,832	27.7%	
Vanguard® International Value Fund	\$2,667,753	6.9%	0.370%
Vanguard® International Growth Fund Admiral™ Shares	\$2,677,362	6.9%	0.320%
Vanguard® Total International Stock Index Fund Inst Shares	\$5,377,717	13.9%	0.080%
Total Fixed Income	\$9,370,433	24.2%	
Fixed Income Domestic	\$7,021,095	18.1%	
Vanguard® Short-Term Investment-Grade Fund Adm™ Shares	\$1,169,508	3.0%	0.100%
Vanguard® Total Bond Market Index Fund Admiral™ Shares	\$3,507,590	9.1%	0.050%
Vanguard® Inter-Term Investment-Grade Fund Adm™ Shares	\$2,343,996	6.0%	0.100%
Fixed Income International	\$2,349,338	6.1%	
Vanguard® Total International Bond Index Fund Adm™ Shares	\$2,349,338	6.1%	0.110%
Total Real Estate	\$2,396,617	6.2%	
Real Estate Domestic	\$2,396,617	6.2%	
Vanguard® Real Estate Index Fund Admiral™ Shares	\$2,396,617	6.2%	0.120%
Total	\$38,745,381	100.0%	0.146%

Competitive Review

Analysis assumptions

Initial investment for analysis: **\$1,500,000**

ECF Balance Fund

Ticker	Name	Earliest returns available	Allocation
SSSYX	State Street Equity 500 Index K	10/31/2014	34.30%
IJH	iShares Core S&P Mid-Cap ETF	06/30/2000	6.60%
VEA	Vanguard FTSE Developed Markets ETF	08/31/2007	11.51%
GWX	SPDR® S&P International Small Cap ETF	05/31/2007	2.70%
RWO	SPDR® Dow Jones Global Real Estate ETF	06/30/2008	3.34%
VAIPX	Vanguard Inflation-Protected Secs Adm	07/31/2005	1.52%
BRHYX	BlackRock High Yield Bond K	12/31/1998	1.37%
TGEIX	TCW Emerging Markets Income I	06/30/1998	1.21%
SIVIX	State Street Instl Small-Cap Equity Inv	09/30/1998	5.26%
ABEMX	Aberdeen Emerging Markets Instl	06/30/2007	6.89%
GVI	iShares Intermediate Govt/Crdt Bd ETF	02/28/2007	19.30%
SPIB	SPDR® Portfolio Interm Term Corp Bd ETF	03/31/2009	6.00%

Analysis assumptions

Initial investment for analysis: **\$1,500,000**

Episcopal Foundation of Dallas

Ticker	Name	Earliest returns available	Allocation
VPMAX	Vanguard PRIMECAP Adm	12/31/2001	10.50%
VITSX	Vanguard Total Stock Market Idx I	08/31/1997	21.00%
VWNEX	Vanguard Windsor™ Admiral™	12/31/2001	10.50%
VTRIX	Vanguard International Value Inv	06/30/1983	7.00%
VWILX	Vanguard International Growth Adm	09/30/2001	7.00%
VTSNX	Vanguard Total Intl Stock Index I	12/31/2010	14.00%
VFSUX	Vanguard Short-Term Investment-Grade Adm	03/31/2001	3.00%
VFIDX	Vanguard Inter-Term Investment-Grde Adm	03/31/2001	6.00%
VBTLX	Vanguard Total Bond Market Index Adm	12/31/2001	9.00%
VTABX	Vanguard Total Intl Bd Idx Admiral™	06/30/2013	6.00%
VGSLX	Vanguard Real Estate Index Admiral	12/31/2001	6.00%

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. There may be other material differences between products that must be considered prior to investing. 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.

Portfolio Summary

Currency
USD

ECF Growth & Income \$100,000.00

Morningstar® Equity Style Box™

	Value	Blend	Growth	
Large	21	22	21	51-100
				26-50
Mid	7	8	7	11-25
				0-10
Small	5	5	4	

Total Stock Holdings

5,903

% Not Classified

0

Sector Weightings

	Portfolio %
Cyclical	37.04
Basic Materials	4.25
Consumer Cyclical	10.37
Financial Services	13.81
Real Estate	8.61
Sensitive	40.76
Communication Services	8.48
Energy	2.70
Industrials	10.72
Technology	18.86
Defensive	22.20
Consumer Defensive	7.51
Healthcare	11.96
Utilities	2.73
Not Classified	0.00

Regional Exposure

	Portfolio %
Greater Asia	17.11
Japan	5.67
Australasia	1.53
Asia Developed	4.51
Asia Emerging	5.40
Americas	70.87
North America	69.83
Latin America	1.04
Greater Europe	12.02
United Kingdom	2.88
Europe Developed	8.09
Europe Emerging	0.64
Africa/Middle East	0.41
Not Classified	0.00

Equity Style

	Portfolio
Average Market Cap(mil)	37,647.88
Price/Earnings	19.57
Price/Book	2.20
Price/Sales	1.59
Price/Cash Flow	11.26

Profitability (% Stks)	Portfolio %	Market Maturity (% Stks)	Portfolio %
Net Margin	16.07	Developed Markets	92.66
ROE	19.61	Emerging Markets	7.34
ROA	7.19	Not Available	0.00
Debt/Capital	40.03		

VG Portfolio \$100,000.00

Morningstar® Equity Style Box™

	Value	Blend	Growth	
Large	26	25	24	51-100
				26-50
Mid	9	7	5	11-25
				0-10
Small	2	1	1	

Total Stock Holdings

10,748

% Not Classified

0

Sector Weightings

	Portfolio %
Cyclical	37.67
Basic Materials	3.42
Consumer Cyclical	10.52
Financial Services	12.96
Real Estate	10.77
Sensitive	38.60
Communication Services	8.88
Energy	2.75
Industrials	9.73
Technology	17.24
Defensive	23.73
Consumer Defensive	6.05
Healthcare	15.25
Utilities	2.43
Not Classified	0.00

Regional Exposure

	Portfolio %
Greater Asia	16.49
Japan	5.98
Australasia	0.91
Asia Developed	3.47
Asia Emerging	6.13
Americas	64.24
North America	63.47
Latin America	0.77
Greater Europe	19.27
United Kingdom	4.18
Europe Developed	14.18
Europe Emerging	0.29
Africa/Middle East	0.62
Not Classified	0.00

Equity Style

	Portfolio
Average Market Cap(mil)	45,504.58
Price/Earnings	16.60
Price/Book	1.92
Price/Sales	1.40
Price/Cash Flow	9.82

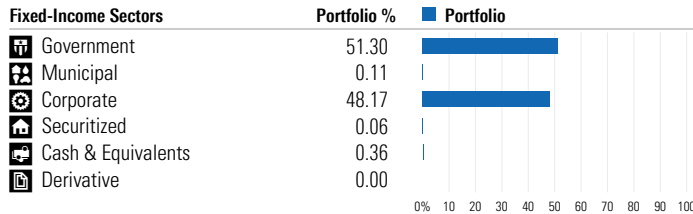
Profitability (% Stks)	Portfolio %	Market Maturity (% Stks)	Portfolio %
Net Margin	15.80	Developed Markets	92.43
ROE	19.29	Emerging Markets	7.57
ROA	6.67	Not Available	0.00
Debt/Capital	40.43		

Portfolio Summary

Currency
USD

ECF Growth & Income \$100,000.00

Interest Rate Risk	Bonds %	% Not Available
Average Effective Maturity	5.29	0.00
Average Effective Duration	4.40	0.00
Average Weighted Coupon	—	0.00



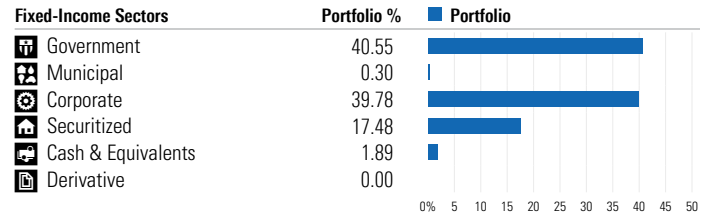
Maturity Breakdown		Credit Quality Breakdown	
Effective Maturity	Portfolio (%)	Credit Quality	Portfolio (%)
1-3	28.40	AAA	51.11
3-5	28.62	AA	3.51
5-7	17.80	A	18.07
7-10	20.53	BBB	20.91
10-15	1.65	BB	2.43
15-20	0.24	B	2.96
20-30	2.19	Below B	0.93
>30	0.57	NR	0.08

Morningstar® Fixed Income Style Box™

	Ltd	Mod	Ext		Total Bond Holdings	% Not Classified
High	66	0	5	51-100	7,317	0
				26-50		
Med	0	20	0	11-25		
				0-10		
Low	5	0	4			

VG Portfolio \$100,000.00

Interest Rate Risk	Bonds %	% Not Available
Average Effective Maturity	7.46	0.03
Average Effective Duration	6.09	0.03
Average Weighted Coupon	—	0.03



Maturity Breakdown		Credit Quality Breakdown	
Effective Maturity	Portfolio (%)	Credit Quality	Portfolio (%)
1-3	18.39	AAA	39.63
3-5	19.05	AA	11.51
5-7	15.90	A	25.29
7-10	14.67	BBB	21.69
10-15	5.36	BB	0.34
15-20	4.07	B	0.07
20-30	18.93	Below B	0.02
>30	3.64	NR	1.45

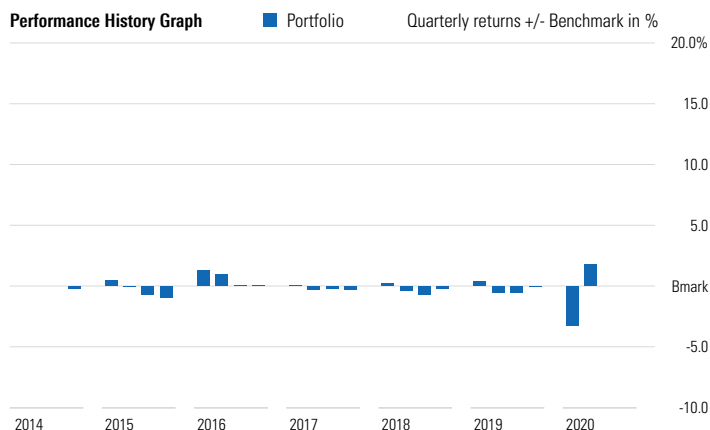
Morningstar® Fixed Income Style Box™

	Ltd	Mod	Ext		Total Bond Holdings	% Not Classified
High	0	37	0	51-100	22,981	0
				26-50		
Med	12	25	26	11-25		
				0-10		
Low	0	0	0			

Portfolio Summary

Currency
USD

ECF Growth & Income \$100,000.00



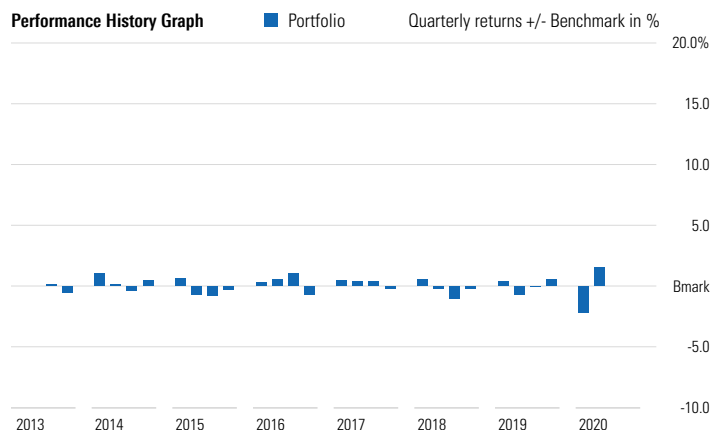
Risk and Return Statistics

	3 Year Portfolio	5 Year Portfolio	10 Year Portfolio
Standard Deviation	12.49	10.81	—
Mean	5.44	6.08	—
Sharpe Ratio	0.36	0.51	—

MPT Statistics

	3 Year Portfolio	5 Year Portfolio	10 Year Portfolio
Alpha	-2.04	-1.26	—
Beta	1.11	1.08	—
R-Squared	98.51	97.81	—

VG Portfolio \$100,000.00



Risk and Return Statistics

	3 Year Portfolio	5 Year Portfolio	10 Year Portfolio
Standard Deviation	13.09	11.53	—
Mean	6.14	6.61	—
Sharpe Ratio	0.40	0.53	—

MPT Statistics

	3 Year Portfolio	5 Year Portfolio	10 Year Portfolio
Alpha	-0.89	-0.50	—
Beta	1.09	1.07	—
R-Squared	98.32	98.08	—

Performance Disclosure: The portfolio-level performance shown is hypothetical and for illustrative purposes only. Investor returns will differ from the results shown. The performance data reflects monthly portfolio rebalancing.

Historical Performance Comparison

As of	June 2020	
Longest available range	September 2014 - June 2020	
Metric	ECF Balance Fund	Episcopal Foundation of Dallas
Annualized return		
1-year return	2.22%	3.63%
3-year return	5.45%	6.17%
5-year return	6.10%	6.58%
10-year return	-	-
Longest available return	6.02%	6.46%
Calendar-year return		
2019 return	21.47%	23.05%
2018 return	-6.18%	-6.68%
2017 return	16.22%	19.48%
2016 return	9.20%	7.56%
2015 return	-0.59%	-0.68%

Historical Risk-Adjusted Comparison

Standard deviation		
1-year standard deviation	16.91%	17.16%
3-year standard deviation	12.48%	12.96%
5-year standard deviation	10.83%	11.42%
10-year standard deviation	-	-
Longest available standard deviation	10.26%	10.83%
Max drawdown		
Max drawdown	-16.75%	-17.00%
Max drawdown date	Mar 2020	Mar 2020
Drawdown and recovery period	Jan 2020 - Jun 2020	Jan 2020 - Jun 2020
Drawdown and recovery duration	6 months	6 months
Sharpe ratio		
1-year Sharpe ratio	0.06	0.14
3-year Sharpe ratio	0.30	0.35
5-year Sharpe ratio	0.46	0.47
10-year Sharpe ratio	-	-
Longest available Sharpe ratio	0.49	0.50
Weighted Average Expense Ratio	0.227%	0.151%

FORWARD-LOOKING ANALYSIS

Probability of meeting annualized return objectives

Nominal | 10 Years



	ECF Balance Fund	Episcopal Foundation of Dallas			
> 2% return	95.54%	96.33%			
> 3% return	90.03%	91.78%			
> 4% return	80.80%	84.26%			
> 5% return	67.19%	72.66%			
> 6% return	51.23%	58.10%			
> 7% return	34.69%	42.23%			
> 8% return	21.51%	27.72%			

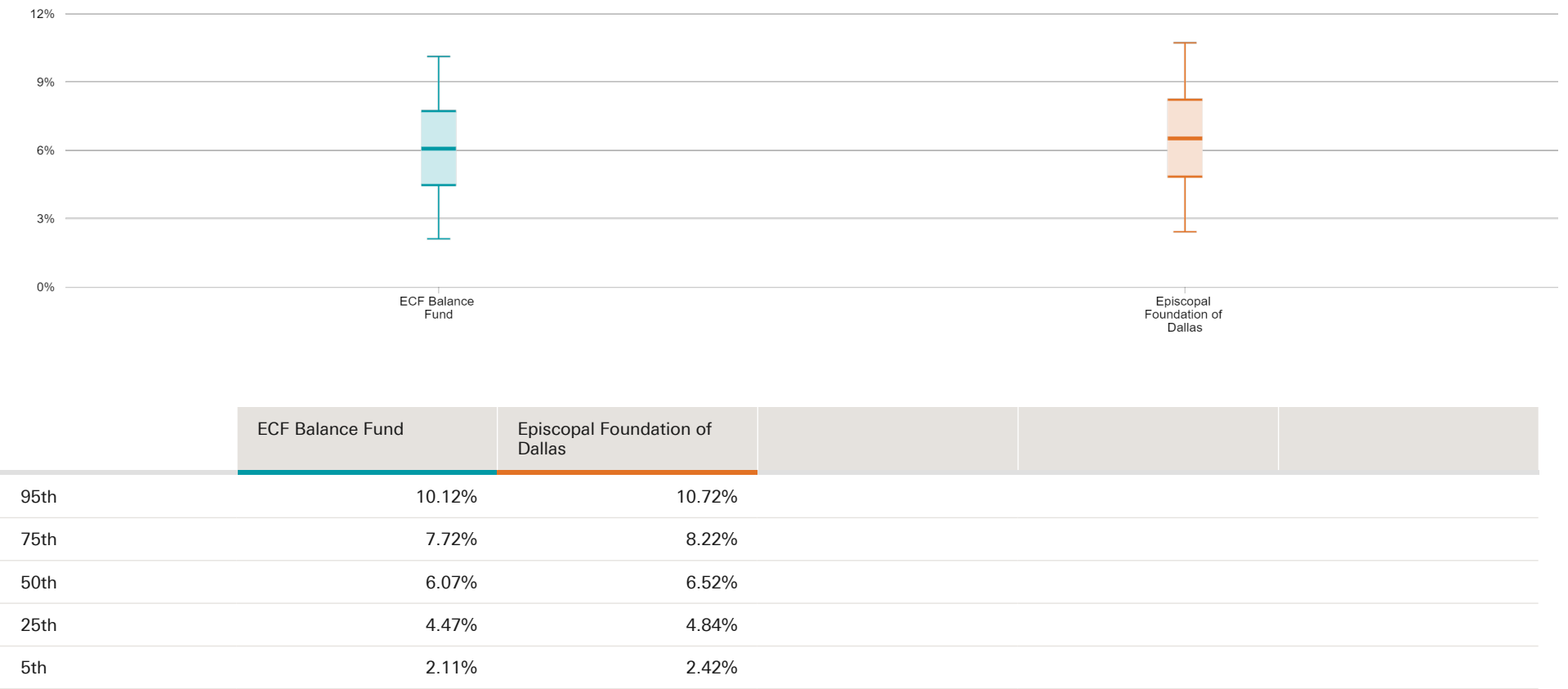
IMPORTANT: The projections and other information generated by the Vanguard Capital Markets Model (VCMM) regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. Distribution of return outcomes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

The performance displayed is gross of any advisory fees that would be assessed if portfolios are managed by Vanguard Institutional Advisory services. Advisory fees are calculated and assessed as set forth in VIAS' advisory brochure and in Part II of Form ADV, and are based on each client's assets. Accordingly, the performance of the portfolios included are not intended to be reflective of the potential performance of a VIAS-managed portfolio as the assessment of the advisory fee would reduce the performance of the portfolios displayed. For example, a 0.5% advisory fee applied annually over a period of 10 years would reduce a gross 6% annualized return to a net 5.47% annualized return.

FORWARD-LOOKING ANALYSIS

Distribution of annualized returns

Nominal | 10 Years



IMPORTANT: The projections and 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. Distribution of return outcomes from VCMM are derived from 10,000 simulations for each modeled asset class. Results from the model may vary with each use and over time. For more information, please see the Important Information in the appendix.

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FORWARD-LOOKING ANALYSIS

Distribution of annualized standard deviations

10 Years



	ECF Balance Fund	Episcopal Foundation of Dallas			
95th	17.68%	18.77%			
75th	13.56%	14.46%			
50th	11.41%	12.16%			
25th	9.41%	10.02%			
5th	6.91%	7.37%			

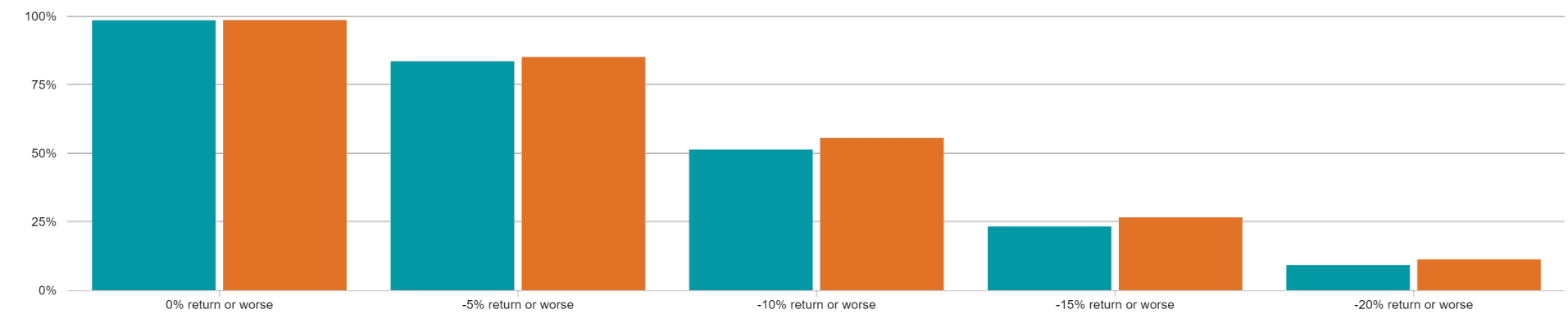
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FORWARD-LOOKING ANALYSIS

Probability of a negative return in any given year

Nominal | 10 Years



	ECF Balance Fund	Episcopal Foundation of Dallas			
0% return or worse	98.48%	98.54%			
-5% return or worse	83.53%	85.09%			
-10% return or worse	51.30%	55.57%			
-15% return or worse	23.25%	26.56%			
-20% return or worse	9.17%	11.24%			

IMPORTANT: The projections and 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. Distribution of return outcomes from VCMM are derived from 10,000 simulations for each modeled asset class. Results from the model may vary with each use and over time. For more information, please see the Important Information in the appendix.

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FORWARD-LOOKING ANALYSIS

Distribution of annualized Sharpe ratios



	ECF Balance Fund	Episcopal Foundation of Dallas			
95th	0.92	0.93			
75th	0.63	0.64			
50th	0.47	0.48			
25th	0.33	0.34			
5th	0.14	0.16			

IMPORTANT: The projections and 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. Distribution of return outcomes from VCMM are derived from 10,000 simulations for each modeled asset class. Results from the model may vary with each use and over time. For more information, please see the Important Information in the appendix.

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Economic and Market Outlook

Vanguard August 2020 market and economic outlook at a glance

Key takeaways:

- U.S. GDP fell by a third in the second quarter, underscoring the challenges ahead.
- The course of the economy depends on the progression of COVID-19 and the prospects for market volatility remain high.
- Vanguard expects a 2020 U.S. economic contraction of –7% to –9%.
- Expect a recovery in global growth to begin in the second half of 2020.
- China's recovery will be more V-shaped than other regions'.

Asset-class return outlooks

Our ten-year annualized nominal return projections, as of June 30, 2020, are shown below. Please note that the figures are based on a 1-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	4.0%–6.0%	16.4%
Global equities ex-U.S. (unhedged)	7.0%–9.0%	18.3%
FIXED INCOME		
	Return projection	Median volatility
U.S. aggregate bonds	0.5%–1.5%	4.0%
Global bonds ex-U.S. (hedged)	0.5%–1.5%	2.1%

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, 2020. 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 August 2020 market and economic outlook at a glance



A two-phase recovery

Expect global growth to begin recovering in the second half of 2020

The trajectory of that growth will be related to the degree to which COVID-19 requires containment efforts that could curtail economic activity.

We expect the first phase to be characterized by rapid signs of recovery as businesses reopen and restrictions are eased.

The second phase is likely to take longer as demand, especially in sensitive face-to-face sectors, returns only gradually.

We foresee global growth falling by about -3% in 2020. With that view, Vanguard is more bullish on the global economy than is the International Monetary Fund after the latter's most recent economic outlook, though we're less optimistic than much of the industry.

Sectors such as information technology, communication services, and health care have experienced positive relative performance during both the market drop and the recovery so far.

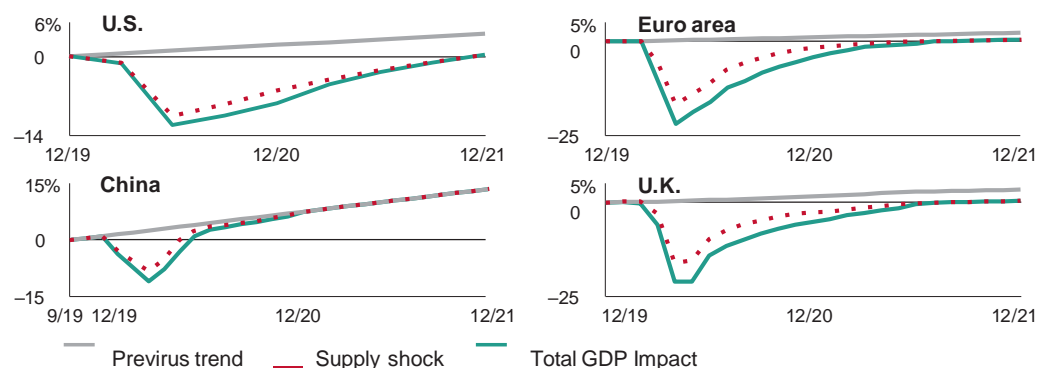


Region-by-region outlook

China's recovery will be more V-shaped compared to other regions'

Just as the depth of the shock has varied across regions, the trajectory of the recovery also will vary according to the speed of the lockdown exit across sectors, the industrial composition, and the monetary and fiscal policy responses.

Expected path of GDP broken down by demand and supply for major countries/regions



Notes: The charts show our expectation for the level of impact on real GDP in each country in its local currency. The total GDP impact signifies the percentage-point change in the level of GDP.

Source: Vanguard.

Vanguard August 2020 market and economic outlook at a glance

United States. The U.S. Bureau of Economic Analysis (BEA) reported July 30 that the U.S. economy contracted at an annualized rate of –32.9% in the second quarter. The rate of decline, in line with Vanguard's expectations, underscores the challenges ahead. Vanguard still foresees the 2020 U.S. economic contraction in a range of –7% to –9%.

- We see a return to nationwide lockdowns because of the pandemic as unlikely, though a scenario such as a second wave of the virus in the fall does represent a downside risk to our view.
- We believe that the strength of the recovery depends on additional fiscal moves, particularly in regard to stemming layoffs and supporting small businesses and unemployed individuals.

China. Only in China do we expect the recovery to be faster and more V-shaped, with an expected second-quarter rebound in GDP in the high single digits compared with a quarter-on-quarter contraction of –9.8% in the first quarter.

- We continue to foresee full-year growth for China in a 1% to 3% range. The pandemic is making it challenging for China to fulfill the terms of its Phase One trade deal with the United States.

Euro area. Better-than-expected economic data from the euro area, particularly Germany, makes us less pessimistic about the degree of a second-quarter and full-year contraction for the region than we had been a month ago.

- Vanguard now expects a full-year economic contraction in the euro area around –10%. We also anticipate a second-quarter contraction around –16%.

Emerging markets. The IMF foresees emerging markets contracting by –3.0% before rebounding to growth of 5.9% in 2021.



Economy may
still need a
helping hand

The Fed prepares for a long-haul recovery

The U.S. Federal Open Market Committee (FOMC) voted unanimously Wednesday, July 29, to leave the target range for its federal funds rate unchanged at 0.00%–0.25%.

- The Fed said it expects to maintain this target range “until it is confident that the economy has weathered recent events.”
- The Fed emphasized that the course of the economy depends on the progression of COVID-19, a view that Vanguard has held since the pandemic began

Vanguard August 2020 market and economic outlook at a glance



When will trade
improve?

The pace of trade contraction appears to be slowing

Vanguard's leading index suggests that global trade will continue what has been a sharp contraction as the third quarter begins. However, with global economies likely to accelerate after second-quarter pandemic-induced slowdowns, we're looking for signs that trade conditions may soon begin to improve.

- Meanwhile, U.S.-China tensions remain a risk we foresee potentially bubbling up at any time. The U.S. administration suggested last week that a Phase Two trade deal wasn't in the offing, even as China struggles to fulfill terms of a Phase One deal amid pandemic-related obstacles.



Disinflation
remains a risk

Inflation will remain below the Fed's target range

Vanguard believes that as states reopen and activities resume, inflation could trend gradually higher but remain well below the Fed's 2% target range in the medium term.

- Risks of disinflation—a slowing in the pace of inflation—will persist if disease outbreaks and containment efforts curtail demand.



Unemployment
to remain high

Job gains continued in the United States in June

The U.S. unemployment rate fell to 11.1%. Many of the gains, however, reflected people returning to work in leisure and hospitality.

- We expect the unemployment rate to remain elevated around current levels throughout the rest of the year, as we don't anticipate a V-shaped recovery in U.S. employment or the economy.

Vanguard Updates

The right
partner
at the
right time

Vanguard[®]

Investment management

Plan design

Participant behavior

Infosys[®]

Human-centered design

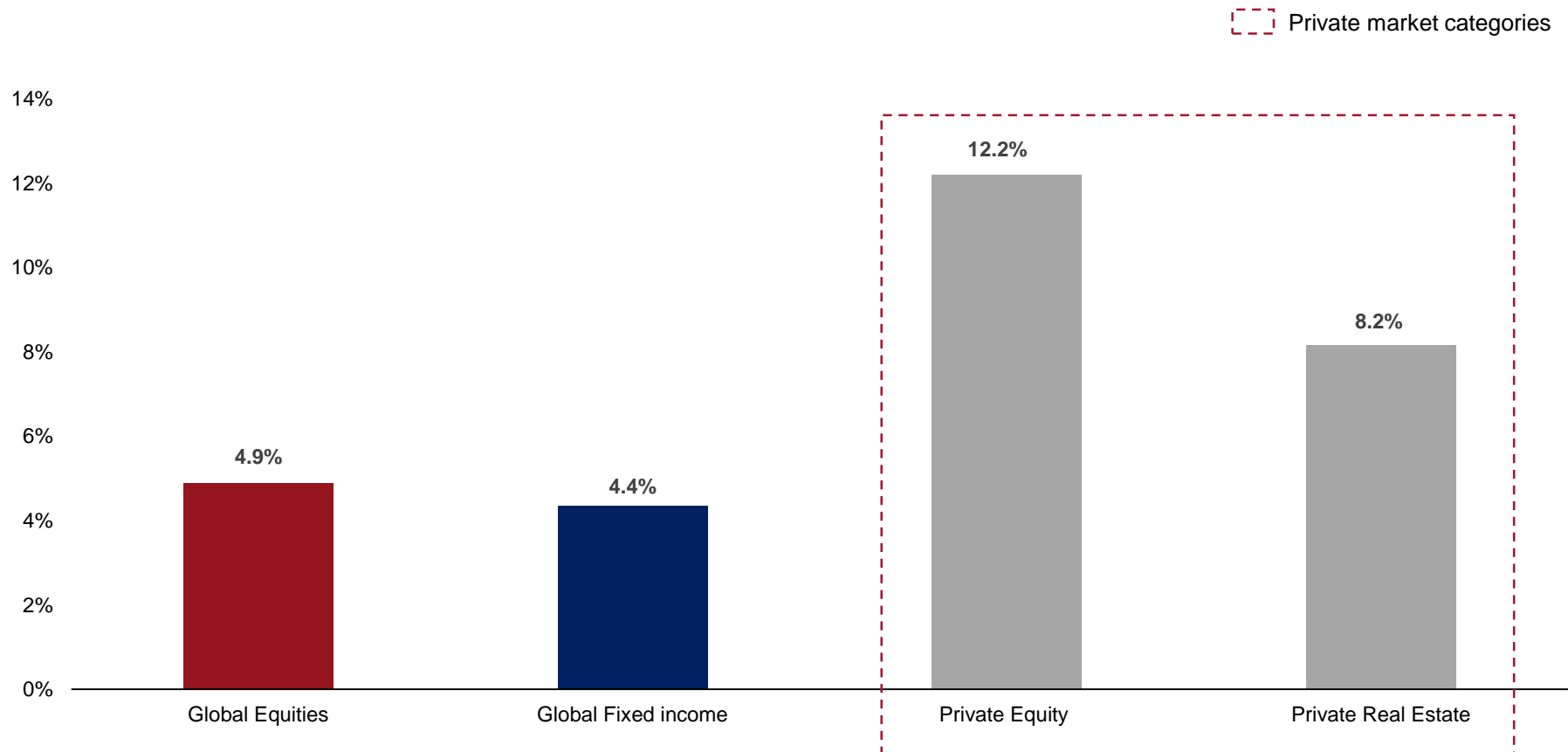
Digital innovation

Technical execution

**Accelerate digital transformation
Improve retirement outcomes**

Private equity sustained strong performance relative to traditional asset classes

Twenty-year annualized returns by category through September 2019



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.

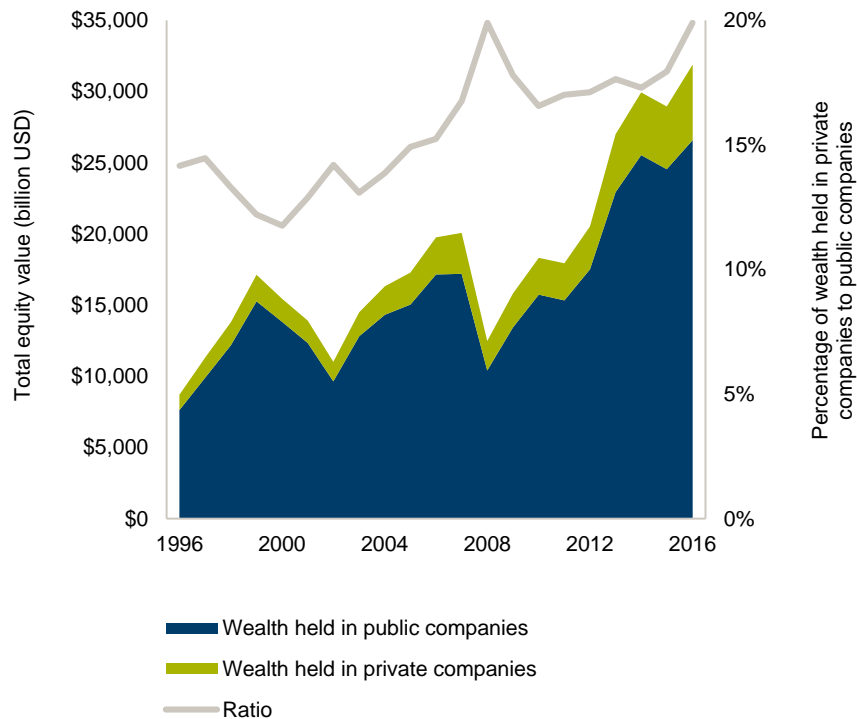
Source: Cambridge Associate LLC, NFI-ODCE, Morningstar.

Global Equities returns are represented by the MSCI World Index (net). Global Fixed Income is represented by Bloomberg Barclays Global Aggregate Index (net). The Private Equity index is a horizon calculation based on data compiled from 2,220 private equity funds, including fully liquidated partnerships, formed between 1986 and 2019.

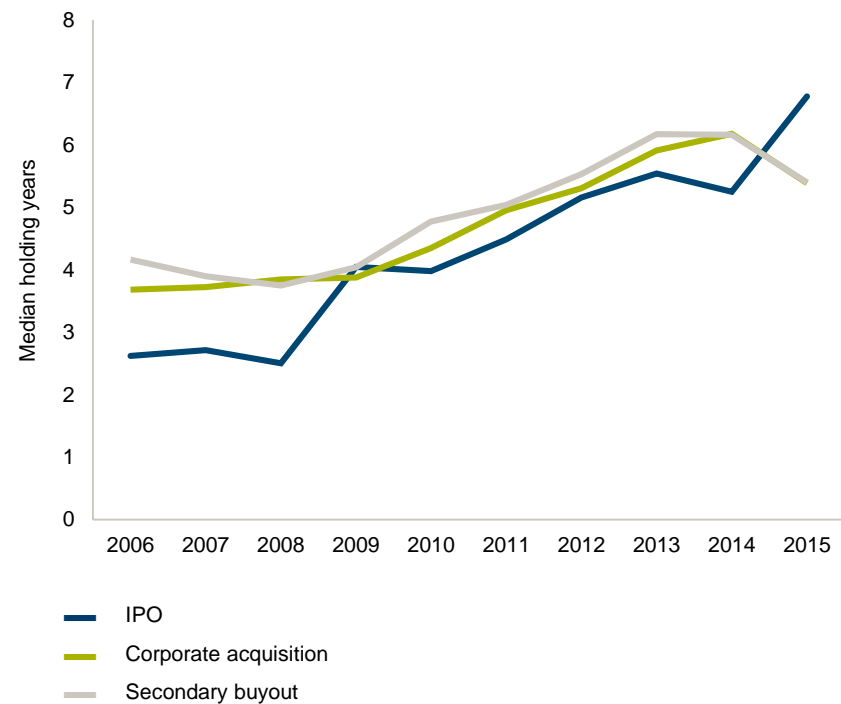
Private indexes are pooled horizon internal rate of return (IRR) calculations, net of fees, expenses, and carried interest. The timing and magnitude of fund cash flows are integral to the IRR performance calculation. Public indexes are average annual compounded return (AACR) calculations which are time weighted measures over the specified time horizon, and are shown for reference and directional purposes only. Due to the fundamental differences between the two calculations, direct comparison of IRRs to AACRs is not recommended.

The opportunity for private equity has evolved over time

The size of private equity has been growing relative to public equity



Private companies are staying private longer

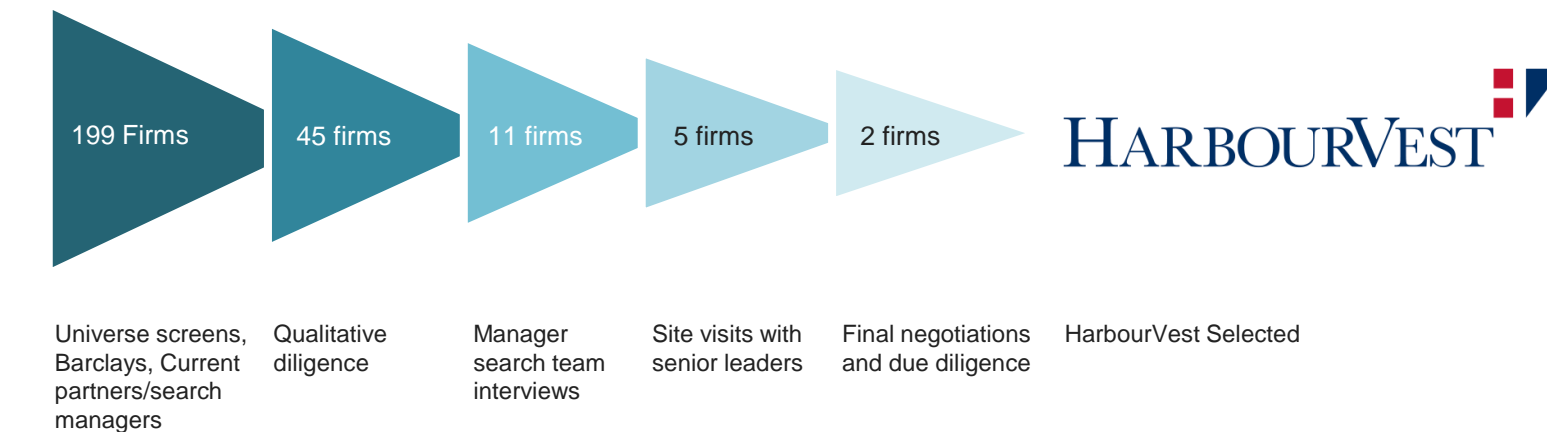


Source: Vanguard calculation based on the Flow of Fund data from the Federal Reserve.
Note: Data on closely held companies started from fourth quarter 1996.

Source: Vanguard calculation based on data from Pitchbook.
Note: The oldest data from open-source Pitchbook data is 2006. The chart represents the three options for the private equity to exit, IPO, corporate acquisition, and secondary buyout.

Vanguard engaged in a thorough search process to narrow our opportunity set to HarbourVest, the firm we believe will generate the best results for our clients

The process leveraged Vanguard's expertise in public manager search while also assessing factors specific to private investing, such as portfolio construction, client support, and alignment with Vanguard



Drivers for investment success

Firm	<ul style="list-style-type: none"> Ethics Stability Ownership Structure Account and asset trends Incentives
People	<ul style="list-style-type: none"> Deep investment team Succession/contingency Limited turnover of key professionals Tenure and experience
Philosophy	<ul style="list-style-type: none"> Enduring Shared by investment professionals Easily articulated
Process	<ul style="list-style-type: none"> Understandable Stable/proven Repeatable

Results

<p>Portfolio</p> <ul style="list-style-type: none"> Clear reflection of philosophy and process Characteristics consistent with expectations Risk profile is aligned with investment strategy <p>Performance</p> <ul style="list-style-type: none"> Long-term history of competitive results versus benchmarks and peers Performance consistent with investment approach
--



HarbourVest Firm Overview

HarbourVest at-a-glance

\$68+ billion
total AUM
across all
strategies



Private markets
specialists in
equity, credit,
and real assets



Expertise
in primary,
secondary, direct
co-investments,
credit, and real
assets

600+
colleagues
over **125**
investment
professionals



25 years
average industry
experience of
managing
directors



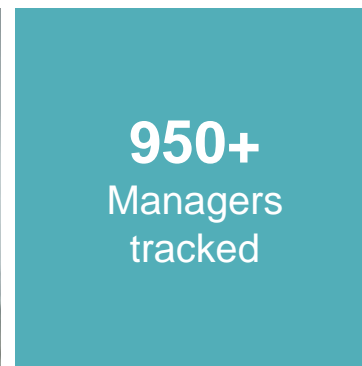
700+
advisory
board seats



Strong track
record over
35+ years



950+
Managers
tracked



Why HarbourVest Partners?



The firm's goal is to be your partner of choice by **delivering innovative investable opportunities** and strong results in private equity, credit, and real assets.



- Independent firm
- Integrated platform
- Global scale
- Diverse solutions
- Market insights

Five pillars drive HarbourVest's competitive advantage in private markets.



Vanguard HarbourVest 2020 Private Equity Fund

Vanguard HarbourVest 2020 Private Equity Fund Overview

Turnkey Investment Solution

Comprehensive portfolio offers investors **core exposure** to a targeted mix of primary partnerships, secondary investments, and direct co-investments

Leverages HarbourVest Platform

Global expertise and **demonstrated performance** across all investment strategies

Long-term relationships with experienced managers yield **differentiated access** to investment opportunities

Broadly Diversified Portfolio

Focused on **managers in proven markets**, primarily US and Europe

Seeking **opportunities** across buyout, growth equity, venture and special situations investments

Annual Investment Opportunity

Structured to offer investors the opportunity to commit to a global private equity solution on an **annual basis**

Constructed to Accelerate Returns

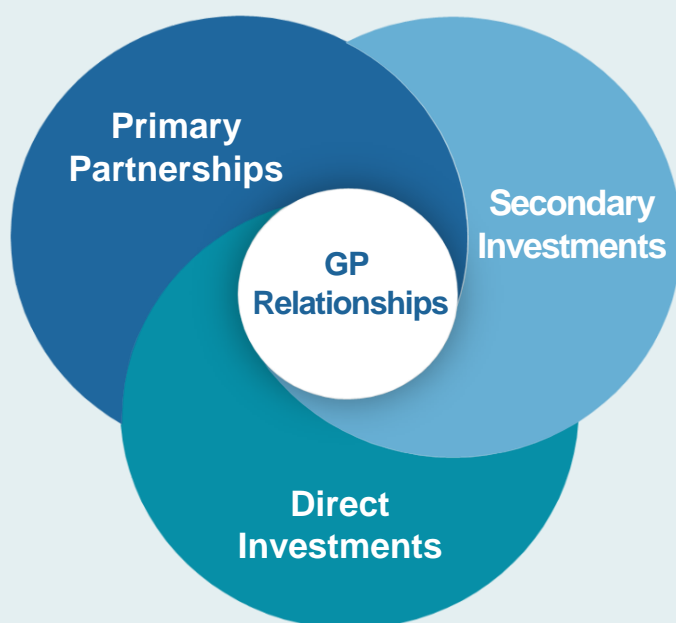
Portfolio construction and expected commitment pace designed to **expedite capital deployment**

Structured to seek short and long-term outperformance compared to public markets

An investment in the Fund involves a high degree of risk and therefore, should be undertaken only by prospective investors capable of evaluating the risks of the Fund and bearing the risks such an investment represents. Prospective investors should pay particular attention to the information under the heading "Certain Investment Considerations and Risks" in the offering memorandum. There can be no assurance that the Fund will be able to achieve its investment objectives or that the investors will receive a return on their capital.

Strategy incorporates core platform strengths

Integrated investment platform provides significant advantages



Primary

What

- Commitments to new funds at their initial formation date
- Targeted exposure to hard-to-access managers

Why

- Foundation of a private equity program
- Targeted portfolio construction
- Access to leading managers
- Long-term driver of returns

Secondary

What

- Purchases of existing private equity assets by acquiring positions in formed funds or portfolios of direct investments

Why

- Diversification across prior vintage years
- Exposure to mature portfolios
- J-curve mitigation and early liquidity

Direct co-investment

What

- Investment directly into operating companies alongside other general partners

Why

- Lower cost access to private equity
- Opportunity to generate alpha

Vanguard HarbourVest 2020 Fund fees

Detailed expected average fees for the total fund over full life cycle

Vanguard Private Equity offer		
	Management fee	Carry
Underlying GPs*	1.03%	17%
HarbourVest fees**	0.21%	5%
Vanguard fee†	0.20%	0%
Total	1.44%	22%

Fund of funds industry average		Direct GP access	
Management fee	Carry	Management fee	Carry
1.03%	17%	1.50%	20%
0.85%	8%	—	—
—	—	—	—
1.88%	25%	1.50%	20%

Assumptions for underlying manager fees

	Fund weight	Estimated management fee for underlying GPs	Carry	Weighted management fee	Weighted carry	HarbourVest management fee	HarbourVest carry	Weighted carry
Primary investments	60%	1.50%	20%	0.90%	12%	0.21%	—	—
Secondaries	25%	0.50%	20%	0.13%	5%	0.21% (above 8% IRR hurdle rate)	12.5%	~3%
Co-investments	15%	0.00%	0%	0.00%	0%	0.21% (above 8% IRR hurdle rate)	12.5%	~2%
Fund fees				1.03%	17%	0.21%		5.00%

* Weighted average of underlying GP fees in each offer. Vanguard Private Equity Offer and Industry Average – Comprehensive Offer assume 60% allocation to primary investments, 25% to secondaries, and 15% to co-investments.

** Management fees reflect assumptions for fees paid to comprehensive solution provider. Fee levels for HarbourVest and Vanguard partnership are not representative of actual client experience. Industry Average – Comprehensive Offer fee levels.

† Vanguard fee will be 0.20% for clients that commit less than \$10 Million. Management Fees are based on capital committed to the fund.

Source: Preqin.

Additional information (HarbourVest Model Track Record)

In considering the prior performance information contained herein, prospective investors should bear in mind that past performance is not necessarily indicative of future results, and there can be no assurance that the Fund will achieve comparable results or be able to implement its investment strategy. Additionally, the funds that made these investments have different terms and investment objectives than the Vanguard HarbourVest 2020 Private Equity Fund (the "Fund").

The pro-forma performance information is presented on a hypothetical net basis based on the proposed allocation (60% primary, 25% secondary, 15% direct co-investment) and terms of the Fund. Each portfolio is based on the actual cash flows of investments made by HarbourVest during the period specified. The cash flows are weighted and presented as a hypothetical portfolio based on 60% primary (made up of 7.5% Asia buyout, 2.5% Asia venture, 22.5% Europe buyout, 2.5% Europe venture, 40% U.S. buyout, 15% U.S. venture, and 10% special situations), 25% secondary (made up of all global secondary investments), and 15% direct co-investment (made up of all global direct co-investments). An investor's return in a specific HarbourVest fund would have been different. The actual net return to limited partners (Net L.P. IRR) of HarbourVest's prior funds is available later in this presentation.

In vintage years without actual primary investments in targeted sectors (Asia buyout, Asia venture, Europe venture, special situations), the portfolio construction allocations to these sectors were applied on a pro rata weighted basis to other primary investment sectors for that vintage year. Model assumes each portfolio participates in every investment opportunity on a pro rata basis based on actual aggregate HarbourVest commitments for each vintage year. Actual investment opportunities may be limited due to scarcity and desired portfolio construction; creating a more concentrated portfolio in comparison to the model. The incremental benefit of portfolio diversification may become limited at the higher range of underlying partnership / investments.

Cash flows are adjusted for fees, carried interest, organizational costs, and other fund level operating expenses. Expenses are estimates based on past experience with similar funds. The pro-forma net returns are calculated using monthly cash flows to and from the investments managed by HarbourVest, net of management fees and general partner carried interest under the proposed Fund terms. These returns do not represent the performance of any specific fund or the return to limited partners. Assumes an 21 bps average annual management fee. Assumes that the management fee of the Fund concludes after year 14 and no further management fee is charged. Includes 12.5% carried interest on net secondary investment profits once an 8% secondary investment IRR is generated and 12.5% carried interest on net direct co-investment profits, once an 8% direct co-investment IRR is generated. Other profits and losses are allocated to all partners in proportion to their respective sharing percentages. The carried interest is paid to the General Partner once capital is returned to the Limited Partners. HarbourVest vintage classification is based on the year in which capital was first funded to each underlying fund (for primary fund investments) or the year of HarbourVest's purchase (for secondary investments and direct co-investments).

Composite Criteria

Primary Investments – Based on the cash flows of primary investments made by HarbourVest with vintages between 2000 – 2018, excluding all real asset investments and those investments made by funds managed by HarbourVest Partners (Canada) Limited (including its related companion funds, as applicable).

The cash flows are weighted based on the expected allocation of the Fund's primary investments, which is 7.5% Asia buyout, 2.5% Asia venture, 22.5% Europe buyout, 2.5% Europe venture, 40% U.S. buyout, 15% U.S. venture, and 10% special situations. The weighting of the model portfolios does not represent the proportion of investments made by HarbourVest funds during each applicable period.

Secondary Investments – Based on the cash flows of all secondary investments made by HarbourVest- funds and applicable accounts during the vintage years noted, excluding all real asset investments.

Direct Co-investments – Based on the cash flows of direct co-investments made by HarbourVest funds and applicable accounts during the vintage years noted, excluding all real asset investments and those investments made by funds managed by HarbourVest Partners (Canada) Limited.

This performance excludes custom accounts that may make investments outside of HarbourVest's core co-investment strategy (e.g. industry, sourcing, return profile). For purposes of this document, co-investments are defined as (i) buyout, recapitalization, and special situation investments, (ii) expansion capital, growth equity, or other venture capital investment in companies with greater than \$7.5 million in trailing 12 month revenues at the time of investment, or (iii) mezzanine investments. Early stage investments, defined as those companies with revenues less than \$7.5 million at the time of initial investment, which are outside of the focus of the Fund are not included in the figures above. If early stage investments were included, the performance would be lower.

Additional important information

Any data presented about investments prior to 1998 is related to transactions that occurred when the HarbourVest team was affiliated with Hancock Venture Partners, Inc.

The source of the performance information is HarbourVest. In considering the performance information contained herein, prospective investors should bear in mind that past performance is not a reliable indicator of future results, and there can be no assurance that an investment sponsored (or an account managed) by HarbourVest will achieve comparable results or be able to implement its investment strategy or meet its performance objectives. The funds that made these investments may have had different terms and investment objectives than those proposed or modeled herein.

The foregoing performance information includes realized and unrealized investments. Unrealized investments are valued by HarbourVest in accordance with the valuation guidelines contained in the applicable partnership agreement. Actual realized returns on unrealized investments will depend on, among other factors, future operating results, the value of the assets and market conditions at the time of disposition, any related transaction costs, and the timing and manner of sale, all of which may differ from the assumptions on which the valuations used in prior performance data contained herein are based. Accordingly, the actual realized returns on these unrealized investments may differ materially from returns indicated herein.

In certain cases, a HarbourVest fund or account, or the partnerships in which it invests, may utilize a credit facility or other third-party financing. This is generally to bridge capital calls from limited partners or to fund a portion of an investment and may also be used to facilitate transactions involving the recapitalization of portfolio investments. This may make the resulting IRR and multiples higher or lower than the IRR and multiples that would have been presented had drawdowns from partners or available cash been initially used to acquire or fund the investment.

IRRs are calculated from the date of a fund's first cash flow from a limited partner, which may include capital contributions in connection with fund formation, as may occur with certain AIF-Related Funds (as defined below), and therefore can be earlier than the date of the first capital call from a limited partner for the purpose of investment. The start date for IRR calculations can also be later than the date of initial investment when a credit facility or other third-party financing is used to fund such investment.

Performance is expressed in US dollars, unless otherwise noted. Returns do not include the effect of any withholding taxes. Cash flows were converted to US dollars at historic daily exchange rates, unless otherwise indicated. The return to investors whose local currency is not the US dollar may increase or decrease as a result of currency fluctuations.

1. **Net Performance Returns** - DPI (Distributions / Paid-In Capital), TVPI (Total Value / Paid-In Capital), and Net IRR (Internal Rate of Return) through the applicable date are the returns to limited partners after all management fees, commissions, fund operating expenses, and carried interest. These returns reflect the combined return for all limited partners in a fund and may not reflect an individual limited partner's actual return. The Net IRR is calculated using daily cash flows to and from limited partners. In this calculation, the final cash flow to limited partners is the fair market value of all limited partners' capital accounts at the applicable date as determined by the general partner of the respective HarbourVest fund or account in accordance with the valuation policy. The net multiples (DPI and TVPI) are calculated based on the same cash flows. See note 8 below for additional disclosures related to Fees and Expenses of a fund.
2. **Gross Performance Returns** - This information (Distributed / Funded, Total Value / Funded, TV/TC (Total Value / Total Cost), Gross Portfolio IRR, and Gross IRR), if shown, is presented on a gross basis and reflects the performance of the investment portfolio, including primary fund investments, secondary investments, and/or direct co-investments. Gross Portfolio IRR represents the annual return calculated using monthly cash flows from the Fund(s) to and from the various partnerships or companies in which the Fund(s) invested during the period specified. These returns reflect the fees, expenses, and carried interest of the primary investments, secondary investments, and co-investments, as applicable, but do not reflect the management fees, carried interest, and other expenses borne by investors in the Fund(s), which will reduce returns. See note 8 below for additional disclosures related to fees and expenses of a Fund.

Notes continued on next page.

Additional important information

3. **Portfolio Company Performance** – This information, if shown, is based on the cost and value of underlying company investments within the primary and secondary investment portfolios of the Fund(s). These returns do not reflect the fees, expenses, and carried interest of the partnership investments of the Fund(s), which will reduce returns. Performance may be aggregated when a company is held through multiple primary and secondary investments. These returns do not represent the performance of any specific Fund or the return to limited partners of any specific Fund. As a result, portfolio company performance returns are considered model performance. See notes 6 and 8 below for additional disclosures related to model performance and fees and expenses of a Fund, respectively.
4. **Public Market Comparison** – The performance presented is compared to broad-based securities market indices in order to provide for a public market comparison. This information, if shown, represents adjusted model performance of each index as if the respective index had been purchased and sold at the time of the limited partners' capital calls and distributions, with the remainder held at the date noted.

Dividends are not reinvested. The returns of the public market comparison presented herein do not represent the returns that any investor actually attained. Investments cannot be made directly into an index. Certain assumptions have been made for modeling purposes and are unlikely to be realized. No representation or warranty is made as to the reasonableness of the assumptions made or that all assumptions used in achieving the returns have been stated or fully considered. Changes in the assumptions may have a material impact on the adjusted returns presented. Under this methodology, the index performance is adjusted to reflect that capital calls for the purchase of the public market index are the same as the capital calls for the applicable HarbourVest fund(s). The distributions for the sales of the public market index are scaled to represent the same proportion of the fund's NAV at the time of the distribution. For example, if the fund distributes 5% of NAV, then 5% of the index NAV is distributed. Thus, the index returns presented are not actual index returns, but adjusted model returns. See note 6 for additional disclosures related to model performance.

In certain instances, where indicated as such herein, the comparison is based on the PME+ (public market equivalent) method as described in an article titled, "Beating the Public Market," by Christophe Rouvinez, as published in the Private Equity International in December 2003 / January 2004. When using this methodology, both the Fund and the adjusted index are assumed to have the same ending NAV. The ending NAV for the adjusted index is derived by scaling the distributions by a constant scaling factor, while preserving the overall cash flow pattern.

The MSCI AC World® Index (ACWI) is designed to measure the performance of publicly-traded equity securities in global developed and emerging markets. The MSCI ACWI Index is maintained by Morgan Stanley Capital International ("MSCI") and has historically captured approximately 85% coverage of the free float-adjusted market capitalization of its publicly-traded global equity opportunity set.

The MSCI AC World® (ACWI) Ex-US Index is designed to measure the performance of publicly-traded equity securities in global developed and emerging markets excluding the US. The MSCI ACWI Ex-US Index is maintained by MSCI and has historically captured approximately 85% coverage of the free float-adjusted market capitalization of its publicly-traded global equity opportunity set outside the US.

The MSCI EAFE® Index is designed to measure the performance of publicly-traded large and mid-capitalization equity securities across developed markets, including countries in Europe, Australasia, and the Far East, and excluding the US and Canada. The MSCI EAFE Index is maintained by MSCI and has historically captured approximately 85% coverage of the free float-adjusted market capitalization of publicly-traded equities in each included country.

The S&P 500® Index is designed to measure the performance of publicly-traded equity securities of the large capitalization sector of the US market and includes 500 large companies having common stock listed on the New York Stock Exchange or Nasdaq Stock Market. The S&P 500 Index is maintained by Standard & Poor's ("S&P") and has historically captured approximately 80% coverage of available market capitalization of publicly-traded equities in the US market.

Notes continued on next page.

Additional important information

The Russell 2000® Index is designed to measure the performance of publicly-traded equity securities of the small capitalization sector of the US market and includes the 2,000 smallest companies in the Russell 3000® Index. These indexes are maintained by FTSE Russell, a subsidiary of the London Stock Exchange Group. The Russell 3000 Index consists of the 3,000 largest publicly-listed US companies, and has historically captured approximately 98% coverage of the total capitalization of the entire US stock market.

The JP Morgan Domestic High Yield Index is designed to mirror the investable universe of the U.S. dollar domestic high yield corporate debt market. The index is maintained by JP Morgan and has historically captured the performance of US and Canadian issues over \$75 million that have a credit rating of BB or lower.

The adjusted public market indexes shown are not intended to, and do not, parallel the risk, investment strategy, or investment characteristics of a HarbourVest fund(s). The securities comprising the public market indexes have substantially different characteristics than the investments held by a HarbourVest fund(s), and accordingly a direct comparison may not be meaningful. The public market comparison is shown for illustrative purposes only. The adjusted indexes are shown to demonstrate the approximate returns an investor may have received had the investor invested in certain publicly-traded equity securities in lieu of a HarbourVest fund(s) or account(s) or the investments made by HarbourVest.

Bloomberg is the source of the index data contained or reflected in this material. Bloomberg, MSCI, S&P, and FTSE Russell are the owners of the index data contained or reflected in this material and all trademarks and copyrights related thereto. This is HarbourVest's presentation of the data. Bloomberg, MSCI, S&P, and FTSE Russell are not responsible for the calculations conducted by HarbourVest, the formatting or configuration of this material, or for any inaccuracy in presentation thereof.

5. Vintage Years - HarbourVest vintage classification is based on the year in which capital was first funded to each underlying fund (for primary fund investments) or the year of HarbourVest's purchase (for secondary investments).
6. Monte Carlo Simulations - These model (hypothetical) portfolios, if shown, are intended for illustrative purposes only. Performance information for each hypothetical portfolio utilized a Monte Carlo Simulation and are based on the actual cash flows of a proprietary data set that includes partnership investments made by Funds, along with partnership data from external sources. The capital calls and distribution data is based on historic partnership investment cash flows, but does not represent the actual experience of any investor or Fund. The results of the simulation are impacted by an uneven representation of funds with different vintage years, sizes, managers, and strategies, and a limited pool of investment cash flow data. The actual pace and timing of cash flows is likely to be different and will be highly dependent on the underlying partnerships' commitment pace, the types of investments made by the Fund(s), market conditions, and terms of any relevant management agreements. The results presented are based entirely on the output from numerous mathematical simulations. The simulations are unconstrained by the fund size, market opportunity, and minimum commitment amount, and do not take into account the practical aspects of raising and managing a fund. The simulated hypothetical portfolio results should be used solely as a guide and should not be relied upon to manage your investments or make investment decisions.
7. Model Performance - Model performance results are inherently limited and should not be relied upon as indicators of future performance. Individual fund and strategy performance can be better or worse than the model. No investor received the indicated model performance. Certain assumptions have been made for modeling purposes. No representation or warranty is made as to the reasonableness of the assumptions made. Changes in the assumptions may have a material impact on the hypothetical returns presented.

Different model scenarios will provide different results. While the model portfolio may consist of investments made by HarbourVest during the relevant period(s), it does not reflect an actual portfolio managed by HarbourVest during the relevant period(s) and does not represent the impact that material economic and market factors might have had on HarbourVest's decision making if HarbourVest had been managing a fund that incorporated the investment strategy shown during the specified period(s).

Notes continued on next page.

Additional important information

In addition, the HarbourVest fund(s) had investment results materially different from the results portrayed in the model portfolio during the relevant period(s). The fund(s)' actual investments may have substantially different terms than those reflected in the model portfolio. No representation is made that any Fund will or is likely to achieve returns similar to those presented, and there can be no assurance that the fund(s) or HarbourVest will achieve profits or avoid incurring substantial losses. Other periods selected for the model portfolios may have different results, including losses. Current model performance may differ from that shown.

Model may assume each portfolio participates in every investment opportunity on a pro rata basis based on actual aggregate HarbourVest commitments for each vintage year. Actual investment opportunities may be limited due to scarcity and desired portfolio construction; creating a more concentrated portfolio in comparison to the model. The incremental benefit of portfolio diversification may become limited at the higher range of underlying partnership / investments.

The following is the criteria used when showing model portfolio performance that includes the following investment types:

Primary Investments – Based on the cash flows of all primary investments (or a subset as noted) made by fund(s) during the period(s) specified, with the exception of custom accounts that made investments primarily in emerging venture capital managers, emerging managers, diverse managers, or state-focused managers, as these strategies are outside of HarbourVest's core focus.

Secondary Investments – Based on the cash flows of all secondary investments (or a subset as noted) made by fund(s) during the period(s) specified.

Direct Co-investments – Based on the cash flows of all direct co-investments (or a subset as noted) made by fund(s) during the period(s) specified. This performance excludes custom accounts that may make investments outside of HarbourVest's core co-investment strategy (e.g., industry, sourcing, return profile). Direct co-investments are defined as: (i) buyout, recapitalization, and special situation investments; (ii) expansion capital, growth equity, or other venture capital investment in companies with greater than \$7.5 million in trailing 12-month revenues at the time of investment; or (iii) mezzanine investments. Early stage investments, defined as those companies with revenues less than \$7.5 million at the time of initial investment, which are outside of the focus of the fund, are also not included in the model portfolio returns shown. If early stage investments were included in the model portfolio, returns would be lower.

8. **Fees and Expenses** - Actual management fees and carried interest will vary and are established in negotiations with the limited partners of a Fund or separate account client. Management fees may range from an average of 0.1% to 1.25% per year of committed, called, or invested capital over the expected life of the Fund, pursuant to the limited partnership agreement or investment management agreement. Fees for Funds in extension years may be reduced, including to nil. Fund investors will typically bear all the costs and expenses relating to the operations of a Fund and its general partners (or similar managing fiduciary). A Fund shall bear its pro rata share of any such expenses incurred in connection with any portfolio investment to the extent the same portfolio investment is being made by other Funds. Organization expenses of a Fund will also typically be borne by Fund investors. When a Fund is generally expected to invest alongside a Fund primarily intended for European-based investors, which takes into account the regulatory requirements of the Alternative Investment Fund Managers Directive (an "AIF Related Fund"), organization expenses may be aggregated and allocated pro-rata between a Fund and its AIF Related Fund based on the relative commitments of the partners of the Fund and the partners of its AIF Related Fund (unless HarbourVest, as general partner, determines in good faith that a different share is appropriate). The specific payment terms and other conditions of the management fees, carried interest, and other expenses of a Fund are set forth in the governing documents of the Fund. Fees and expenses are also described in HarbourVest's Form ADV, Part 2A brochure.

Notes continued on next page.

Additional important information

Gross performance returns, if shown, are presented before management fees, carried interest, and other expenses borne by investors in the Fund(s). An actual portfolio would bear such fees and expenses. If such fees and expenses were deducted from performance, returns would be lower. For example, if a fund appreciated by 10% a year for five years, the total annualized return for five years prior to deducting fees and expenses at the end of the five year period would be 10%. If total fund fees and expenses were 1% for each of the five years, the total annualized return of the fund for five years at the end of the five-year period would be 8.90%.

9. Private Equity Index Data - Unless otherwise indicated, all private equity fund benchmark data reflects the fees, carried interest, and other expenses of the funds included in the benchmark. Please note that Fund returns would be reduced by the fees, carried interest, and other expenses borne by investors in the Fund. Such fees, carried interest, and other expenses may be higher or lower than those of the funds included in the benchmark. Burgiss (unless otherwise noted) is the source and owner of any private equity index data contained or reflected in this material and all trademarks and copyrights related thereto. The material may contain confidential information and unauthorized use, disclosure, copying, dissemination, or redistribution is strictly prohibited. This is HarbourVest's presentation of the data. Burgiss is not responsible for the calculations conducted by HarbourVest, the formatting or configuration of this material, or for any inaccuracy in presentation thereof.

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Additional important information

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Certain information contained herein (including financial information and information relating to investments) has been obtained from published and non-published sources. Such information has not been independently verified by HarbourVest. Except where otherwise indicated herein, the information provided herein is based on matters as they exist as of the date of preparation and not as of any future date, and will not be updated or otherwise revised to reflect information that subsequently becomes available, or circumstances existing or changes occurring after the date hereof. Any forecast provided herein is based on HarbourVest's opinion of the market as of the date of preparation and is subject to change, dependent on future changes in the market.

In considering any performance data contained herein, you should bear in mind that past performance is not a reliable indicator of future results. Certain information contained herein constitutes forward-looking statements, which can be identified by the use of terms such as "may", "will", "should", "expect", "anticipate", "project", "estimate", "intend", "continue", or "believe" (or the negatives thereof) or other variations thereof. Due to various risks and uncertainties, including those discussed above, actual events or results or actual performance of the Fund may differ materially from those reflected or contemplated in such forward-looking statements. As a result, investors should not rely on such forward-looking statements in making their investment decisions.

None of the information contained herein has been filed with the Securities and Exchange Commission, any securities administrator under any state securities laws, or any other governmental or self-regulatory authority. No governmental authority has passed on the merits of the offering of interests in the Fund or the adequacy of the information contained herein. Any representation to the contrary is unlawful.

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.

The Vanguard Lifecycle Model (VLCM) is designed to identify the product design that represents the best investment solution for a theoretical, representative investor who uses the target-date funds to accumulate wealth for retirement. The VLCM generates an optimal custom glide path for a participant population by assessing the trade-offs between the expected (median) wealth accumulation and the uncertainty about that wealth outcome, for thousands of potential glide paths. The VLCM does this by combining two set of inputs: the asset class return projections from the VCMM and the average characteristics of the participant population. Along with the optimal custom glide path, the VLCM generates a wide range of portfolio metrics such as a distribution of potential wealth accumulation outcomes, risk and return distributions for the asset allocation, and probability of ruin, such as the odds of participants depleting their wealth by age 95.

The VLCM inherits the distributional forecasting framework of the VCMM and applies to it the calculation of wealth outcomes from any given portfolio.

The most impactful drivers of glide path changes within the VLCM tend to be risk aversion, the presence of a defined benefit plan, retirement age, savings rate and starting compensation. The VLCM chooses among glide paths by scoring them according to the utility function described and choosing the one with the highest score. The VLCM does not optimize the levels of spending and contribution rates. Rather, the VLCM optimizes the glide path for a given customizable level of spending, growth rate of contributions and other plan sponsor characteristics.

A full dynamic stochastic life-cycle model, including optimization of a savings strategy and dynamic spending in retirement is beyond the scope of this framework.

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.

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 or Trusts are subject to the risks of their underlying funds. The year in the fund 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 or trust will gradually shift its emphasis from more aggressive investments to more conservative ones based on its target date. An investment in the Target Retirement Fund or Trust is not guaranteed at any time, including on or after the target date.

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.

Factor funds are subject to investment style risk, which is the chance that returns from the types of stocks in which the fund invests will trail returns from U.S. stock markets. Factor funds are subject to manager risk, which is the chance that poor security selection will cause the fund to underperform relevant benchmarks or other funds with a similar investment objective.

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