

Prepared for

Community Foundation for Muskegon County

*Serving the Community Foundations of Muskegon,
Mason, and Oceana Counties*

Portfolio review

August 14, 2017



Vanguard

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Agenda

- I. Capital markets recap
- II. Portfolio review
- III. Portfolio reallocation update
- IV. Vanguard Total Bond Market Index Fund overview
- V. Vanguard Total International Stock Index Fund overview
- VI. Vanguard's economic and investment outlook
- VII. Fee analysis
Appendix
– Fund details

Presented by:

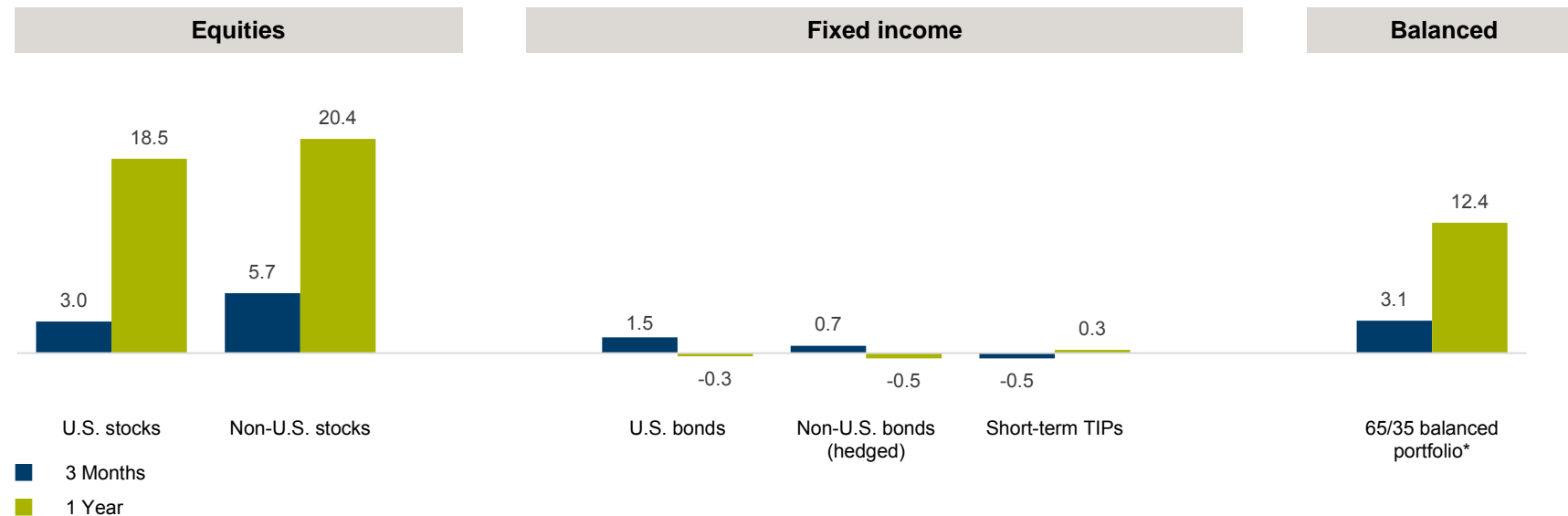
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Vanguard Institutional Advisory Services®

Capital markets recap

Global equities continue upward trend with less pace, while bonds remain mixed

- U.S. equities posted their seventh consecutive positive quarter amidst distractions with the administration and some uncertainty around the ability to enact fiscal stimulus
- International equities have outperformed U.S. equities over the last 3 and 12 months as geopolitical risks steadied and the dollar weakened
- Global fixed income posted slightly positive returns over the last 3 months as the yield curve slightly flattened, with short- rates rising and longer-term rates falling

Global market returns as of June 30, 2017 (%)



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

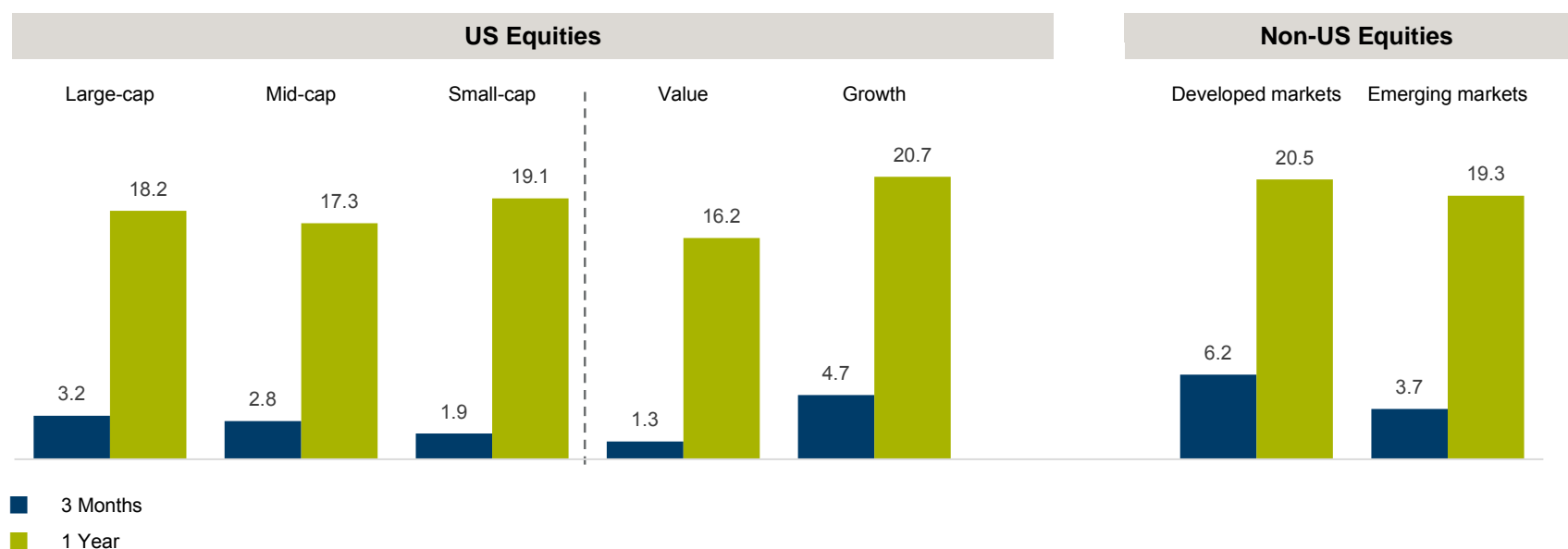
US Stocks (CRSP US Total Market Index), Non-US Stocks (FTSE Global All-Cap ex-US Index), US Bonds (Barclays US Aggregate Float Adjusted Index), Non-US Bonds hedged (Barclays Global Aggregate ex-USD Float Adjusted RIC Capped Index hedged), Short-term TIPs (Barclays US 0-5 Year TIPS Index).

* 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).

Positive global equity returns across market capitalizations and styles

- Small cap stocks delivered slightly higher 12 month returns in the U.S. across all market caps while large caps led modestly during the latest quarter
- U.S. growth stocks extended their rally this year by outperforming value stocks for the last 3 and 12 months, led by strong results in Information Technology
- International equities have had a positive year for both developed and emerging markets investors

Global equity market returns as of June 30, 2017 (%)



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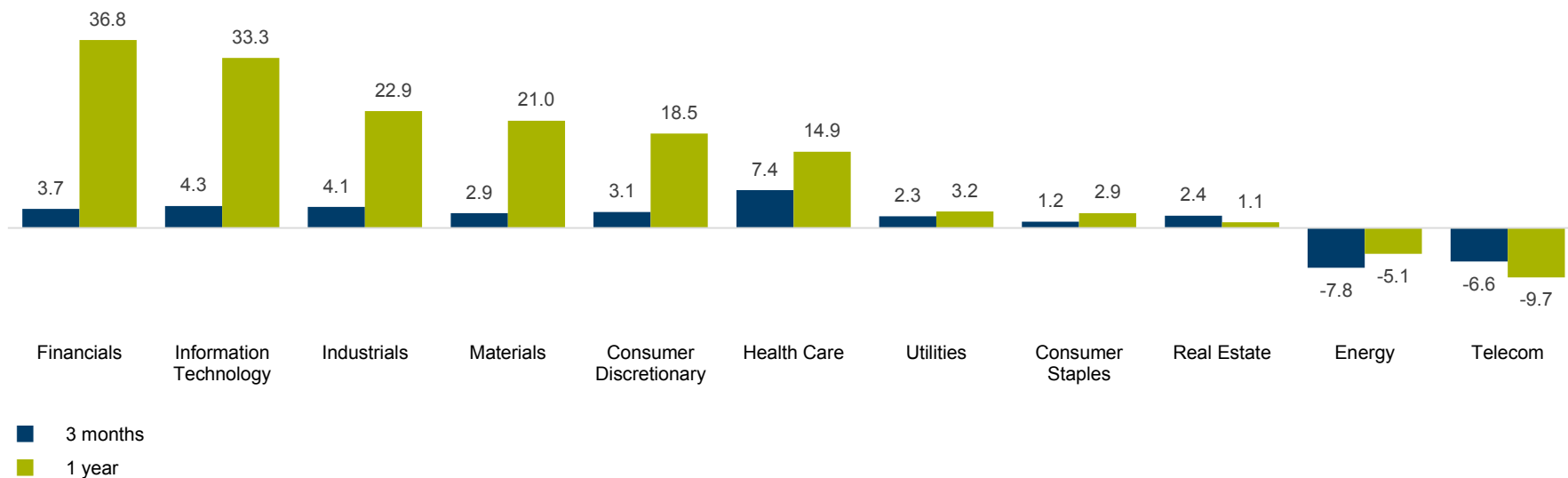
Sources: Barclays, FTSE, MSCI, Russell, and Dow Jones.

Large-cap (CRSP US Large Cap Index), Mid-cap (CRSP US Mid Cap Index), Small-cap (CRSP US Small Cap Index); Value (Russell 3000 Value Index), Growth (Russell 3000 Growth Index); Developed markets (FTSE Developed All Cap ex-US Index), Emerging markets (FTSE Emerging Markets All Cap China A Inclusion Index)

U.S. sector performance – majority of sectors positive for trailing 12 months

- Financials were the best performing sector over the trailing 12 month returns on the prospects of faster economic growth and higher rates
- Energy has struggled in the trailing 3 and 12 months as oil prices have come under pressure
- Healthcare was the best performing sector for the second quarter led by a strong performance in biotechnology stocks

U.S. equity sector returns as of June 30, 2017 (%)



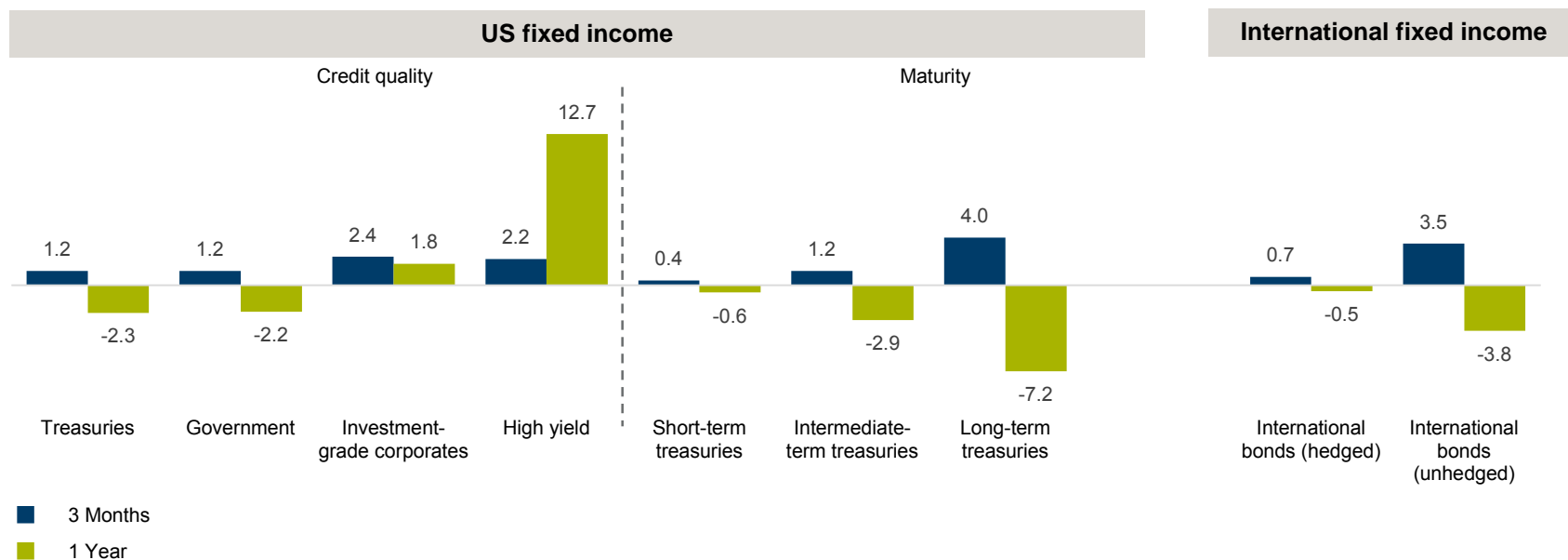
Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Sources: FactSet and Vanguard.
 U.S. markets measured by CRSP US Total Market Index, and international markets represented by FTSE All-Cap ex US Index. Past performance is no guarantee of future returns.

Bond returns steadied over the last 3 months and high yield slowed

- Higher growth and inflation expectations pushed global yields up in the fourth-quarter 2016, however bond returns are beginning to turn positive with steadier yields over the last 3 months
- High yield's pace has slowed over the last 3-months, but remains an outlier over the last 12-months, demonstrating its stronger correlation with equities
- Hedged international bonds have remained in low positive territory over this period, with unhedged international bonds displaying more return volatility due to currency fluctuations

Global fixed income market returns as of June 30, 2017 (%)

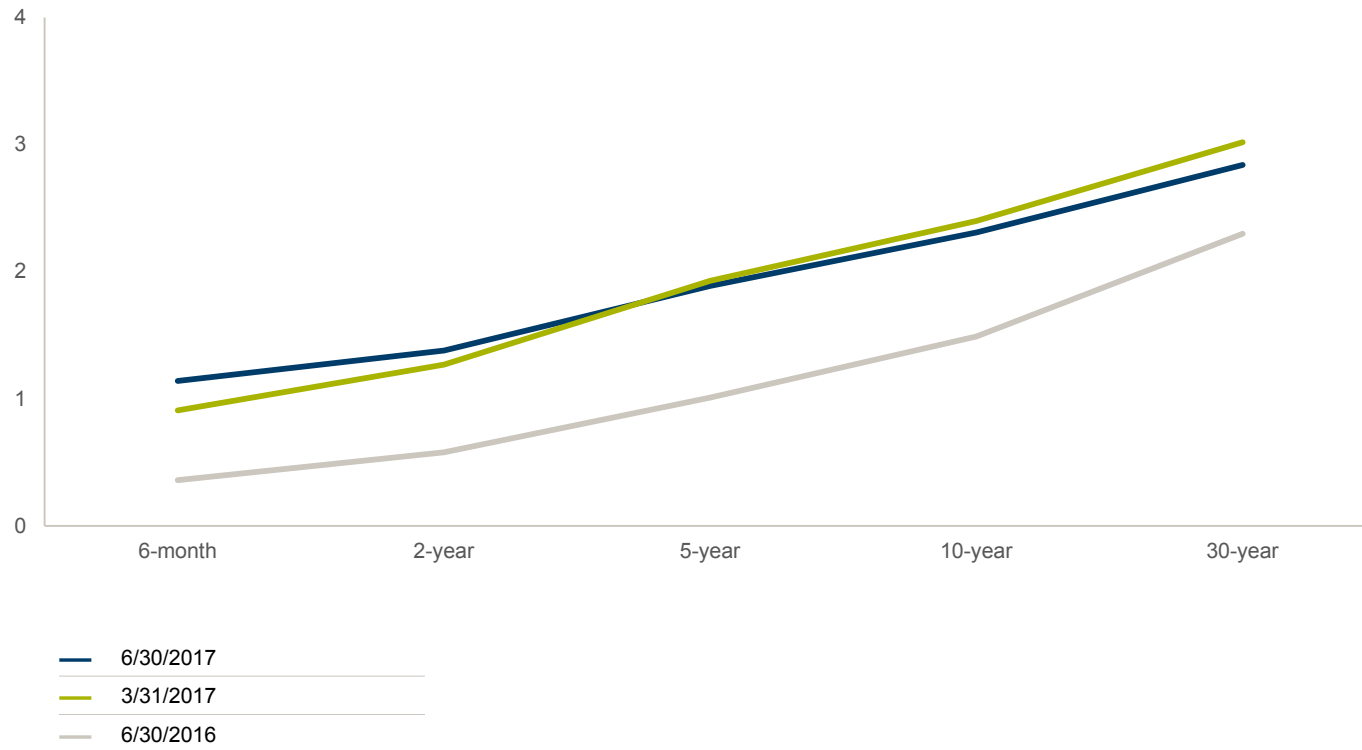


Past performance is no guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Sources: Barclays, FTSE, MSCI, Russell, and Dow Jones.
 Treasuries-Government-Investment Grade Corporates-High Yield (Barclays US Treasury/Government/Credit/Corporate High Yield Indices); Short-Inter-Long-term Treasuries (Barclays US 1-5/5-10/Long Year Treasury Indices)
 International Bonds Hedged (Barclays Global Aggregate ex-USD Float Adj. RIC Cap Index hedged) Unhedged (Barclays Global Aggregate ex-USD Index)

U.S. Treasury yield curve – Slight flattening of the yield curve over last 3 months

Yield (%) and change (bps)		6 month	2 year	5 year	10 year	30 year
—	Current Yield (%)	1.14	1.38	1.89	2.31	2.84
—	3 Mo. Δ	23	11	-4	-9	-18
—	12 Mo. Δ	78	80	88	82	54



Market leadership changes

- The positions of the various asset classes change meaningfully over the last 10-years, which points to the value of diversification
- Emerging markets equities appeared at both the top and bottom multiple times, demonstrating the relatively high volatility level of single asset classes
- The balanced portfolio generally falls near the middle, demonstrating the volatility dampening effect of high-grade fixed income

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	10-Year Average
Emg	41.7	5.7	85.2	28.5	8.7	18.1	38.8	30.4	5.1	21.3	8.3
Dev	12.9	5.2	58.2	26.9	7.8	17.8	34.2	13.2	2.5	18.4	7.5
Grw	11.4	1.8	37.0	19.8	5.0	17.5	33.1	12.7	1.4	17.1	7.1
Cmd	11.1	-23.3	36.7	17.6	3.9	17.4	32.7	12.4	0.9	12.1	7.1
Bal	8.9	-24.6	28.6	16.7	2.2	16.4	20.5	8.8	0.5	11.4	5.8
Bnd	7.0	-26.2	28.4	16.2	1.5	16.4	16.8	6.4	0.0	10.3	5.4
Lrg	5.8	-33.8	27.2	16.1	0.1	15.8	7.4	6.0	-0.6	8.6	5.0
T-Bill	4.7	-36.3	24.7	15.1	-0.1	15.2	6.7	4.9	-1.8	7.4	4.4
IB	4.3	-36.6	19.8	12.1	-0.9	12.7	2.5	2.6	-3.6	7.3	4.3
HF	4.2	-37.6	18.7	11.2	-4.2	6.5	1.2	2.5	-4.1	4.9	2.6
HY	1.9	-38.0	13.4	6.5	-8.9	4.2	0.1	0.0	-4.4	3.1	1.4
Val	-1.0	-38.4	5.9	5.2	-12.7	3.5	-2.0	-0.6	-4.5	2.6	0.7
Sml	-1.6	-44.2	4.4	3.3	-13.4	0.1	-3.2	-4.4	-13.5	2.5	-0.6
REIT	-16.8	-54.2	0.2	0.1	-20.0	-1.1	-9.6	-17.0	-24.7	0.3	-6.2

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

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: Vanguard. Last observation: December 31, 2016; 10-year average performance from December 31, 2007 through December 31, 2016.

* Source: Hedge Fund Research, Inc.

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

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

†† Bonds: BloomBarc US Aggregate Bond Index and BloomBarc GA ex-USD Index Hedged.

Portfolio review

Asset allocation summary of CFMC VIAS composite portfolio As of June 30, 2017

Investment	Market value as of June 30, 2017	June target allocation	Actual weight	Variance	Policy Target allocation	Variance (%)	Variance (\$)
Domestic equity							
Total Stock Market Index Fund Institutional Shares	\$65,217,686	37.5%	37.5%	0.0%	39.0%	-1.5%	-\$2,565,158.44
<i>Domestic equity subtotal</i>	<i>\$65,217,686</i>	<i>37.5%</i>	<i>37.5%</i>	<i>0.0%</i>	<i>39.0%</i>	<i>-1.5%</i>	
International equity							
Total International Stock Index Fund Institutional Shares	\$43,942,253	25.0%	25.3%	0.3%	26.0%	-0.7%	-\$1,246,309.96
<i>International equity subtotal</i>	<i>\$43,942,253</i>	<i>25.0%</i>	<i>25.3%</i>	<i>0.3%</i>	<i>26.0%</i>	<i>-0.7%</i>	
Fixed income							
Total Bond Market Index Fund Institutional Shares	\$42,065,110						
Total Bond Market ETF (held at PNC in pledge)*	\$6,406,692	27.5%	27.9%	0.4%	25.0%	2.9%	\$5,021,260.92
<i>Fixed income subtotal</i>	<i>\$48,471,802</i>	<i>27.5%</i>	<i>27.9%</i>	<i>0.4%</i>	<i>25.0%</i>	<i>2.9%</i>	
Other investments							
REIT Index Fund	\$16,170,424	10.0%	9.3%	-0.7%	10.0%	-0.7%	-\$1,209,792.52
<i>Other investments subtotal</i>	<i>\$16,170,424</i>	<i>10.0%</i>	<i>9.3%</i>	<i>-0.7%</i>	<i>10.0%</i>	<i>-0.7%</i>	
Total portfolio	\$173,802,165	100.0%	100.0%		100.0%		

* Total Bond Market ETF market value is reported by Community Foundation for Muskegon County staff.

COMMUNITY FOUNDATION FOR MUSKEGON COUNTY

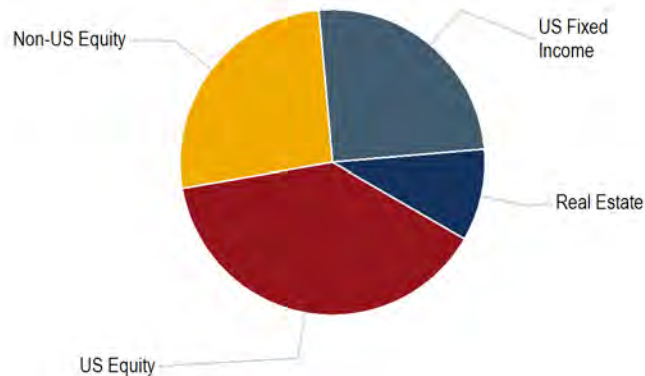
Total Portfolio Performance & Asset Allocation

Performance Summary

	Market Value (\$)	Ending June 30, 2017						Inception	
		2017 Q2 (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
COMMUNITY FOUNDATION FOR MUSKEGON COUNTY (Gross)	167,395,474	3.20	8.02	11.44	5.46	--	--	6.30	Apr-14
COMMUNITY FOUNDATION FOR MUSKEGON COUNTY (Net)		3.19	8.00	11.40	5.42	--	--	6.26	
0JABQX Composite Benchmark		3.08	7.53	10.99	5.35	--	--	6.16	Apr-14

- 0JABQX Composite Benchmark = 10% REIT Spliced Index / 30% Spliced BBgBarc USAgg Float Adj Ix / 24% Spl Total International Stock Index / 36% Spliced Total Stock Market Index

Current Allocation as of June 30, 2017



	Current	%	Policy	Difference*
US Equity	\$65,217,686	39.0%	37.5%	1.5%
Non-US Equity	\$43,942,253	26.3%	25.0%	1.3%
US Fixed Income	\$42,065,110	25.1%	27.5%	-2.4%
Real Estate	\$16,170,424	9.7%	10.0%	-0.3%
Total	\$167,395,474	100.0%	100.0%	

*Difference between Policy and Current Allocation

COMMUNITY FOUNDATION FOR MUSKEGON COUNTY

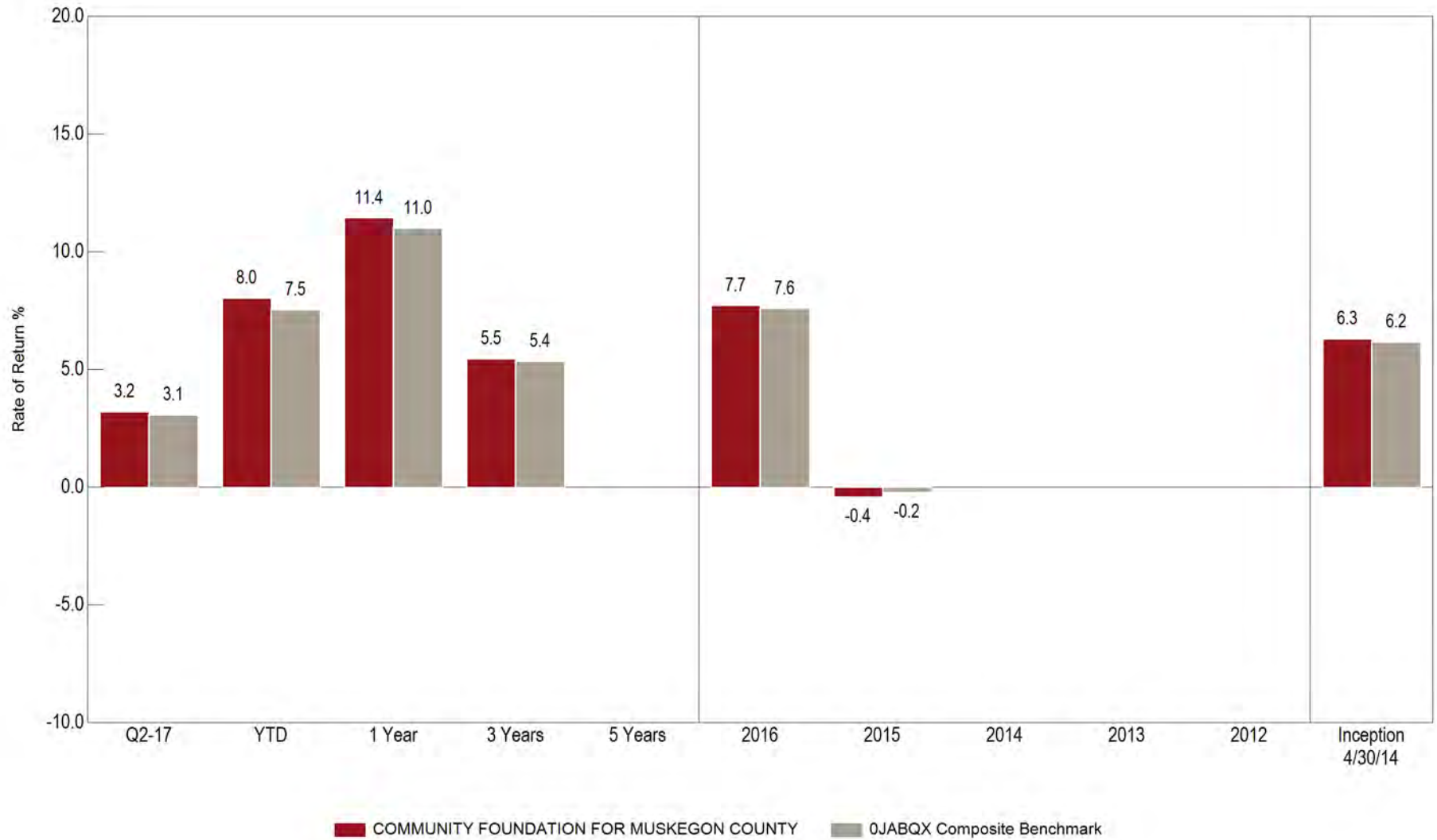
Performance Summary (Gross of Fees)

			Ending June 30, 2017						Inception	
	Market Value (\$)	% of Portfolio	2017 Q2 (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
COMMUNITY FOUNDATION FOR MUSKEGON COUNTY	167,395,474	100.00	3.20	8.02	11.44	5.46	--	--	6.30	Apr-14
OJABQX Composite Benchmark			3.08	7.53	10.99	5.35	--	--	6.16	Apr-14
Total Equity	109,159,939	65.21	4.14	11.27	19.17	6.03	--	--	7.13	Apr-14
Equity Domestic	65,217,686	38.96	3.03	9.00	18.52	9.08	--	--	10.20	Apr-14
Spliced Total Stock Market Index			3.04	9.00	18.49	9.07	14.56	7.37	10.19	Apr-14
Vanguard® Total Stock Market Index Fund Institutional Shares	65,217,686	38.96	3.03	9.00	18.50	9.07	14.55	7.38	10.19	Apr-14
Spliced Total Stock Market Index			3.04	9.00	18.49	9.07	14.56	7.37	10.19	Apr-14
Multi-Cap Core Funds Average			2.73	8.35	17.46	6.37	12.62	5.56	7.56	Apr-14
Equity International	43,942,253	26.25	5.83	14.79	20.09	1.38	--	--	2.47	Apr-14
Spl Total International Stock Index			5.71	14.06	20.41	1.37	7.77	1.18	2.52	Apr-14
Vanguard® Total International Stock Index Fund Inst Shares	43,942,253	26.25	5.83	14.78	20.08	1.37	7.70	1.19	2.46	Apr-14
Spl Total International Stock Index			5.71	14.06	20.41	1.37	7.77	1.18	2.52	Apr-14
International Funds Average			6.52	15.00	18.87	1.32	7.96	0.91	2.20	Apr-14
Total Fixed Income	42,065,110	25.13	1.48	2.40	-0.44	2.44	--	--	2.66	Apr-14
Fixed Income Domestic	42,065,110	25.13	1.48	2.40	-0.44	2.44	--	--	2.66	Apr-14
Spliced BBgBarc USAgg Float Adj Ix			1.49	2.35	-0.33	2.49	2.23	4.50	2.73	Apr-14
Vanguard® Total Bond Market Index Fund Institutional Shares	42,065,110	25.13	1.48	2.40	-0.43	2.44	2.15	4.48	2.69	Apr-14
Spliced BBgBarc USAgg Float Adj Ix			1.49	2.35	-0.33	2.49	2.23	4.50	2.73	Apr-14
Spl Interm Inv-Grade Debt Funds Avg			1.43	2.40	0.43	2.15	2.38	4.01	2.44	Apr-14
Total Real Estate	16,170,424	9.66	1.64	2.60	-1.89	8.09	--	--	8.83	Apr-14
Real Estate Domestic	16,170,424	9.66	1.64	2.60	-1.89	8.09	--	--	8.83	Apr-14
REIT Spliced Index			1.65	2.66	-1.82	8.19	9.38	6.16	8.93	Apr-14
Vanguard® REIT Index Fund Institutional Shares	16,170,424	9.66	1.63	2.60	-1.88	8.09	9.30	6.21	8.83	Apr-14
REIT Spliced Index			1.65	2.66	-1.82	8.19	9.38	6.16	8.93	Apr-14
Real Estate Funds Average			1.85	2.86	-0.38	7.19	8.46	4.76	8.04	Apr-14

COMMUNITY FOUNDATION FOR MUSKEGON COUNTY

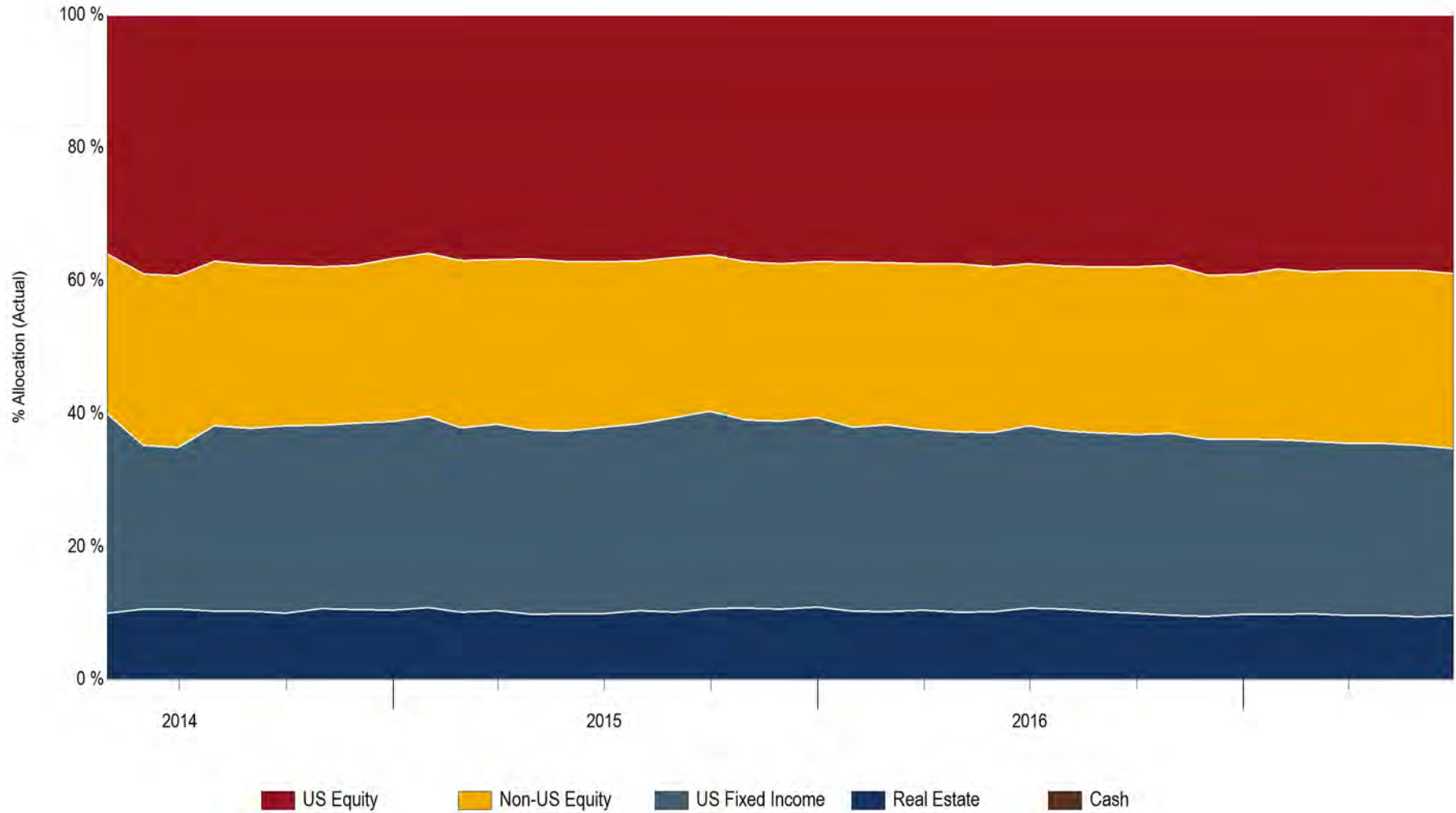
Total Portfolio Performance (Gross of Fees)

as of June 30, 2017



Asset Allocation History

3 Years 2 Months Ending June 30, 2017



COMMUNITY FOUNDATION FOR MUSKEGON COUNTY

Cash Flow Summary

	Quarter Ending June 30, 2017			
	Beginning Market Value	Net Cash Flow	Net Investment Change	Ending Market Value
Vanguard® REIT Index Fund Institutional Shares	\$15,910,876	\$0	\$259,548	\$16,170,424
Vanguard® Total Bond Market Index Fund Institutional Shares	\$42,423,588	-\$990,000	\$631,522	\$42,065,110
Vanguard® Total International Stock Index Fund Inst Shares	\$42,558,961	-\$1,049,689	\$2,432,981	\$43,942,253
Vanguard® Total Stock Market Index Fund Institutional Shares	\$62,975,582	\$340,000	\$1,902,105	\$65,217,686
Total	\$163,869,007	-\$1,699,689	\$5,226,156	\$167,395,474

Net Investment Change is inclusive of income.



COMMUNITY FOUNDATION FOR MUSKEGON COUNTY

Investment Expense Analysis

as of June 30, 2017

Name	Market Value	% of Portfolio	Expense Ratio
Total Equity	\$109,159,939	65.2%	
Equity Domestic	\$65,217,686	39.0%	
Vanguard® Total Stock Market Index Fund Institutional Shares	\$65,217,686	39.0%	0.04%
Equity International	\$43,942,253	26.3%	
Vanguard® Total International Stock Index Fund Inst Shares	\$43,942,253	26.3%	0.09%
Total Fixed Income	\$42,065,110	25.1%	
Fixed Income Domestic	\$42,065,110	25.1%	
Vanguard® Total Bond Market Index Fund Institutional Shares	\$42,065,110	25.1%	0.04%
Total Real Estate	\$16,170,424	9.7%	
Real Estate Domestic	\$16,170,424	9.7%	
Vanguard® REIT Index Fund Institutional Shares	\$16,170,424	9.7%	0.10%
Total	\$167,395,474	100.0%	0.06%

COMMUNITY FOUNDATION FOR MUSKEGON COUNTY

Benchmark History

as of June 30, 2017

COMMUNITY FOUNDATION FOR MUSKEGON COUNTY

7/1/2017 Present 37.5% Spliced Total Stock Market Index / 25% Spl Total International Stock Index / 27.5% Spliced BBgBarc USAgg Float Adj Ix / 10% REIT Spliced Index

5/1/2014 6/30/2017 10% REIT Spliced Index / 30% Spliced BBgBarc USAgg Float Adj Ix / 24% Spl Total International Stock Index / 36% Spliced Total Stock Market Index

Equity Domestic

4/30/2014 Present 100% CRSP US Total Market TR USD

Vanguard® Total Stock Market Index Fund Institutional Shares

4/30/2014 Present 100% CRSP US Total Market TR USD

Equity International

4/30/2014 Present 100% FTSE Global All Cap ex US

Vanguard® Total International Stock Index Fund Inst Shares

4/30/2014 Present 100% FTSE Global All Cap ex US

Fixed Income Domestic

4/30/2014 Present 100% BBgBarc US Aggregate Float Adjusted TR

Vanguard® Total Bond Market Index Fund Institutional Shares

4/30/2014 Present 100% BBgBarc US Aggregate Float Adjusted TR

Real Estate Domestic

4/30/2014 Present 100% MSCI US REIT

Vanguard® REIT Index Fund Institutional Shares

4/30/2014 Present 100% MSCI US REIT

COMMUNITY FOUNDATION FOR MUSKEGON COUNTY

Market Performance

Name	Periods Ending June 30, 2017					
	Q2-17	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
US Equity						
CRSP US Total Market TR USD	3.0	9.0	18.5	9.1	14.6	7.4
S&P 500	3.1	9.3	17.9	9.6	14.6	7.2
S&P 400 MidCap	2.0	6.0	18.6	8.5	14.9	8.6
S&P 600 SmallCap	1.7	2.8	22.5	9.3	15.5	8.4
International Equity						
MSCI Emerging Markets	6.3	18.4	23.7	1.1	4.0	1.9
MSCI Emerging Markets NR LCL	6.6	14.8	21.8	6.1	7.6	4.3
MSCI EAFE	6.1	13.8	20.3	1.1	8.7	1.0
MSCI EAFE NR LCL	2.7	7.5	22.1	7.0	12.5	2.0
MSCI ACWI ex USA	5.8	14.1	20.5	0.8	7.2	1.1
Fixed Income Domestic						
BBgBarc US Aggregate TR	1.4	2.3	-0.3	2.5	2.2	4.5
BBgBarc US Corporate 1-5 Years TR	0.9	1.9	1.6	2.1	2.5	4.1
BBgBarc US Credit/Corp 5-10 Yr TR	2.2	3.7	1.8	3.8	4.2	6.2
BBgBarc US Corporate Long TR	4.9	6.4	3.6	5.4	5.6	7.7
BBgBarc US Govt/Credit Long TR	4.4	6.0	-1.1	5.3	4.3	7.6
BBgBarc US Treasury Strips 20-30 Yr Equal Parity TR	6.1	8.0	-10.2	8.1	3.5	9.6
BBgBarc US High Yield TR	2.2	4.9	12.7	4.5	6.9	7.7
BBgBarc US Govt TR	1.2	1.9	-2.2	2.0	1.3	3.9
BBgBarc US Credit TR	2.4	3.7	1.8	3.4	3.7	5.6
BBgBarc US Treasury 1-5 Yr TR	0.4	0.8	-0.6	1.1	0.9	2.7
BBgBarc US Treasury 5-10 Yr TR	1.2	2.1	-2.9	2.5	1.5	5.2
BBgBarc US Treasury Long TR	4.0	5.4	-7.2	5.6	2.8	7.3
BBgBarc US Treasury TIPS 0-5 Yr TR	-0.5	0.2	0.3	0.0	0.3	2.5
BBgBarc US TIPS TR	-0.4	0.9	-0.6	0.6	0.3	4.3
Fixed Income International						
BBgBarc Global Aggregate ex US Tres Hedged TR	0.6	0.6	-0.7	3.8	4.0	4.5
BBgBarc Emerging Markets TR	1.8	5.1	5.6	4.5	5.3	7.1
REIT						
MSCI US REIT Gross	1.7	2.7	-1.8	8.2	9.4	5.9

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Total Portfolio Net of Fees returns reflect the deduction of fund expense ratios, purchase or redemption fees, and any advisory service fee applied to the client portfolio.

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.

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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Portfolio reallocation update

Portfolio reallocation update

Investment	As of June 15, 2017			Asset reallocation		Rebalancing activity		As of July 31, 2017			
	Market values	Original policy target	Actual allocation	New policy target	Variance relative to target	Rebalance	Cash flows	Market values	Actual allocation	Variance relative to target	\$ Variance
Domestic equity											
Total Stock Market Index	\$64,877,629.70	36.00%	37.24%	39.00%	-1.76%	\$490,000.00	\$0.00	\$66,434,193.19	37.85%	-1.15%	-\$2,015,408.22
International equity											
Total International Stock Index	\$43,475,760.07	24.00%	24.96%	26.00%	-1.04%	\$160,000.00	\$0.00	\$45,455,872.03	25.90%	-0.10%	-\$177,195.58
<i>Total equity</i>	<i>\$108,353,389.77</i>	<i>60.00%</i>	<i>62.20%</i>	<i>65.00%</i>	<i>-2.80%</i>	<i>\$650,000.00</i>	<i>\$0.00</i>	<i>\$111,890,065.22</i>	<i>63.75%</i>	<i>-1.25%</i>	<i>-\$2,192,603.80</i>
Fixed income											
Total Bond Market Index	\$43,061,024.20	30.00%	24.72%	25.00%	3.39%	-\$650,000.00	-\$2,370,000.00	\$40,828,543.56	26.92%	1.92%	\$3,369,567.82
Total Bond Market Index (PNC)	\$6,404,005.36		3.68%					\$6,418,973.88			
<i>Total fixed income</i>	<i>\$49,465,029.56</i>	<i>30.00%</i>	<i>28.39%</i>	<i>25.00%</i>	<i>3.39%</i>	<i>-\$650,000.00</i>	<i>-\$2,370,000.00</i>	<i>\$47,247,517.44</i>	<i>26.92%</i>	<i>1.92%</i>	<i>\$3,369,567.82</i>
Other investments											
REIT Index	\$16,393,546.73	10.00%	9.41%	10.00%	-0.59%	\$0.00	\$0.00	\$16,374,215.83	9.33%	-0.67%	-\$1,176,964.02
<i>Total other investments</i>	<i>\$16,393,546.73</i>	<i>10.00%</i>	<i>9.41%</i>	<i>10.00%</i>	<i>-0.59%</i>	<i>\$0.00</i>	<i>\$0.00</i>	<i>\$16,374,215.83</i>	<i>9.33%</i>	<i>-0.67%</i>	<i>-\$1,176,964.02</i>
Total	\$174,211,966.06	100.00%	100.00%	100.00%	0.00%	\$0.00	-\$2,370,000.00	\$175,511,798.49	100.00%	0.00%	\$0.00

Source: Vanguard.

Vanguard Total Bond Market Index Fund overview

Vanguard Total Bond Market Index Fund (VBTIX)

Investment approach

- Seeks to track the performance of the Bloomberg Barclays U.S. Aggregate Float Adjusted Index.
- Broadly diversified exposure to investment-grade U.S. bond market.
- Passively managed using index sampling.
- Intermediate-duration portfolio.
- Provides moderate current income with high credit quality.

Share of U.S. bond market (%)



- 100% Bloomberg Barclays U.S. Aggregate Float Adjusted Index

As measured by the Bloomberg Barclays U.S. Aggregate Bond Index.

Key facts

Expense ratio as of 04/26/2017	4 bps
As reported in the most recent prospectus.	
Designation	Treasury/agency/blend intermediate-term
Inception date	12/11/1986
Institutional Shares inception date	09/18/1995
Total net assets as of 06/30/2017 (\$M)	\$183,453
Net fund assets for VBTIX as of 06/30/2017 (\$M)	\$36,484
Holdings	8,174
Indexed to	Bloomberg Barclays U.S. Aggregate Float Adjusted Index (LBUFTRUU)
Turnover rate (fiscal year-end 12/31/2016)	61.0%
CUSIP	921937504
Investment manager	Vanguard Fixed Income Group

Risk and volatility

	R ²	Beta
Primary benchmark	0.99	1.04
Broad-based benchmark	0.99	1.04

R-squared and beta are calculated from trailing 36-month fund returns relative to the associated benchmark.
 Broad-based benchmark: Spliced Bloomberg Barclays U.S. Aggregate Float Adjusted Index.

Performance



	Annualized					
	Quarter-end	Year-to-date	1-year	3-year	5-year	10-year
Fund	1.48%	2.40%	-0.43%	2.44%	2.15%	4.48%
Benchmark	1.49%	2.35%	-0.33%	2.49%	2.23%	4.50%
+/- Benchmark	-0.01%	0.05%	-0.10%	-0.05%	-0.08%	-0.02%

Spliced Bloomberg Barclays U.S. Aggregate Float Adjusted Index: Bloomberg Barclays U.S. Aggregate Bond Index through December 31, 2009; Bloomberg Barclays U.S. Aggregate Float Adjusted Index thereafter.

Performance versus competitors

Percentage of Core Bond Funds Average outperformed by VBTIX



Source: Lipper, a Thomson Reuters Company. Based on total returns as of June 30, 2017. Number of funds in category: 1-year, 484; 3-year, 421; 5-year, 381; 10-year, 288. Results will vary for other time periods.

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Figures for periods of less than one year are cumulative returns. All other figures represent average annual returns. Performance figures include the reinvestment of all dividends and any capital gains distributions. All returns are net of expenses.

The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Vanguard Fixed Income Group—Firm overview

Gregory Davis, CFA, principal and global head of Fixed Income Group, has direct oversight responsibility for all money market, bond, and stable value portfolios managed by the Fixed Income Group. He has managed investment portfolios since 2000, and has been with Vanguard since 1999.

Key facts

- Client-owned.*
- Headquartered in Malvern, Pennsylvania with offices around the world, including London, England, and Melbourne, Australia.
- More than \$1 trillion in assets under management globally.
- More than 154 portfolio managers, traders, analysts, researchers, and support staff.

Portfolio management

Joshua C. Barrickman, CFA, Principal, Head of Fixed Income Indexing Americas

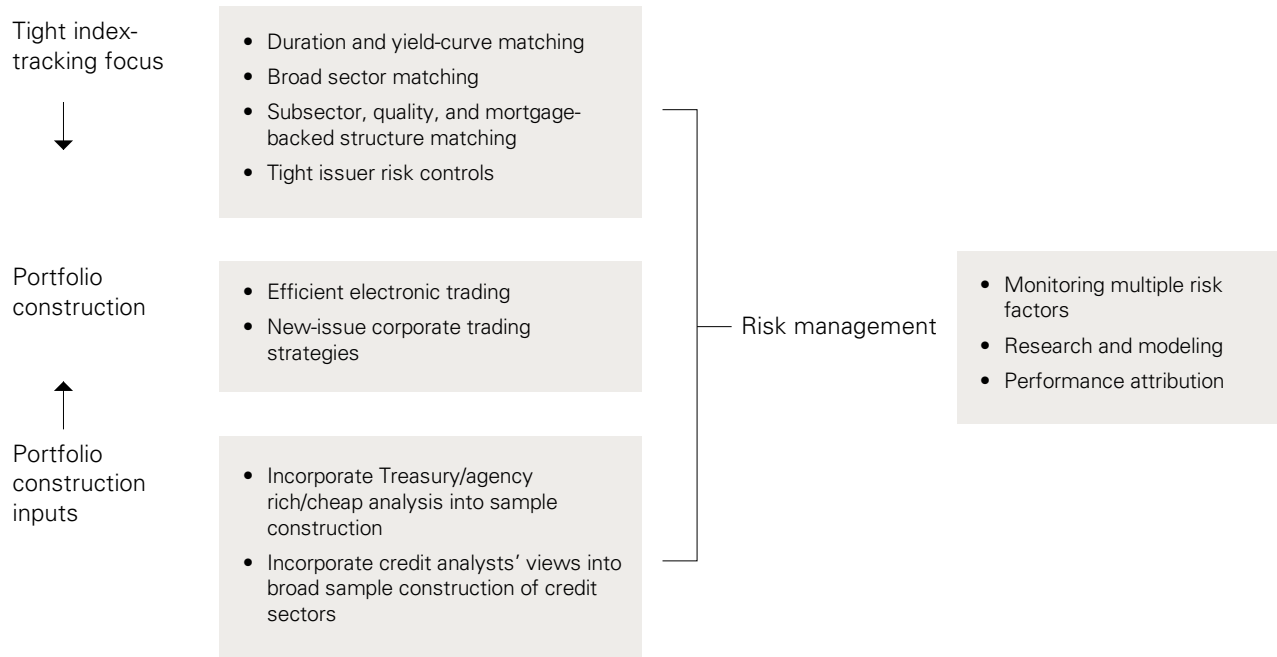
- Portfolio manager.
 - Advised the fund since 2013.
 - Worked in investment management since 1999.
 - B.S., Ohio Northern University.
 - M.B.A., Lehigh University.
-

Source: Vanguard, as of June 30, 2017.

* Vanguard is owned by the Vanguard funds, which, in turn, are owned by their shareholders.

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Bond index: Tight tracking, integrated risk management



Bond index tracking differences

While the fund seeks to track its benchmark, tracking differences can occur. Vanguard's Fixed Income Group regularly monitors these differences.

Expense ratio

- The fund's expense ratio is an ongoing contributor to tracking differences.

Sampling

- Because Vanguard does not purchase all of the bonds in the benchmark, small performance differences may result.

Pricing differences

- Vanguard prices its funds at 4 p.m., Eastern time using an external pricing service, while the benchmark prices at 3 p.m. using an alternative pricing service. Fixed income securities trade over-the-counter, so that different pricing vendors can lead to small pricing disparities.

Penny rounding

- Occasionally the rounding of fund performance numbers from 5 decimal places to 2 decimal places (for publication purposes) can create the appearance of tracking differences.

Vanguard Total Bond Market Index Fund (VBTIX)

Fixed income characteristics

	VBTIX	Benchmark
Number of bonds	8,174	9,347
Average duration	6.1 years	6.1 years
Average effective maturity	8.4 years	8.3 years
Turnover (fiscal year end)	61.0%	—

Distribution by issuer type

	% of total net assets
Treasury/Agency	42.6%
Government Mortgage-Backed	21.3%
Industrial	17.3%
Finance	8.9%
Foreign	5.7%
Utilities	2.0%
Commercial Mortgage-Backed	1.8%
Asset-Backed	0.3%
Other	0.1%

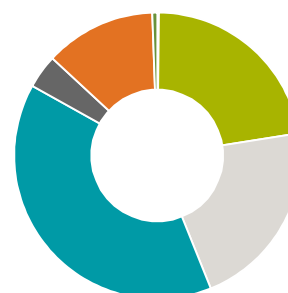
Hedged non-U.S. dollar-denominated bonds are included in the sector of issuer, not as part of the foreign category.

Risk and volatility

	R-squared	Beta	Alpha	Standard deviation	Sharpe ratio
VBTIX	N/A	N/A	-0.01	3.12	0.72
Primary benchmark	0.99	1.04	N/A	3.00	0.77
Broad-based benchmark	0.99	1.04	N/A	3.00	0.77

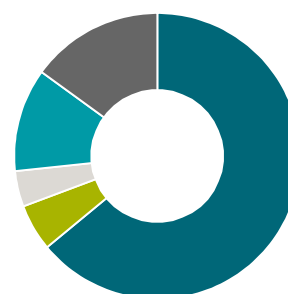
R-squared and beta are calculated from trailing 36-month fund returns relative to the associated benchmark. Broad-based benchmark: Spliced Bloomberg Barclays U.S. Aggregate Float Adjusted Index.

Distribution by effective maturity as a % of funds



Under 1 Year	0.2%
1 - 3 Years	22.3
3 - 5 Years	21.4
5 - 10 Years	39.2
10 - 20 Years	3.8
20 - 30 Years	12.5
Over 30 Years	0.6

Distribution by credit quality as a % of funds



U.S. Government	64.0%
Aaa	5.3
Aa	4.0
A	11.7
Baa	15.0
Less Than Baa	0.0

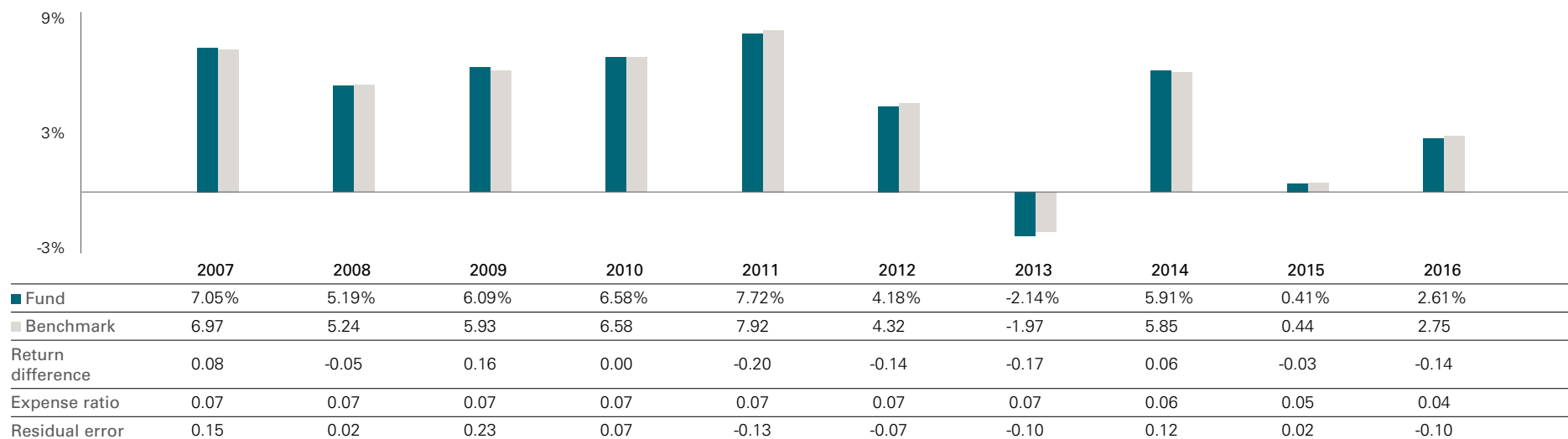
Credit-quality ratings are measured on a scale that generally ranges from AAA (highest) to D (lowest). "NR" is used to classify securities for which a rating is not available. NR securities may include a fund's investment in Vanguard Market Liquidity Fund or Vanguard Municipal Cash Management Fund, each of which invests in high-quality money market instruments and may serve as a cash management vehicle for the Vanguard funds, trusts, and accounts. U.S. Treasury, U.S. Agency, and U.S. Agency mortgage-backed securities appear under "U.S. Government." Credit-quality ratings for each issue are obtained from Barclays using ratings derived from Moody's Investors Service (Moody's), Fitch Ratings (Fitch), and Standard & Poor's (S&P). When ratings from all three agencies are available, the median rating is used. When ratings are available from two of the agencies, the lower rating is used. When one rating is available, that rating is used.

Vanguard Total Bond Market Index Fund (VBTIX)

Performance and tracking differences

As of June 30, 2017	Quarter-end	Year-to-date	Annualized			
			1-year	3-year	5-year	10-year
VBTIX	1.48%	2.40%	-0.43%	2.44%	2.15%	4.48%
Benchmark	1.49	2.35	-0.33	2.49	2.23	4.50
Return difference	-0.01	0.05	-0.10	-0.05	-0.08	-0.02
Expense ratio	0.01	0.02	0.04	0.05	0.06	0.06
Residual error	0.00	0.07	-0.06	0.00	-0.02	0.04

Calendar-year performance



Spliced Bloomberg Barclays U.S. Aggregate Float Adjusted Index: Bloomberg Barclays U.S. Aggregate Bond Index through December 31, 2009; Bloomberg Barclays U.S. Aggregate Float Adjusted Index thereafter.

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Figures for periods of less than one year are cumulative returns. All other figures represent average annual returns. Performance figures include the reinvestment of all dividends and any capital gains distributions. All returns are net of expenses.

The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Vanguard Total Bond Market Index Fund (VBTIX)

Investment commentary as of 6/30/2017

- Interest rates continued to be pulled in different directions during the second quarter. In mid-June, the Federal Reserve raised short-term rates for the second time this year. Although the Fed noted when it announced the increase that inflation was still running below its 2% target, household and business spending subsequently picked up, and the labor market continued to tighten. The Fed's move pushed up very short-term rates, even as longer-term rates eased lower on dimming prospects for faster growth and higher inflation. The yield of the 2-year Treasury note rose 13 basis points over the quarter to 1.38%, whereas the bellwether 10-year U.S. Treasury note fell 8 basis points to 2.30%. (A basis point is one-hundredth of a percentage point.)
- The fund's benchmark, the Bloomberg Barclays U.S. Aggregate Float Adjusted Bond Index, returned 1.49%.
- Treasuries returned 1.19%. They outpaced agency bonds and mortgage-backed securities.
- Investment-grade corporate bonds returned 2.54%, with the average spread in yield between such bonds and Treasuries narrowing slightly. By sector, bonds issued by utilities and industrial companies outpaced those of financial institutions. By credit quality, results were mixed.
- Over the 12 months ended June 30, 2017, the fund's benchmark returned -0.33%.
- Small deviations in the fund's performance versus that of the benchmark index, whether positive or negative, may occur given the fund's sampling approach to approximate the index and temporary pricing differences between the fund and the index.

Vanguard Total International Stock Index Fund overview

Vanguard Total International Stock Index Fund (VTSNX)

Investment approach

- Seeks to track the performance of the FTSE Global All Cap ex US Index.
- Broad exposure across developed and emerging non-U.S. equity markets.
- Passively managed.
- Fund remains fully invested.
- Low expenses minimize net tracking error.

Regional diversification



44.0%	Europe
29.7	Pacific
19.1	Emerging Markets
6.6	North America
0.4	Middle East
0.2	Other

Key facts

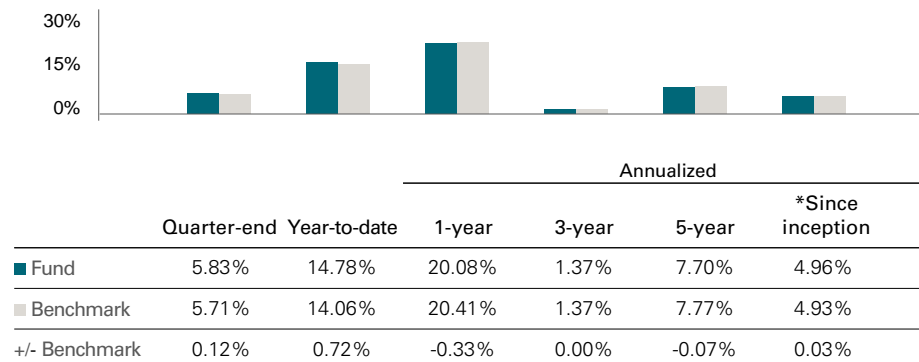
Expense ratio as of 02/23/2017	9 bps
As reported in the most recent prospectus.	
Designation	International/global blend
Inception date	04/29/1996
Institutional Shares inception date	11/29/2010
Total net assets as of 06/30/2017 (\$M)	\$283,435
Net fund assets for VTSNX as of 06/30/2017 (\$M)	\$25,875
Holdings	6,176
Indexed to	FTSE Global All Cap ex US Index (TGPVAN17)
Turnover rate (fiscal year-end 10/31/2016)	3.1%
CUSIP	921909784
Investment manager	Vanguard Equity Index Group

Risk and volatility

	R ²	Beta
Primary benchmark	0.98	0.95
Broad-based benchmark	0.98	0.95

R-squared and beta are calculated from trailing 36-month fund returns relative to the associated benchmark.
Broad-based benchmark: FTSE Global All Cap ex US Index.

Performance

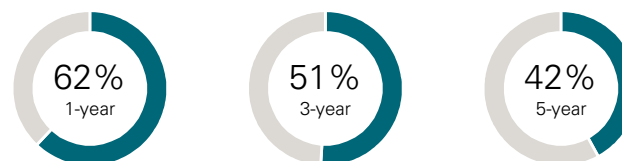


Spliced Total International Stock Index: Total International Composite Index through August 31, 2006; MSCI EAFE + Emerging Markets Index through December 15, 2010; MSCI ACWI ex USA IMI Index through June 2, 2013; and FTSE Global All Cap ex US Index thereafter. Benchmark returns are adjusted for withholding taxes.

* Since fund's inception, November 29, 2010.

Performance versus competitors

Percentage of International Funds outperformed by VTSNX



Source: Lipper, a Thomson Reuters Company. Based on total returns as of June 30, 2017. Number of funds in category: 1-year, 1436; 3-year, 1175; 5-year, 1025. Results will vary for other time periods.

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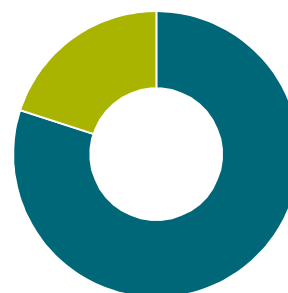
Vanguard Equity Index Group—Firm overview

Vanguard Equity Index Group (EIG) manages assets with high fiduciary and professional standards.

Key facts

- Assets under management: \$2 trillion.
- 125 portfolios tracking more than 70 indexes.
- Benchmarks: Standard & Poor's, Russell, MSCI, FTSE, and CRSP.
- 51 investment professionals.
- Average portfolio manager tenure: 16 years.
- Average expense ratio: 0.10%. *

Equity index asset distribution



- 80% Domestic
- 20% International

Portfolio management

Michael Perre, Principal

- Portfolio manager.
- Advised the fund since 2008.
- Worked in investment management since 1990.
- B.A., Saint Joseph's University.
- M.B.A., Villanova University.

Michelle Louie, CFA

- Portfolio manager.
- Advised the fund since 2016.
- Worked in investment management since 2011.
- B.S., The American University.
- M.B.A., Georgia Institute of Technology.

Source: Vanguard, as of June 30, 2017.

* Asset-weighted expense ratio for all Vanguard equity index funds.

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Vanguard's equity indexing process

A day in the life of a Vanguard portfolio manager



Tracking differences

The fund seeks to track its benchmark, but tracking differences can occur. The main sources of these differences are:

Expense ratio

- The fund's expense ratio is an ongoing contributor to tracking differences.

Fair value pricing

- Price adjustments made to securities to account for market activity that occurs between the time that securities are valued at the close of business in their local market and the close of business in the U.S. (when the fund is valued).
- Can be a positive or negative adjustment.
- Tends to create tracking error in the short-term that dissipates over time.

Securities lending

- Vanguard operates a very conservative securities lending program.
- Funds selectively lend "specials," not general collateral.
- All net revenue (net of broker rebates, direct operating expenses and agent fees) is returned to portfolios.
- Program has rigorous risk controls and invests collateral in a high quality money market fund.

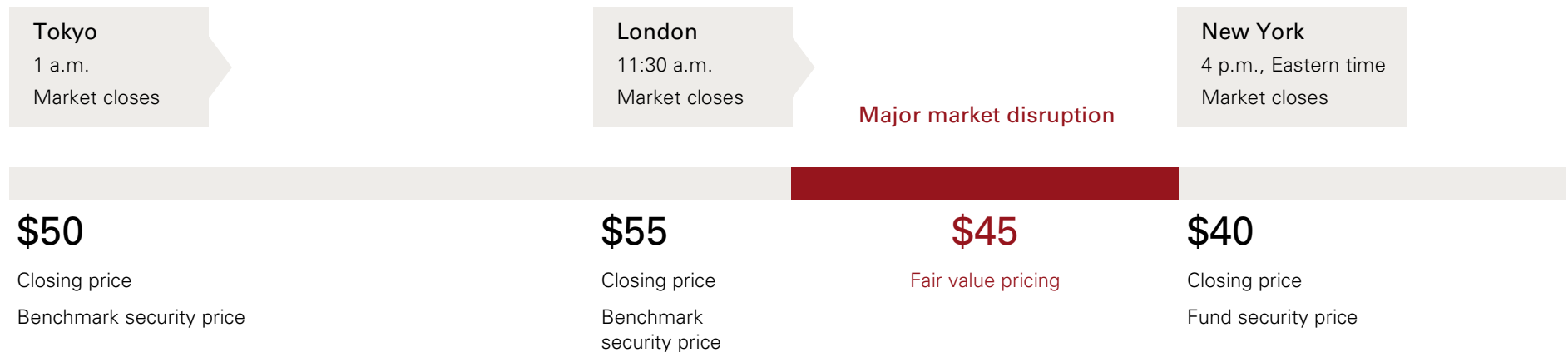
Other

- Index sampling differences.
- Use of futures.
- Index change management.
- Trading costs.
- Impact of NAV penny rounding.

Fair value pricing

Fair value pricing can cause temporary, but sometimes substantial, performance differences between international index funds and their benchmarks.

Much can happen in a few hours

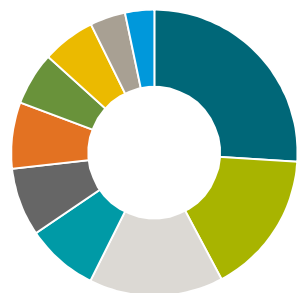


Vanguard Total International Stock Index Fund (VTSNX)

Equity characteristics

	VTSNX	Benchmark
Number of stocks	6,176	5,839
Median market cap	\$24.0B	\$24.0B
P/E ratio (trailing earnings)	16.6x	16.4x
P/B ratio	1.6x	1.6x
Return on equity (5-year average)	14.1%	14.0%
Earnings growth rate (5-year)	6.7%	6.7%
Equity yield (dividend)	2.9%	2.9%
Turnover (fiscal year end)	3.1%	—

Sector diversification as a % of common stock



Sector	VTSNX	Benchmark
Financials	26.0%	26.0%
Consumer Goods	16.2	16.3
Industrials	15.2	15.2
Consumer Services	8.1	8.1
Health Care	7.7	7.7
Basic Materials	7.5	7.5
Oil & Gas	6.0	5.9
Technology	6.0	6.0
Telecommunications	4.0	4.0
Utilities	3.3	3.3

Sector categories are based on the Industry Classification Benchmark ("ICB"), except for the "Other" category (if applicable), which includes securities that have not been provided an ICB classification as of the effective reporting period.

Market-cap breakdown



Market capitalization	VTSNX	Benchmark
More than \$92	70.2%	70.2%
\$26 to \$92	4.0	3.9
\$8 to \$26	13.1	13.0
\$3 to \$8	6.0	6.0
Below \$3	6.7	6.8

Risk and volatility

	R-squared	Beta	Alpha	Standard deviation	Sharpe ratio
VTSNX	N/A	N/A	0.00	11.81	0.10
Primary benchmark	0.98	0.95	N/A	12.31	0.10
Broad-based benchmark	0.98	0.95	N/A	12.31	0.10

R-squared and beta are calculated from trailing 36-month fund returns relative to the associated benchmark. Broad-based benchmark: FTSE Global All Cap ex US Index.

Country diversification

	% of common stock	
	VTSNX	Benchmark
Japan	17.2%	17.3%
United Kingdom	12.7	12.7
Canada	6.6	6.7
France	6.5	6.5
Germany	6.4	6.4
Switzerland	5.7	5.7
Australia	5.0	5.0
China	4.8	4.7
Korea	3.7	3.7
Taiwan	3.3	3.3
Other	28.1	28.0

Ten largest holdings

	% of total net assets
Nestle SA	1.2%
Samsung Electronics Co. Ltd.	1.0
Royal Dutch Shell plc	1.0
Novartis AG	0.9
Tencent Holdings Ltd.	0.8
Roche Holding AG	0.8
HSBC Holdings plc	0.8
Taiwan Semiconductor Manufacturing Co. Ltd.	0.7
Unilever	0.7
Toyota Motor Corp.	0.6
Top ten as a % of total net assets	8.5%

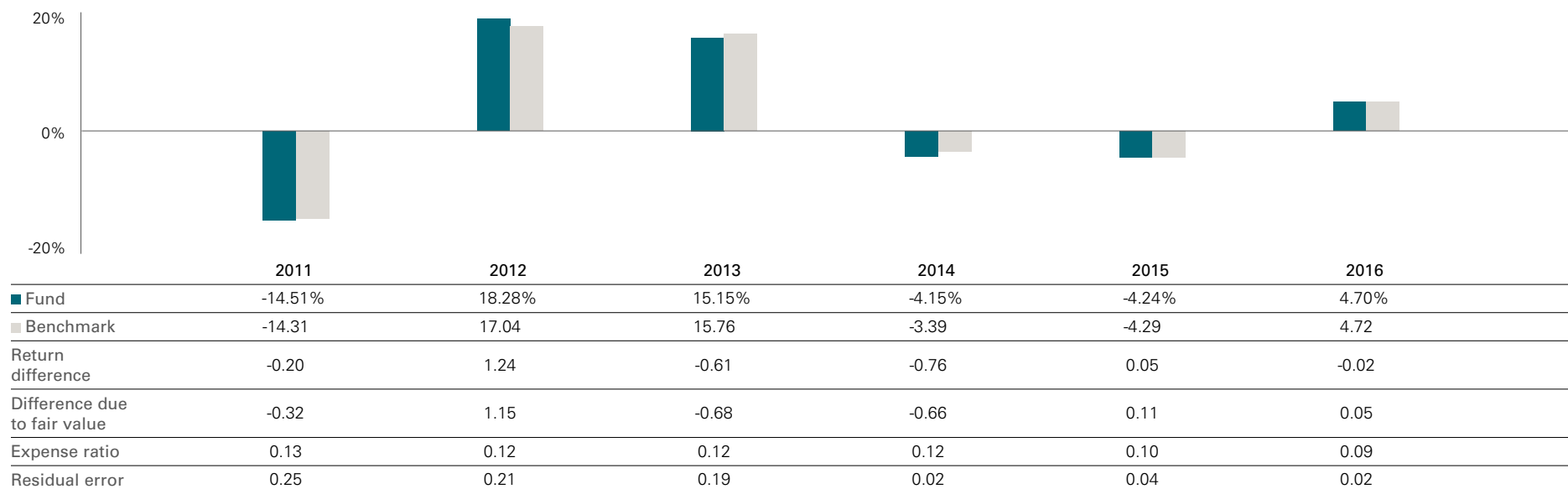
The holdings listed exclude any temporary cash investments and equity index products.

Vanguard Total International Stock Index Fund (VTSNX)

Performance and tracking differences

As of June 30, 2017	Quarter-end	Year-to-date	Annualized			
			1-year	3-year	5-year	*Since inception
VTSNX	5.83%	14.78%	20.08%	1.37%	7.70%	4.96%
Benchmark	5.71	14.06	20.41	1.37	7.77	4.93
FTSE Global All Cap ex US FV Ix	5.70	14.63	19.92	—	—	—
Return difference	0.12	0.72	-0.33	0.00	-0.07	0.03
Difference due to fair value	0.12	0.70	-0.31	0.07	-0.04	-0.03
Expense ratio	0.02	0.05	0.09	0.10	0.11	0.10
Residual error	0.02	0.06	0.07	0.04	0.09	0.16

Calendar-year performance



Spliced Total International Stock Index: Total International Composite Index through August 31, 2006; MSCI EAFE + Emerging Markets Index through December 15, 2010; MSCI ACWI ex USA IMI Index through June 2, 2013; and FTSE Global All Cap ex US Index thereafter. Benchmark returns are adjusted for withholding taxes.

* Since fund's inception, November 29, 2010.

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The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Note: Except for the most recent quarter, the expense ratios presented are the funds' actual operating expenses and they exclude any acquired fees and expenses, which result from the funds' holdings in business development companies (BDCs). BDC expenses are not direct costs paid by fund shareholders and are not used to calculate the fund's net asset value.

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Vanguard Total International Stock Index Fund (VTSNX)

Investment commentary as of 6/30/2017

- Global markets extended their gains during the period. U.S. stocks hovered near all-time highs, and major indexes in previous weak links such as Europe, Japan, and emerging markets posted decent performance. Monetary policy at central banks in Europe and Japan remained accommodative. Meanwhile, the Federal Reserve raised interest rates—its second hike this year—but those moves and the Fed’s plans to reduce its balance sheet didn’t disrupt markets. Global monetary policy helped support bond prices, but indications that the European Central Bank might reduce its bond-buying stimulus decreased demand toward the end of the quarter.
- The FTSE Global All Cap ex US Index, which measures developing and emerging markets outside of the United States, returned 5.71% for the three months ended June 30. The Russell 3000 Index, which measures the broad U.S. stock market, returned 3.02%.
- The top contributors were financials (+6.4%), consumer goods (+7.3%), and industrials (+7.3%).
- The sole detractor was oil & gas (–2.6%).
- For the 12 months ended June 30, 2017, the FTSE Global All Cap ex US Index returned 20.41%. All sectors added to results. Financials (+30.6%), industrials (+28.5%), and consumer goods (+19.3%) helped the most.

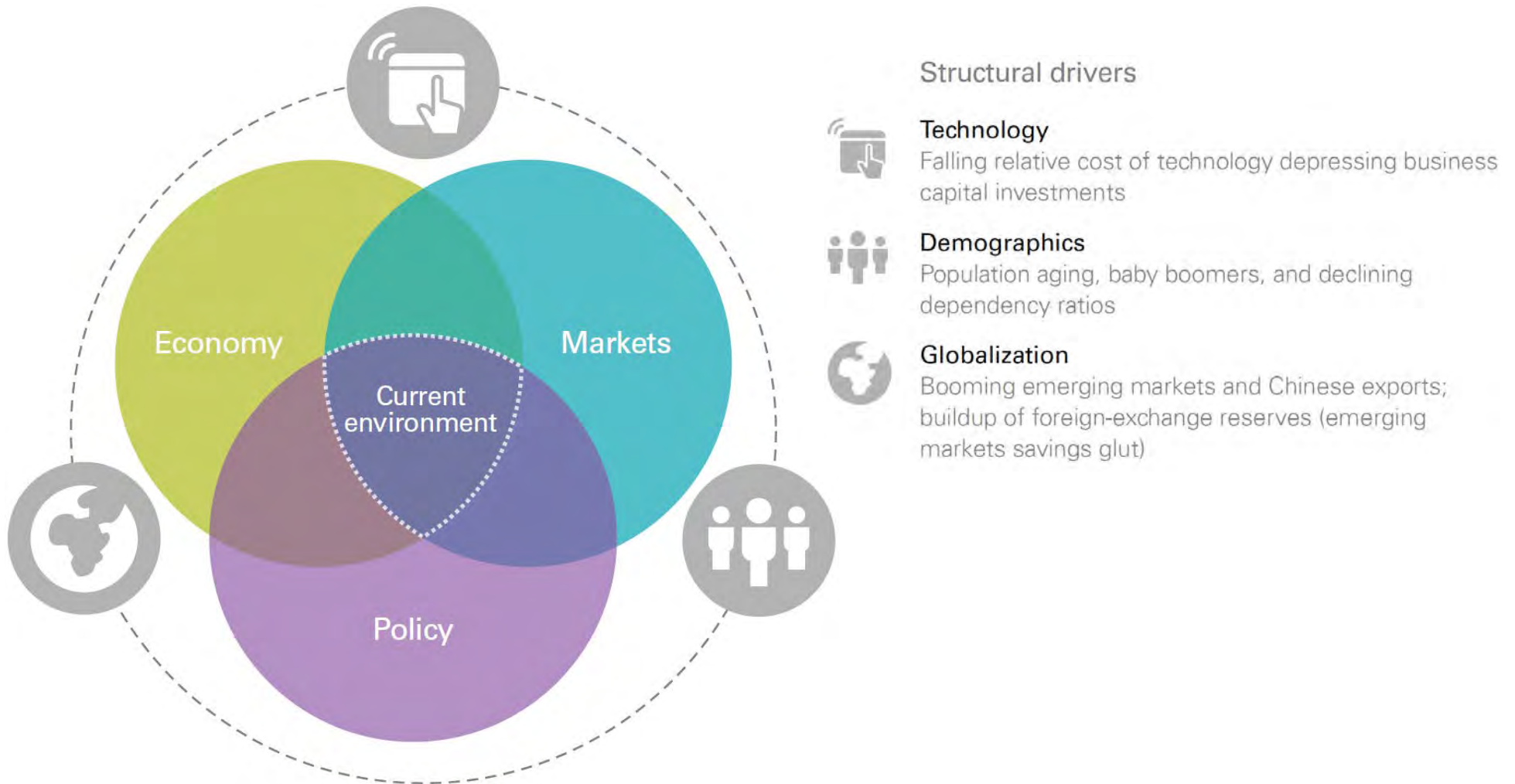
Vanguard's economic and investment outlook

Key takeaways

1. *Long-term* secular forces restraining growth: Short-term policies have little impact over them
2. Fiscal policy is positive for growth, but budget negotiations could be complex and uncertain
3. Federal Reserve to continue its gradual policy normalization. Interest rates to remain close to fair-value 2-2.5%
4. Equity valuations not too elevated considering current and expected levels for interest rates
5. Long-term portfolio returns expectations subdued relative to historical norms



Global economic outlook: Low growth, not stagnation

Long-term structural forces intersect to shape growth, policy, and interest rates



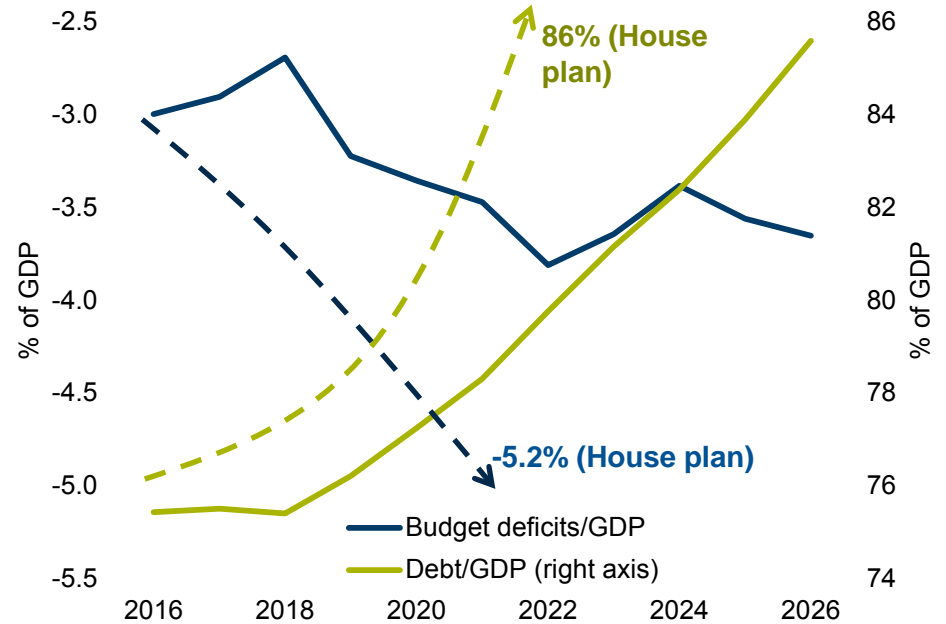
Implementation of fiscal policies may take time

Budget negotiations temper 2017 growth expectations

Components	2017 GDP growth
Trend growth	2%
Tax reform	+0 bp ? +65 bps 
Infrastructure	2018 or beyond
Positive sentiment	+0 bp ● +100 bps 
Bottom line	2.50%

Source: Vanguard based on Tax Policy Center, Bureau of Economic Analysis, Congressional Budget Office.

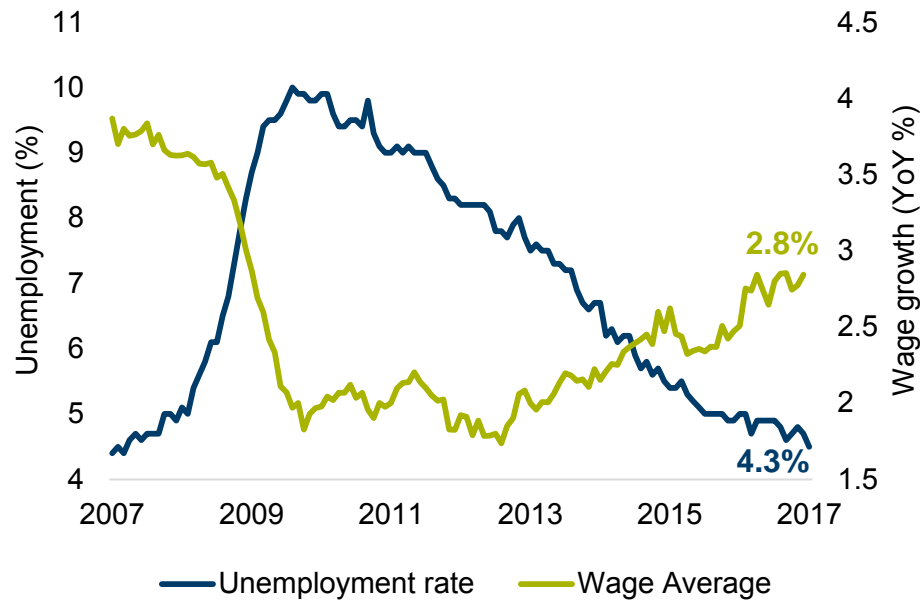
U.S. fiscal outlook (CBO baseline versus House plan)



Source: Vanguard, Tax Policy Center, Congressional Budget Office.

Fed pressing on with policy normalization

Fed has done its work with labor market



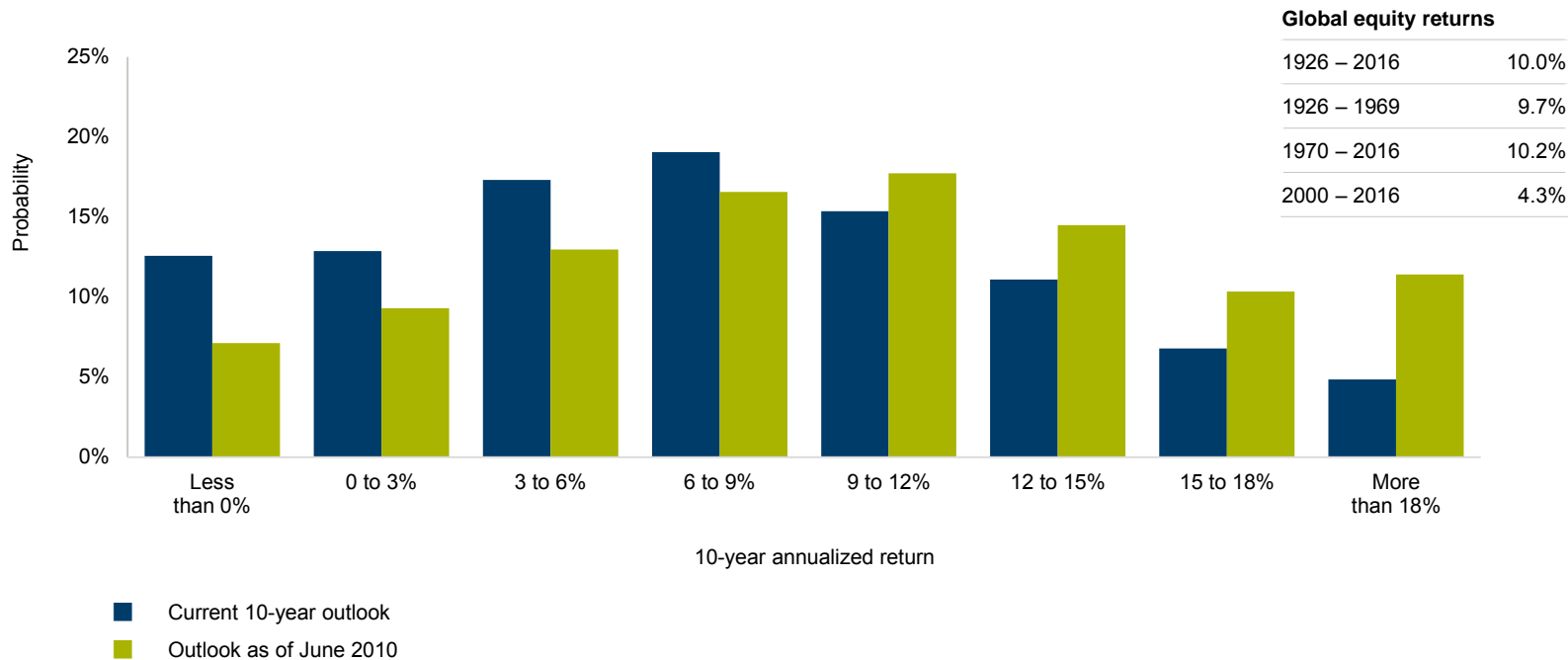
2-3 hikes in 2017 and announcement of balance sheet normalization

- **Ending level of rates (neutral rate, “r**”) closer to 2.5%**
- 2-3 hikes in 2017: possibly September
- Fed kicks off gradual tapering of reinvestments in Q3
- Tapering while leaving the FFR well below 2% thru 2018

Projected global equity ten-year return outlook

VCMM-simulated distribution of expected average annualized nominal return of global equity market as of June 2010 and December 2016

Global equity 60% US / 40% Global Ex US



IMPORTANT: The projections or 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 in USD. Simulations are as of December 31, 2016. Results from the model may vary with each use and over time. For more information, please see the important information slide.

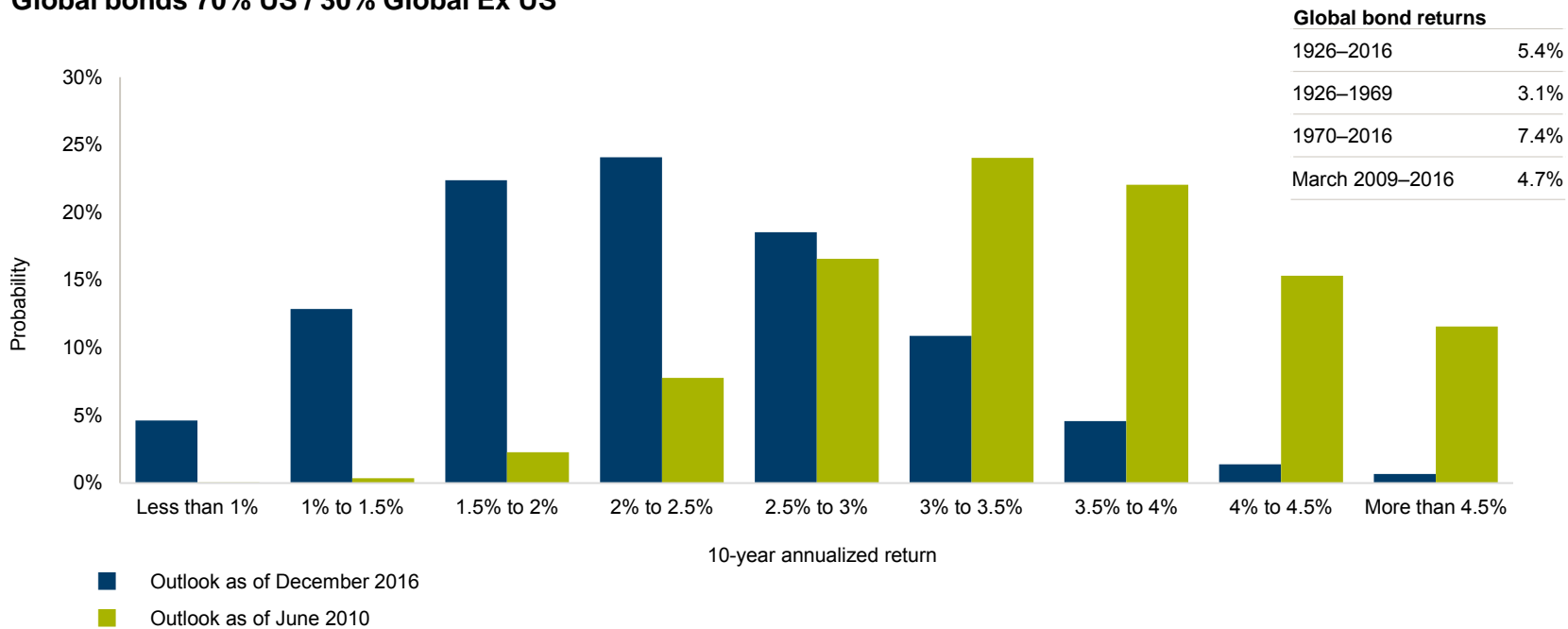
Sources: Vanguard.

Notes: Figure displays projected range of potential returns for portfolios of 60% U.S./40% ex-U.S. equities unhedged in USD, rebalanced annually. For details on benchmarks used for historical returns, see "Indexes used in our historical calculations," on page 5 of 2017 economic and market outlook: Stabilization, not stagnation (Davis et. al 2016).

Projected global fixed income ten-year return outlook

VCMM-simulated distribution of expected average annualized nominal return of total fixed income market as of June 2010 and December 2016

Global bonds 70% US / 30% Global Ex US



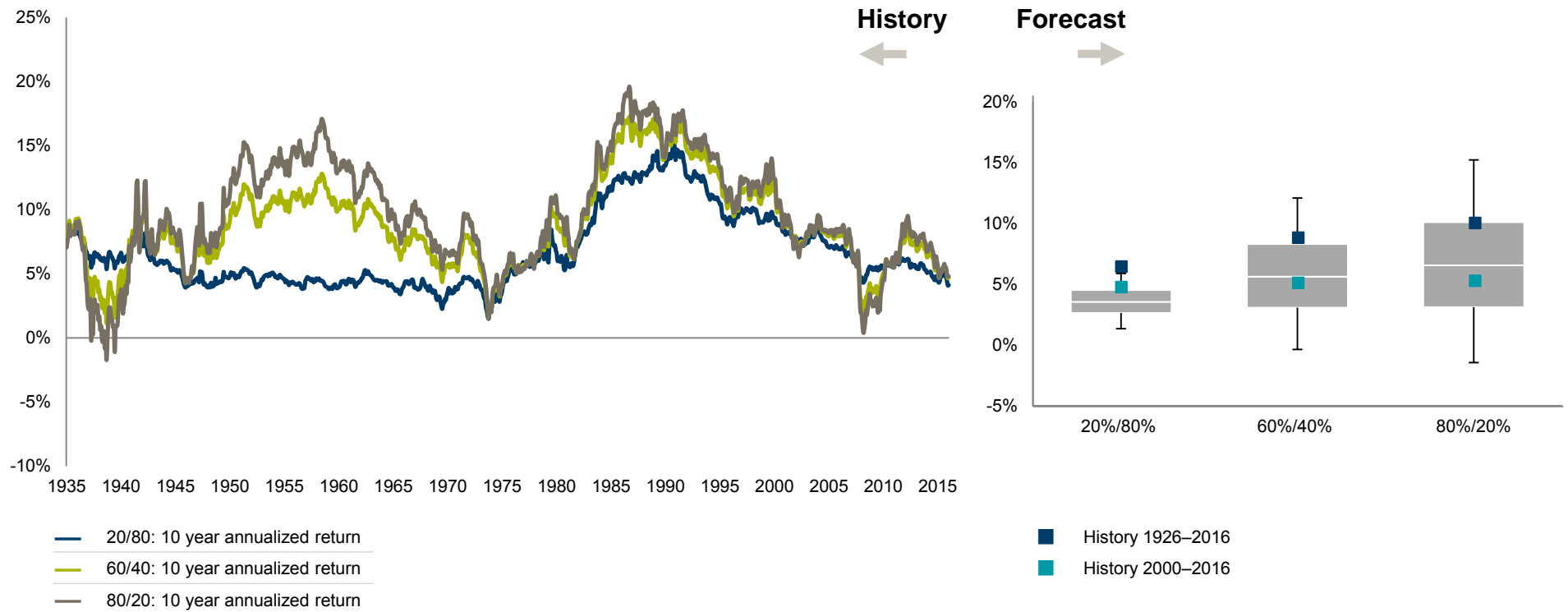
IMPORTANT: The projections or other information generated by the VCMM regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results, and are not guarantees of future results. Distribution of return outcomes from the VCMM are derived from 10,000 simulations for each modeled asset class in USD. Simulations are as of December 31, 2016. Results from the model may vary with each use and over time. For more information, please see the important information slide.

Sources: Vanguard.

Notes: Figure displays projected range of potential returns for portfolios of 70% U.S./30% ex-U.S. fixed income unhedged in USD, rebalanced annually. For details on benchmarks used for historical returns, see "Indexes used in our historical calculations," on page 5 of 2017 economic and market outlook: Stabilization, not stagnation (Davis et. al 2016).

Global Asset Returns: A guarded view given global crosscurrents of low yields and equity valuations

Historical and projected ten-year nominal return outlook for balanced portfolios



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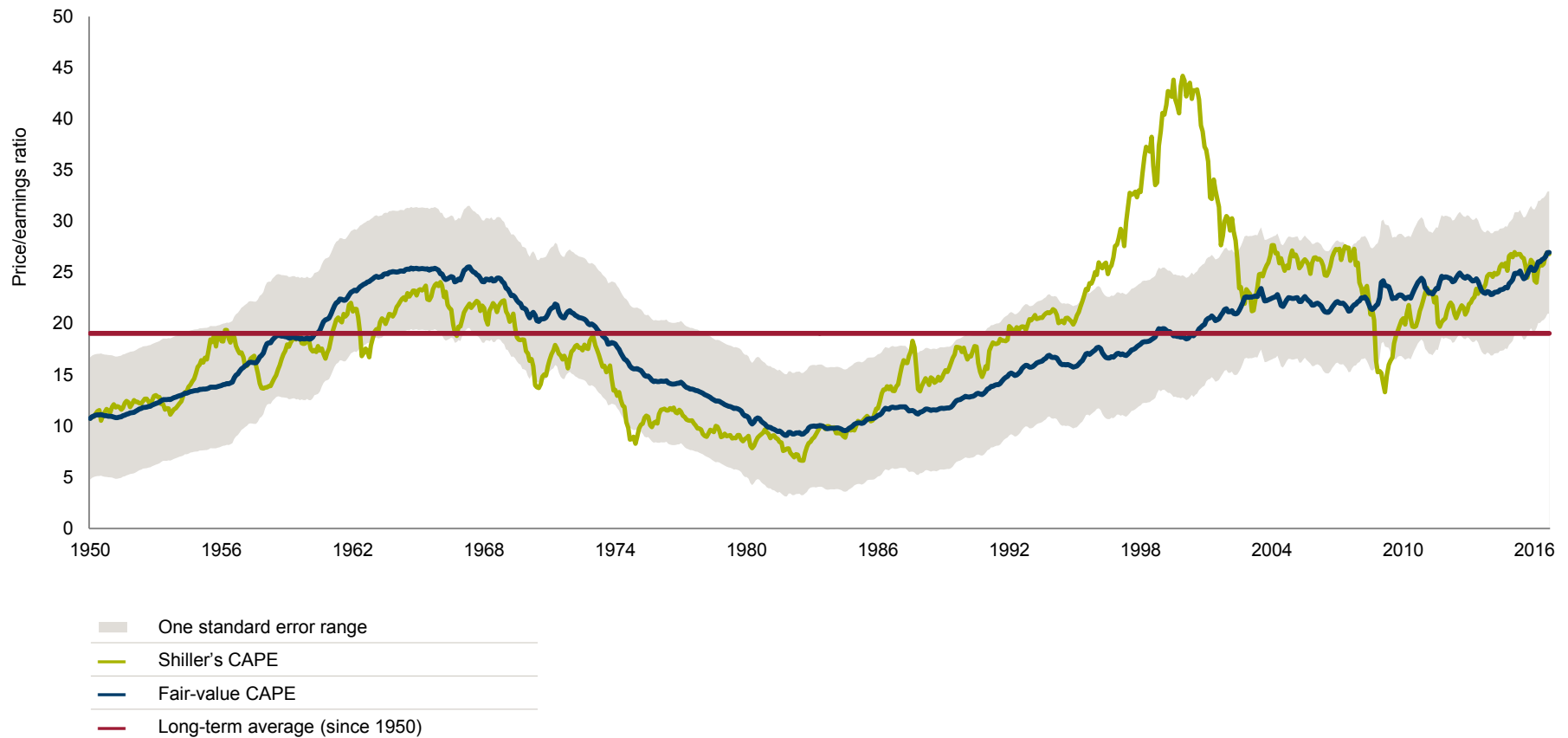
Sources: Vanguard.

Notes: Forecast displays 5th/25th/50th/75th/95th percentile ranges of 10,000 VCMM simulations for projected ten-year annualized nominal returns in USD. The equity portfolio is 60% U.S. equity and 40% global ex-U.S. equity. The bond portfolio is 70% U.S. bonds and 30% global ex-U.S. bonds. Data used for historical returns is as of December 31, 2016. For details on benchmarks used for historical returns, see "Indexes used in our historical calculations," on page 5 of 2017 economic and market outlook: *Stabilization, not stagnation* (Davis et. al 2016).

Appendix

U.S. equity market does not appear grossly 'overvalued' when adjusted for low rates

A comparison of Fair-value CAPE versus Shiller's CAPE



Sources: Vanguard calculations based on data from Online Data Robert Shiller, U.S. Bureau of Labor Statistics and Federal Reserve System.

Notes: Fair-value cyclically adjusted price to earnings (CAPE) ratio is based on a statistical model that adjusts the CAPE measure with respect to the current inflation expectations and 10-year Treasury nominal yield. The model's specification is a three-variable vector error correction model with the following inputs: S&P 500 Index earnings yield, 10-year Treasury yield and 10-year trailing inflation. The model is developed based on data beginning in January 1940 to September 30, 2016.

Economic growth and equity returns: Be wary of the allure of high economic growth

Real GDP growth and inflation-adjusted stock returns 1970-2015

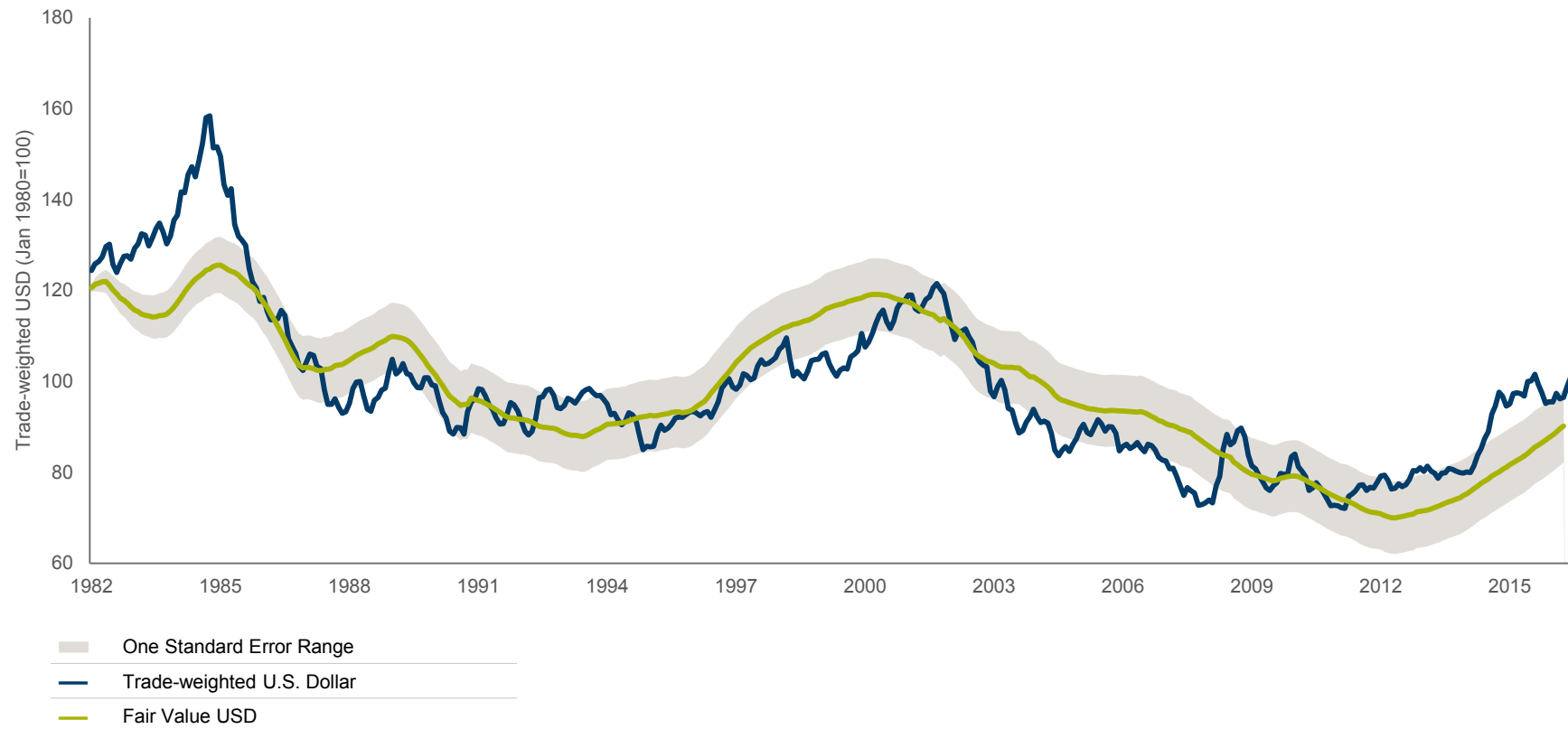


Sources: Vanguard calculations, using data from Thomson Reuters Datastream, Moody's Analytics, and International Monetary Fund.

Notes: Figures display each country's average annualized real GDP growth rate along with that country's average annualized real stock return. We include all members of the FTSE All World Index (except the United Arab Emirates, for a lack of return history). The period covered begins in 1970, with the starting point for each country depending on the availability of both returns and GDP data (most developed markets have data from 1970 onward, and most emerging markets have data from 1988 onward). Real growth rates are computed using data from the IMF's World Economic Outlook database (for data prior to 1980, we use the April 2004 database; otherwise we use the April 2013 database). Return data are based on MSCI country indexes spliced with FTSE indexes once the latter are available. Both growth and return data are in real local terms, with the index returns deflated using the GDP deflator from the IMF databases. The 95% confidence interval for the cross-sectional regression slope of returns on GDP growth is -0.51 to 0.61, with an R-squared of 0.00. Source: Vanguard, based on data from the IMF, MSCI, and FTSE.

U.S. dollar strength above and beyond macro fundamentals

Macro fundamentals support recent appreciation, and falls in early 2016 pushed dollar closer to fair value



Sources: Vanguard calculations, based on data from the Federal Reserve System, International Monetary Fund, U.S. Bureau of Labor Statistics, UK ONS, CANSIM, Bank of Canada, Eurostat, ECB, Japan Statistics Bureau, Swiss Federal Statistics Office, Statistics Sweden, Australian Bureau of Statistics, Statistics Austria, National Bank of Belgium, Statistical Service of the Republic of Cyprus, Bundesbank, Spain National Institute of Statistics, Statistics Estonia, Statistics Finland, Source French National Institute of Statistics and Economic Studies, Hellenic Statistical Authority, Ireland Central Statistics Office, Italian National Institute of Statistics, Japan Economic and Social Research Institute, Statistics Lithuania, STATEC Luxembourg, Central Statistical Bureau of Latvia, Malta National Statistics Office, Statistics Netherlands, Statistics Norway, Instituto Nacional de Estatística - Portugal, Statistical Office of the Slovak Republic, Statistical Office of the Republic of Slovenia, Germany Federal Statistics Office and Moody's Analytics.

Notes: Fair-value USD is based on a statistical model that corrects the nominal trade-weighted dollar (using the Federal Reserve's methodology) for the differentials between the U.S. and other countries in the Major Currencies Index on real GDP per capita, inflation, 10-year government bond yields, and the U.S. current account balance. The statistical model specification is a vector error correction (VEC), estimated over the period June 1981 to September 2016.

Fee analysis

Fee analysis

Portfolio assets	Market value as of June 30, 2017	Percent of portfolio	Expense ratio in basis points	Total fees in basis points
Equity				
Domestic				
Total Stock Market Index Fund Institutional Shares	\$65,217,686	38.96%	4	1.56
International				
Total International Stock Index Fund Institutional Shares	\$43,942,253	26.25%	9	2.36
Fixed Income				
Investment Grade				
Total Bond Market Index Fund Institutional Shares	\$42,065,110	25.13%	4	1.01
Other Investments				
REIT Index Fund Institutional Shares	\$16,170,424	9.66%	10	0.97
Total annual expense ratio in basis points				5.89
Market value	\$167,395,473			
Estimated total annual expense ratio in dollars				\$98,631.57
Portfolio fee statistics				
Total annual expense ratio in basis points				5.89
Total annual advisory fee in basis points				4.75
Total all-in fee in basis points				10.64
Total market value				\$167,395,473
Estimated total annual expense ratio in dollars				\$98,631.57
Estimated total annual advisory fee in dollars				\$79,479.09
Total all-in fee in dollars				\$178,110.66

Appendix

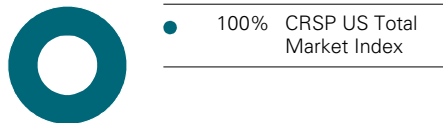
– Fund details

Vanguard Total Stock Market Index Fund (VITSX)

Investment approach

- Seeks to track the performance of the CRSP US Total Market Index.
- Large, mid-, and small-cap equity diversified across growth and value styles.
- Passively managed, using index sampling.
- Fund remains fully invested.
- Low expenses minimize net tracking error.

Share of U.S. stock market (%)



As measured by the MSCI US Broad Market Index.

Key facts

Expense ratio as of 04/27/2017	3.5 bps
As reported in the most recent prospectus.	
Designation	Domestic large-cap blend
Inception date	04/27/1992
Institutional Shares inception date	07/07/1997
Total net assets as of 06/30/2017 (\$M)	\$581,025
Net fund assets for VITSX as of 06/30/2017 (\$M)	\$95,459
Holdings	3,606
Indexed to	CRSP US Total Market Index (CRSPTMT)
Turnover rate (fiscal year-end 12/31/2016)	4.1%
CUSIP	922908801
Investment manager	Vanguard Equity Index Group

Risk and volatility

	R ²	Beta
Primary benchmark	1.00	1.00
Broad-based benchmark	1.00	1.00

R-squared and beta are calculated from trailing 36-month fund returns relative to the associated benchmark.
 Broad-based benchmark: Dow Jones U.S. Total Stock Market Float Adjusted Index.

Performance



	Annualized					
	Quarter-end	Year-to-date	1-year	3-year	5-year	10-year
Fund	3.03%	9.00%	18.50%	9.07%	14.55%	7.38%
Benchmark	3.04%	9.00%	18.49%	9.07%	14.56%	7.37%
+/- Benchmark	-0.01%	0.00%	0.01%	0.00%	-0.01%	0.01%

Spliced Total Stock Market Index: 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.

Performance versus competitors

Percentage of Multi-Cap Core Funds outperformed by VITSX



Source: Lipper, a Thomson Reuters Company. Based on total returns as of June 30, 2017. Number of funds in category: 1-year, 711; 3-year, 623; 5-year, 544; 10-year, 363. Results will vary for other time periods.

The performance data shown represent 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. For performance data current to the most recent month-end, visit our website at vanguard.com/performance.

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Vanguard Total International Stock Index Fund (VTSNX)

Investment approach

- Seeks to track the performance of the FTSE Global All Cap ex US Index.
- Broad exposure across developed and emerging non-U.S. equity markets.
- Passively managed.
- Fund remains fully invested.
- Low expenses minimize net tracking error.

Regional diversification



44.0%	Europe
29.7	Pacific
19.1	Emerging Markets
6.6	North America
0.4	Middle East
0.2	Other

Key facts

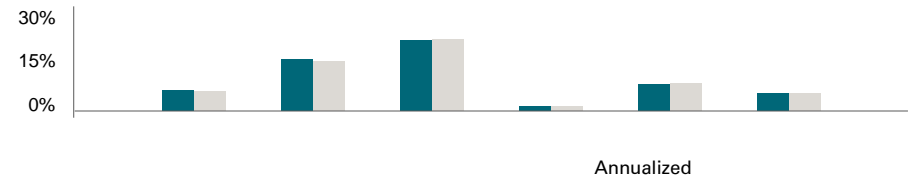
Expense ratio as of 02/23/2017	9 bps
As reported in the most recent prospectus.	
Designation	International/global blend
Inception date	04/29/1996
Institutional Shares inception date	11/29/2010
Total net assets as of 06/30/2017 (\$M)	\$283,435
Net fund assets for VTSNX as of 06/30/2017 (\$M)	\$25,875
Holdings	6,176
Indexed to	FTSE Global All Cap ex US Index (TGPVAN17)
Turnover rate (fiscal year-end 10/31/2016)	3.1%
CUSIP	921909784
Investment manager	Vanguard Equity Index Group

Risk and volatility

	R ²	Beta
Primary benchmark	0.98	0.95
Broad-based benchmark	0.98	0.95

R-squared and beta are calculated from trailing 36-month fund returns relative to the associated benchmark.
Broad-based benchmark: FTSE Global All Cap ex US Index.

Performance



	Quarter-end	Year-to-date	1-year	3-year	5-year	*Since inception
Fund	5.83%	14.78%	20.08%	1.37%	7.70%	4.96%
Benchmark	5.71%	14.06%	20.41%	1.37%	7.77%	4.93%
+/- Benchmark	0.12%	0.72%	-0.33%	0.00%	-0.07%	0.03%

Spliced Total International Stock Index: Total International Composite Index through August 31, 2006; MSCI EAFE + Emerging Markets Index through December 15, 2010; MSCI ACWI ex USA IMI Index through June 2, 2013; and FTSE Global All Cap ex US Index thereafter. Benchmark returns are adjusted for withholding taxes.

* Since fund's inception, November 29, 2010.

Performance versus competitors

Percentage of International Funds outperformed by VTSNX



Source: Lipper, a Thomson Reuters Company. Based on total returns as of June 30, 2017. Number of funds in category: 1-year, 1436; 3-year, 1175; 5-year, 1025. Results will vary for other time periods.

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Vanguard Total Bond Market Index Fund (VBTIX)

Investment approach

- Seeks to track the performance of the Bloomberg Barclays U.S. Aggregate Float Adjusted Index.
- Broadly diversified exposure to investment-grade U.S. bond market.
- Passively managed using index sampling.
- Intermediate-duration portfolio.
- Provides moderate current income with high credit quality.

Share of U.S. bond market (%)



- 100% Bloomberg Barclays U.S. Aggregate Float Adjusted Index

As measured by the Bloomberg Barclays U.S. Aggregate Bond Index.

Key facts

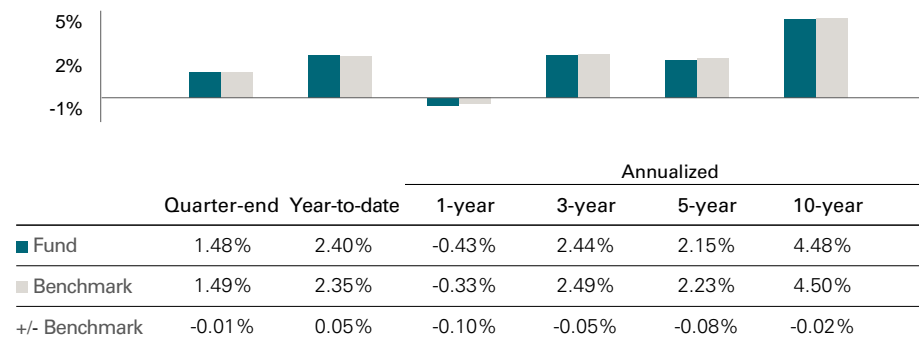
Expense ratio as of 04/26/2017	4 bps
As reported in the most recent prospectus.	
Designation	Treasury/agency/blend intermediate-term
Inception date	12/11/1986
Institutional Shares inception date	09/18/1995
Total net assets as of 06/30/2017 (\$M)	\$183,453
Net fund assets for VBTIX as of 06/30/2017 (\$M)	\$36,484
Holdings	8,174
Indexed to	Bloomberg Barclays U.S. Aggregate Float Adjusted Index (LBUFTRUU)
Turnover rate (fiscal year-end 12/31/2016)	61.0%
CUSIP	921937504
Investment manager	Vanguard Fixed Income Group

Risk and volatility

	R ²	Beta
Primary benchmark	0.99	1.04
Broad-based benchmark	0.99	1.04

R-squared and beta are calculated from trailing 36-month fund returns relative to the associated benchmark.
 Broad-based benchmark: Spliced Bloomberg Barclays U.S. Aggregate Float Adjusted Index.

Performance



Spliced Bloomberg Barclays U.S. Aggregate Float Adjusted Index: Bloomberg Barclays U.S. Aggregate Bond Index through December 31, 2009; Bloomberg Barclays U.S. Aggregate Float Adjusted Index thereafter.

Performance versus competitors

Percentage of Core Bond Funds Average outperformed by VBTIX



Source: Lipper, a Thomson Reuters Company. Based on total returns as of June 30, 2017. Number of funds in category: 1-year, 484; 3-year, 421; 5-year, 381; 10-year, 288. Results will vary for other time periods.

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Vanguard REIT Index Fund (VGSNX)

Investment approach

- Seeks to track the performance of the MSCI US REIT Index.
- Equity real estate investment trusts.
- Passively managed, full-replication approach.
- Benchmark index covers two-thirds of the REIT market.
- Low expenses minimize net tracking error.

Key facts

Expense ratio as of 05/25/2017	10 bps
As reported in the most recent prospectus.	
Designation	Sector/specialized
Inception date	05/13/1996
Institutional Shares inception date	12/02/2003
Total net assets as of 06/30/2017 (\$M)	\$63,353
Net fund assets for VGSNX as of 06/30/2017 (\$M)	\$8,185
Holdings	157
Indexed to	MSCI US REIT Index (RMSG)
Turnover rate (fiscal year-end 01/31/2017)	6.7%
CUSIP	921908869
Investment manager	Vanguard Equity Index Group

Risk and volatility

	R ²	Beta
Primary benchmark	1.00	1.00
Broad-based benchmark	0.22	0.67

R-squared and beta are calculated from trailing 36-month fund returns relative to the associated benchmark.
Broad-based benchmark: Dow Jones U.S. Total Stock Market Float Adjusted Index.

Performance



	Annualized					
	Quarter-end	Year-to-date	1-year	3-year	5-year	10-year
Fund	1.63%	2.60%	-1.88%	8.09%	9.30%	6.21%
Benchmark	1.65%	2.66%	-1.82%	8.19%	9.38%	6.16%
+/- Benchmark	-0.02%	-0.06%	-0.06%	-0.10%	-0.08%	0.05%

REIT Spliced Index: MSCI US REIT Index adjusted to include a 2% cash position (Lipper Money Market Average) through April 30, 2009; MSCI US REIT Index thereafter.

Performance versus competitors

Percentage of Real Estate Funds outperformed by VGSNX



Source: Lipper, a Thomson Reuters Company. Based on total returns as of June 30, 2017. Number of funds in category: 1-year, 244; 3-year, 216; 5-year, 187; 10-year, 129. Results will vary for other time periods.

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Important information

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

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

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

Important information

For more information about Vanguard funds or non-Vanguard funds offered through Vanguard Brokerage Services®, visit 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.

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