

# State of Montana 401(a) Plan

## Investment Performance Evaluation Report

As of December 31, 2015

Presented by:  
Donald R. Eibsen, CFA  
Buck Consultants  
1200 17th Street, Suite 1200  
Denver, CO 80202  
(720) 359-7700

# Introduction

This report reviews the investment performance of the State of Montana's 401(a) Plan for the quarter ending December 31, 2015, as well as other periods ending on that date. While the most recent quarter is the focus point of this report, we recommend concentration on longer time periods for the consideration of any changes to the investment policy or manager structure.

Performance measurement in this report is designed to:

- Provide an understanding of the environment in which the funds were managed;
- Verify that the assets were managed in compliance with guidelines;
- Assess the managers' strengths, continuity of style, and the means of achieving the performance; and
- Serve as a communications tool for internal focus, as well as to fulfill fiduciary obligations.

This report is based upon data provided by The State of Montana, Morningstar, Empower and fund management firms.

# Plan Overview

## Net Assets

- Plan assets totaled \$143.9 million, as of December 31, 2015. This is up from \$136.3 million, as of September 30, 2015.

## Asset Allocation

- Plan assets were allocated 8% to the Stable Value fund, 2% to Bond funds, 53% to Target Date/Balanced funds, 29% to U.S. Equity funds, and 8% to International Equity funds.

## Fund Updates

- Neuberger Berman High Income Bond Instl was added to the lineup during the fourth quarter.
- The Prudential Small Cap Value Z fund changed names to the Prudential QMA Small Cap Value Z fund.

# Fund Overview

As of December 31, 2015

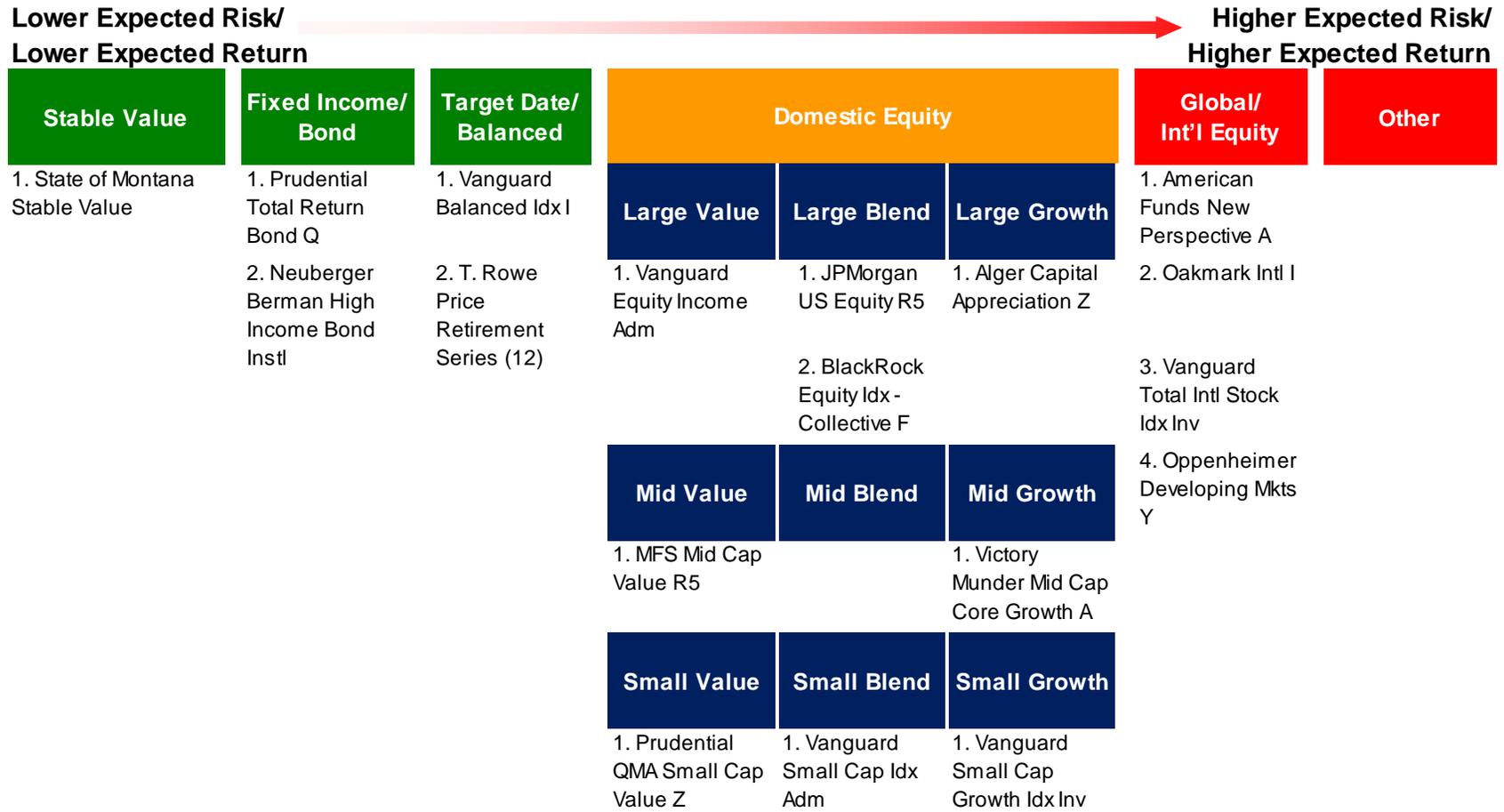
Asset Class	Fund	Ticker	Recommendation	Date of Status Change	Inception Date
Stable Value	State of Montana Stable Value	-	Retain		Sep-13
Fixed Income	Prudential Total Return Bond Q	PTRQX	Retain		Jul-14
Fixed Income	Neuberger Berman High Income Bond Instl	PTRQX	Retain		Oct-15
Balanced	Vanguard Balanced Index I	VBAIX	Retain		May-05
Target Date	T. Rowe Price Retirement Balanced	TRRIX	Retain		Oct-11
Target Date	T. Rowe Price Retirement 2005	TRRFX	Retain		Oct-11
Target Date	T. Rowe Price Retirement 2010	TRRAX	Retain		Oct-11
Target Date	T. Rowe Price Retirement 2015	TRRGX	Retain		Oct-11
Target Date	T. Rowe Price Retirement 2020	TRRBX	Retain		Oct-11
Target Date	T. Rowe Price Retirement 2025	TRRHX	Retain		Oct-11
Target Date	T. Rowe Price Retirement 2030	TRRCX	Retain		Oct-11
Target Date	T. Rowe Price Retirement 2035	TRRJX	Retain		Oct-11
Target Date	T. Rowe Price Retirement 2040	TRRDY	Retain		Oct-11
Target Date	T. Rowe Price Retirement 2045	TRRKX	Retain		Oct-11
Target Date	T. Rowe Price Retirement 2050	TRRMX	Retain		Oct-11
Target Date	T. Rowe Price Retirement 2055	TRRNX	Retain		Oct-11
Large Value	Vanguard Equity-Income Adm	VEIRX	Retain		Jul-02
Large Blend	BlackRock Equity Idx - Collective F	-	Retain		Apr-05
Large Blend	JPMorgan US Equity R5	JUSRX	Retain		May-11
Large Growth	Alger Capital Appreciation Z	ACAZX	Retain		Apr-12
Mid Value	MFS Mid Cap Value R5	MVCKX	Retain		Jun-13
Mid Growth	Victory Munder Mid-Cap Core Growth A	MGOAX	Probation	May-15	Jun-06
Small Value	Prudential QMA Small Cap Value Z	TASVX	Retain		Oct-08
Small Blend	Vanguard Small Cap Index Adm	VSMAX	Retain		Jul-02
Small Growth	Vanguard Small Cap Growth Index Inv	VISGX	Retain		Sep-10
International	American Funds New Perspective A	ANWPX	Retain		Jun-02
International	Oakmark International I	OAKIX	Retain		Sep-03
International	Vanguard Total Intl Stock Index Inv	VGTSX	Retain		Sep-10
International	Oppenheimer Developing Markets Y	ODVYX	Retain		Nov-12

# Asset Allocation

As of December 31, 2015

# of Options	Options	Plan Assets	% of Plan	# of Participants
1	<b>State of Montana Stable Value</b>	<b>\$11,643,386</b>	<b>8.1%</b>	392
	<b>Total Stable Value Fund</b>	<b>\$11,643,386</b>	<b>8%</b>	
1	Prudential Total Return Bond Q	\$2,556,841	1.8%	370
	Neuberger Berman High Income Bond Instl	\$59,643	<1%	7
	<b>Total Bond Funds</b>	<b>\$2,616,485</b>	<b>2%</b>	
13	<b>Vanguard Balanced Index I</b>	<b>\$60,489,584</b>	<b>42.1%</b>	1,627
	T. Rowe Price Retirement Balanced	\$68,736	<1%	16
	T. Rowe Price Retirement 2005	\$481,711	<1%	83
	T. Rowe Price Retirement 2010	\$108,447	<1%	14
	T. Rowe Price Retirement 2015	\$394,427	<1%	45
	T. Rowe Price Retirement 2020	\$967,781	<1%	100
	T. Rowe Price Retirement 2025	\$1,961,214	1.4%	132
	T. Rowe Price Retirement 2030	\$1,772,110	1.2%	118
	T. Rowe Price Retirement 2035	\$2,813,251	2.0%	166
	T. Rowe Price Retirement 2040	\$1,777,245	1.2%	161
	T. Rowe Price Retirement 2045	\$2,524,420	1.8%	219
	T. Rowe Price Retirement 2050	\$2,192,829	1.5%	207
	T. Rowe Price Retirement 2055	\$1,119,798	<1%	138
	<b>Total Target Date/Balanced Funds</b>	<b>\$76,671,556</b>	<b>53%</b>	
9	<b>Vanguard Equity-Income Adm</b>	<b>\$6,425,417</b>	<b>4.5%</b>	430
	BlackRock Equity Idx - Collective F	\$2,304,038	1.6%	211
	JPMorgan US Equity R5	\$3,081,558	2.1%	264
	<b>Alger Capital Appreciation Z</b>	<b>\$9,898,922</b>	<b>6.9%</b>	519
	MFS Mid Cap Value R5	\$5,215,576	3.6%	457
	Victory Munder Mid-Cap Core Growth A	\$3,671,302	2.6%	377
	Prudential QMA Small Cap Value Z	\$3,052,845	2.1%	314
	Vanguard Small Cap Index Adm	\$3,763,992	2.6%	366
	Vanguard Small Cap Growth Index Inv	\$4,163,761	2.9%	413
	<b>Total U.S. Equity Funds</b>	<b>\$41,577,412</b>	<b>29%</b>	
4	<b>American Funds New Perspective A</b>	<b>\$6,007,744</b>	<b>4.2%</b>	467
	Oakmark International I	\$3,806,560	2.6%	399
	Vanguard Total Intl Stock Index Inv	\$1,183,873	<1%	208
	Oppenheimer Developing Markets Y	\$339,379	<1%	89
	<b>Total International Equity Funds</b>	<b>\$11,337,556</b>	<b>8%</b>	
	<b>TOTAL</b>	<b>\$143,846,395</b>		

## Range of Investment Options



## Net-of-Fee Total Returns and Standard Deviations

As of December 31, 2015

Fund/Benchmark	YTD	(periods longer than 1 year are annualized)						Standard Deviation		Expense Ratio
	2/9/16	3 Months	YTD	1 Year	3 Years	5 Years	10 Years	3 Years	5 Years	
<b>State of Montana Stable Value (net)</b>	-	-0.57	0.84	0.84	0.33	2.15	4.03	-	-	0.50
Barclays US Govt/Credit Interm +0.35%	-	-0.60	1.42	1.42	1.45	2.93	4.39	-	-	-
<b>Prudential Total Return Bond Q</b>	1.15	-0.74	0.09	0.09	2.08	4.77	5.81	3.81	3.58	0.46
Barclays US Agg Bond	1.99	-0.57	0.55	0.55	1.44	3.25	4.51	2.92	2.71	-
Avg Intermediate-Term Bond	0.90	-0.60	-0.26	-0.26	1.16	3.22	4.18	2.98	2.84	0.84
<b>Neuberger Berman High Income Bond Instl</b>	-3.36	-1.72	-4.77	-4.77	1.31	4.21	6.66	5.68	6.68	0.69
BofAML US HY Master II Constnd	-4.36	-2.16	-4.61	-4.61	1.65	4.84	6.82	5.34	6.25	-
Avg High Yield Bond	-3.76	-1.95	-4.01	-4.01	1.28	4.11	5.58	5.19	6.24	1.08

Green indicates fund outperformed both benchmarks / Blue indicates fund performed between benchmarks / Red indicates fund underperformed both benchmarks

## Net-of-Fee Total Returns and Standard Deviations

As of December 31, 2015

Fund/Benchmark	YTD (periods longer than 1 year are annualized)						Standard Deviation		Expense Ratio	
	2/9/16	3 Months	YTD	1 Yr	3 Yr	5 Yr	10 Yr	3 Yr		5 Yr
<b>T. Rowe Price Retirement Balanced</b>	<b>-3.70</b>	<b>1.66</b>	<b>-0.74</b>	<b>-0.74</b>	<b>4.03</b>	<b>4.67</b>	<b>4.87</b>	<b>4.97</b>	<b>5.98</b>	<b>0.56</b>
DJ Target Today	-0.27	0.35	-0.63	-0.63	1.53	3.04	4.39	3.00	3.10	-
Avg Retirement Income	-2.92	0.90	-1.50	-1.50	2.49	3.60	3.76	4.27	4.63	0.88
<b>T. Rowe Price Retirement 2005</b>	<b>-3.54</b>	<b>1.76</b>	<b>-0.75</b>	<b>-0.75</b>	<b>4.48</b>	<b>5.20</b>	<b>5.17</b>	<b>5.28</b>	<b>6.49</b>	<b>0.58</b>
DJ Target 2005	-0.27	0.35	-0.63	-0.63	1.59	3.10	4.39	3.03	3.19	-
Avg Target Date 2000-2010	-3.77	1.51	-1.18	-1.18	4.03	4.68	3.89	4.97	6.03	0.82
<b>T. Rowe Price Retirement 2010</b>	<b>-4.15</b>	<b>2.00</b>	<b>-0.76</b>	<b>-0.76</b>	<b>5.26</b>	<b>5.68</b>	<b>5.30</b>	<b>5.81</b>	<b>7.36</b>	<b>0.58</b>
DJ Target 2010	-0.36	0.42	-0.72	-0.72	2.14	3.45	4.40	3.30	3.58	-
Avg Target Date 2000-2010	-3.77	1.51	-1.18	-1.18	4.03	4.68	3.89	4.97	6.03	0.82
<b>T. Rowe Price Retirement 2015</b>	<b>-5.34</b>	<b>2.62</b>	<b>-0.58</b>	<b>-0.58</b>	<b>6.46</b>	<b>6.48</b>	<b>5.65</b>	<b>6.69</b>	<b>8.44</b>	<b>0.62</b>
DJ Target 2015	-0.62	0.61	-0.97	-0.97	2.96	3.97	4.52	3.79	4.38	-
Avg Target Date 2011-2015	-4.41	1.68	-1.34	-1.34	4.35	5.04	4.53	5.47	6.91	0.84
<b>T. Rowe Price Retirement 2020</b>	<b>-6.65</b>	<b>3.23</b>	<b>-0.31</b>	<b>-0.31</b>	<b>7.52</b>	<b>7.15</b>	<b>5.88</b>	<b>7.48</b>	<b>9.44</b>	<b>0.66</b>
DJ Target 2020	-1.92	1.11	-1.04	-1.04	4.19	4.74	4.88	4.65	5.59	-
Avg Target Date 2016-2020	-5.14	1.96	-1.57	-1.57	4.72	5.11	4.17	6.05	7.29	0.91
<b>T. Rowe Price Retirement 2025</b>	<b>-7.69</b>	<b>3.73</b>	<b>-0.17</b>	<b>-0.17</b>	<b>8.47</b>	<b>7.71</b>	<b>6.06</b>	<b>8.23</b>	<b>10.32</b>	<b>0.69</b>
DJ Target 2025	-3.70	1.75	-1.11	-1.11	5.47	5.52	5.26	5.75	7.08	-
Avg Target Date 2021-2025	-6.52	2.58	-1.59	-1.59	6.01	6.17	4.48	7.14	8.88	0.89
<b>T. Rowe Price Retirement 2030</b>	<b>-8.67</b>	<b>4.19</b>	<b>-0.02</b>	<b>-0.02</b>	<b>9.28</b>	<b>8.21</b>	<b>6.25</b>	<b>8.82</b>	<b>11.07</b>	<b>0.72</b>
DJ Target 2030	-5.72	2.50	-1.21	-1.21	6.71	6.21	5.57	6.97	8.63	-
Avg Target Date 2026-2030	-7.50	3.00	-1.79	-1.79	6.32	5.99	4.41	7.90	9.44	0.95

## Net-of-Fee Total Returns and Standard Deviations

As of December 31, 2015

Fund/Benchmark	YTD	(periods longer than 1 year are annualized)					Standard Deviation		Expense Ratio	
	2/9/16	3 Months	YTD	1 Yr	3 Yr	5 Yr	10 Yr	3 Yr		5 Yr
<b>T. Rowe Price Retirement 2035</b>	<b>-9.50</b>	<b>4.59</b>	<b>0.13</b>	<b>0.13</b>	<b>9.87</b>	<b>8.53</b>	<b>6.33</b>	<b>9.32</b>	<b>11.66</b>	<b>0.74</b>
DJ Target 2035	-7.44	3.14	-1.61	-1.61	7.67	6.72	5.79	8.13	9.99	-
Avg Target Date 2031-2035	-8.73	3.56	-1.76	-1.76	7.42	6.92	4.79	8.76	10.72	0.92
<b>T. Rowe Price Retirement 2040</b>	<b>-10.19</b>	<b>4.90</b>	<b>0.17</b>	<b>0.17</b>	<b>10.23</b>	<b>8.73</b>	<b>6.45</b>	<b>9.72</b>	<b>11.99</b>	<b>0.75</b>
DJ Target 2040	-8.78	3.64	-1.94	-1.94	8.36	7.10	5.97	9.04	10.98	-
Avg Target Date 2036-2040	-9.13	3.70	-1.99	-1.99	7.27	6.48	4.60	9.11	10.80	0.97
<b>T. Rowe Price Retirement 2045</b>	<b>-10.22</b>	<b>4.89</b>	<b>0.17</b>	<b>0.17</b>	<b>10.22</b>	<b>8.74</b>	<b>6.45</b>	<b>9.72</b>	<b>11.97</b>	<b>0.75</b>
DJ Target 2045	-9.65	3.95	-2.15	-2.15	8.72	7.31	6.09	9.57	11.48	-
Avg Target Date 2041-2045	-9.75	3.99	-1.87	-1.87	7.97	7.25	5.15	9.48	11.45	0.94
<b>T. Rowe Price Retirement 2050</b>	<b>-10.28</b>	<b>4.96</b>	<b>0.19</b>	<b>0.19</b>	<b>10.23</b>	<b>8.76</b>	-	<b>9.69</b>	<b>11.95</b>	<b>0.75</b>
DJ Target 2050	-9.95	4.06	-2.23	-2.23	8.76	7.33	6.10	9.71	11.55	-
Avg Target Date 2046-2050	-9.60	3.92	-2.01	-2.01	7.66	6.71	4.78	9.55	11.26	0.99
<b>T. Rowe Price Retirement 2055</b>	<b>-10.31</b>	<b>4.91</b>	<b>0.18</b>	<b>0.18</b>	<b>10.21</b>	<b>8.76</b>	-	<b>9.73</b>	<b>11.96</b>	<b>0.75</b>
DJ Target 2055	-9.95	4.06	-2.23	-2.23	8.76	7.33	6.10	9.71	11.55	-
Avg Target Date 2051+	-9.90	4.14	-1.71	-1.71	8.57	7.45	-	9.63	11.77	0.94
<b>Vanguard Balanced Index I</b>	<b>-5.41</b>	<b>3.38</b>	<b>0.52</b>	<b>0.52</b>	<b>9.30</b>	<b>8.72</b>	<b>6.65</b>	<b>6.48</b>	<b>7.12</b>	<b>0.08</b>
Custom Vanguard Bal Index <sup>(1)</sup>	-5.46	3.53	0.76	0.76	9.46	8.92	6.96	6.47	7.10	-
Avg Moderate Allocation	-6.55	2.57	-1.93	-1.93	6.96	6.51	5.23	7.28	8.34	1.23
Barclays US Agg Bond	1.99	-0.57	0.55	0.55	1.44	3.25	4.51	2.92	2.71	-
S&P 500	-9.19	7.04	1.38	1.38	15.13	12.57	7.31	10.62	11.70	-

<sup>(1)</sup> Reflects fund's index changes over time. 60% DJ US Total Market Index/40% Barclays US Agg Float Adj Index since 1/14/13.

## Net-of-Fee Total Returns and Standard Deviations

As of December 31, 2015

Fund/Benchmark	YTD	(periods longer than 1 year are annualized)						Standard Deviation		Expense Ratio
	2/9/16	3 Months	YTD	1 Year	3 Years	5 Years	10 Years	3 Years	5 Years	
<b>Vanguard Equity-Income Adm</b>	<b>-5.84</b>	<b>7.09</b>	<b>0.86</b>	<b>0.86</b>	<b>13.51</b>	<b>12.95</b>	<b>8.07</b>	<b>10.28</b>	<b>10.52</b>	<b>0.17</b>
Russell 1000 Value	-8.95	5.64	-3.83	-3.83	13.08	11.27	6.16	10.83	12.12	-
Avg Large Value	-9.11	4.73	-4.05	-4.05	11.63	9.75	5.59	11.00	12.25	1.12
<b>BlackRock Equity Idx - Collective F</b>	<b>-</b>	<b>7.05</b>	<b>1.45</b>	<b>1.45</b>	<b>15.19</b>	<b>12.64</b>	<b>7.43</b>	<b>-</b>	<b>-</b>	<b>0.04</b>
<b>JPMorgan US Equity R5</b>	<b>-12.17</b>	<b>7.18</b>	<b>0.84</b>	<b>0.84</b>	<b>16.06</b>	<b>12.58</b>	<b>8.88</b>	<b>11.16</b>	<b>12.67</b>	<b>0.57</b>
S&P 500	-9.19	7.04	1.38	1.38	15.13	12.57	7.31	10.62	11.70	-
Avg Large Blend	-9.80	5.56	-1.07	-1.07	13.22	10.75	6.44	10.98	12.33	1.05
<b>Alger Capital Appreciation Z</b>	<b>-13.81</b>	<b>8.28</b>	<b>6.56</b>	<b>6.56</b>	<b>17.84</b>	<b>13.96</b>	<b>10.55</b>	<b>11.45</b>	<b>13.29</b>	<b>0.93</b>
Russell 1000 Growth	-10.66	7.32	5.67	5.67	16.83	13.53	8.53	10.85	12.02	-
Avg Large Growth	-13.47	6.73	3.60	3.60	15.27	11.70	7.33	11.58	13.22	1.18
<b>MFS Mid Cap Value R5</b>	<b>-9.63</b>	<b>2.86</b>	<b>-2.14</b>	<b>-2.14</b>	<b>13.82</b>	<b>11.35</b>	<b>7.13</b>	<b>10.99</b>	<b>12.83</b>	<b>0.81</b>
Russell Mid Cap Value	-9.94	3.12	-4.78	-4.78	13.40	11.25	7.61	10.86	12.65	-
Avg Mid Value	-10.88	2.68	-5.41	-5.41	11.50	9.06	6.59	11.59	13.72	1.21
<b>Victory Munder Mid-Cap Core Growth A</b>	<b>-13.19</b>	<b>1.38</b>	<b>-4.60</b>	<b>-4.60</b>	<b>11.82</b>	<b>9.88</b>	<b>7.27</b>	<b>11.36</b>	<b>13.59</b>	<b>1.32</b>
Russell Mid Cap	-11.73	3.62	-2.44	-2.44	14.18	11.44	8.00	11.00	13.05	-
Avg Mid Growth	-15.27	3.31	-0.95	-0.95	12.82	9.59	7.16	12.21	14.38	1.29
Russell Mid Cap Growth	-13.51	4.12	-0.20	-0.20	14.88	11.54	8.16	11.47	13.73	-

## Net-of-Fee Total Returns and Standard Deviations

As of December 31, 2015

Fund/Benchmark	(periods longer than 1 year are annualized)							Standard Deviation		Expense Ratio
	YTD 2/9/16	3 Months	YTD	1 Year	3 Years	5 Years	10 Years	3 Years	5 Years	
<b>Prudential QMA Small Cap Value Z</b>	<b>-12.67</b>	<b>3.56</b>	<b>-7.04</b>	<b>-7.04</b>	<b>10.18</b>	<b>8.72</b>	<b>7.40</b>	<b>13.43</b>	<b>14.54</b>	<b>0.72</b>
Russell 2000 Value	-11.56	2.88	-7.47	-7.47	9.06	7.67	5.57	13.65	15.33	-
Avg Small Value	-11.25	2.02	-6.71	-6.71	9.43	7.68	6.01	13.41	15.34	1.33
<b>Vanguard Small Cap Index Adm</b>	<b>-13.31</b>	<b>3.11</b>	<b>-3.64</b>	<b>-3.64</b>	<b>12.60</b>	<b>10.43</b>	<b>7.95</b>	<b>12.66</b>	<b>15.02</b>	<b>0.09</b>
Custom Vanguard SC Index <sup>(1)</sup>	-13.30	3.10	-3.68	-3.68	12.58	10.40	7.87	12.64	15.01	-
Avg Small Blend	-12.76	2.68	-5.38	-5.38	10.34	8.22	6.27	13.69	15.64	1.24
<b>Vanguard Small Cap Growth Index Inv</b>	<b>-16.47</b>	<b>3.47</b>	<b>-2.64</b>	<b>-2.64</b>	<b>11.75</b>	<b>10.05</b>	<b>8.22</b>	<b>12.95</b>	<b>15.70</b>	<b>0.23</b>
Custom Vanguard SC Growth Index <sup>(2)</sup>	-16.48	3.50	-2.60	-2.60	11.77	9.99	8.15	12.97	15.69	-
Avg Small Growth	-17.31	2.84	-2.41	-2.41	12.20	9.40	7.14	14.50	16.30	1.33
<b>American Funds New Perspective A</b>	<b>-12.88</b>	<b>6.78</b>	<b>5.34</b>	<b>5.34</b>	<b>11.30</b>	<b>9.00</b>	<b>7.50</b>	<b>10.75</b>	<b>12.52</b>	<b>0.75</b>
MSCI ACWI	-10.14	5.03	-2.36	-2.36	7.69	6.09	4.76	10.94	13.06	-
Avg World Stock	-10.28	4.14	-1.69	-1.69	8.26	6.51	4.95	11.28	13.41	1.29
<b>Oakmark International I</b>	<b>-15.54</b>	<b>5.19</b>	<b>-3.83</b>	<b>-3.83</b>	<b>5.57</b>	<b>5.49</b>	<b>6.16</b>	<b>14.14</b>	<b>16.38</b>	<b>0.95</b>
MSCI World Ex USA	-11.16	3.91	-3.04	-3.04	3.93	2.79	2.92	12.45	14.79	-
<b>Vanguard Total Intl Stock Index Inv</b>	<b>-10.49</b>	<b>2.68</b>	<b>-4.37</b>	<b>-4.37</b>	<b>1.75</b>	<b>1.24</b>	<b>2.82</b>	<b>12.00</b>	<b>14.92</b>	<b>0.19</b>
Custom Vanguard Intl Index <sup>(3)</sup>	-10.51	3.61	-4.29	-4.29	2.29	1.43	2.97	12.08	14.86	-
Avg Foreign Large Blend	-11.13	3.58	-1.59	-1.59	3.67	2.60	2.79	11.96	14.69	1.16
<b>Oppenheimer Developing Markets Y</b>	<b>-10.54</b>	<b>4.67</b>	<b>-13.84</b>	<b>-13.84</b>	<b>-3.68</b>	<b>-2.29</b>	<b>6.16</b>	<b>14.69</b>	<b>16.85</b>	<b>1.05</b>
MSCI EM	-8.03	0.66	-14.92	-14.92	-6.76	-4.81	3.61	14.25	17.79	-
Avg Diversified Emerging Mkts	-8.48	0.69	-13.79	-13.79	-5.69	-4.45	3.19	13.67	17.25	1.53

<sup>(1)</sup> Reflects changes to fund's index over time. Russell 2000 Index through 5/16/03; MSCI US Small Cap 1750 Index through 1/30/13; and the CRSP US Small Cap Index thereafter.

<sup>(2)</sup> Reflects changes to fund's index over time. S&P SmallCap 600 Growth Index through 5/16/03; MSCI US Small Cap Growth Index through 4/16/13; and the CRSP US Small Cap Growth Index thereafter.

<sup>(3)</sup> Reflects changes to fund's index over time. MSCI EAFE & EM Index through 12/15/10; MSCI ACWI ex US Index through 6/02/13; and the FTSE Global All Cap ex US Index thereafter.

# Modern Portfolio Theory (MPT) Analytics

As of December 31, 2015

Fund/Benchmark	5 - Year						10 Year Batting Average
	Alpha	Beta	Tracking Error	Information Ratio	Upside Capture	Downside Capture	
<b>Vanguard Equity-Income Adm</b>	<b>1.91</b>	<b>0.87</b>	<b>3.28</b>	<b>0.12</b>	<b>95</b>	<b>86</b>	<b>45</b>
Avg Large Value	-2.56	1.01	3.49	-0.85	94	111	44
<b>JPMorgan US Equity R5</b>	<b>-0.75</b>	<b>1.07</b>	<b>2.16</b>	<b>0.01</b>	<b>103</b>	<b>106</b>	<b>62</b>
Avg Large Blend	-1.89	1.03	2.67	-1.37	97	108	42
<b>Alger Capital Appreciation Z</b>	<b>0.38</b>	<b>1.09</b>	<b>4.06</b>	<b>0.34</b>	<b>107</b>	<b>102</b>	<b>55</b>
Avg Large Growth	-1.32	1.06	4.62	-0.21	99	105	50
<b>MFS Mid Cap Value R5</b>	<b>-1.40</b>	<b>1.04</b>	<b>4.23</b>	<b>-0.29</b>	<b>99</b>	<b>108</b>	<b>56</b>
Avg Mid Value	-4.07	1.09	5.22	-0.67	97	123	50
<b>Victory Munder Mid-Cap Core Growth A</b>	<b>-3.16</b>	<b>1.08</b>	<b>5.19</b>	<b>-0.52</b>	<b>93</b>	<b>109</b>	<b>50</b>
Avg Mid Growth	-3.60	1.10	6.54	-0.46	96	115	51
<b>Prudential QMA Small Cap Value Z</b>	<b>-4.73</b>	<b>1.13</b>	<b>6.31</b>	<b>-0.61</b>	<b>98</b>	<b>127</b>	<b>53</b>
Avg Small Value	-5.75	1.14	7.83	-0.63	97	133	49
<b>Vanguard Small Cap Index Adm</b>	<b>-3.68</b>	<b>1.18</b>	<b>6.40</b>	<b>-0.33</b>	<b>106</b>	<b>128</b>	<b>54</b>
Avg Small Blend	-5.56	1.17	7.87	-0.54	99	133	50
<b>Vanguard Small Cap Growth Index Inv</b>	<b>-4.12</b>	<b>1.19</b>	<b>7.60</b>	<b>-0.33</b>	<b>104</b>	<b>129</b>	<b>53</b>
Avg Small Growth	-4.35	1.17	9.10	-0.35	100	126	52
<b>American Funds New Perspective A</b>	<b>7.69</b>	<b>0.79</b>	<b>5.13</b>	<b>1.55</b>	<b>97</b>	<b>58</b>	<b>55</b>
Avg World Stock	5.43	0.82	6.26	0.90	95	67	53
<b>Oakmark International I</b>	<b>4.49</b>	<b>1.01</b>	<b>6.23</b>	<b>0.71</b>	<b>118</b>	<b>96</b>	<b>54</b>
<b>Vanguard Total Intl Stock Index Inv</b>	<b>0.20</b>	<b>0.99</b>	<b>2.00</b>	<b>0.09</b>	<b>100</b>	<b>99</b>	<b>48</b>
Avg Foreign Large Blend	1.58	0.94	4.16	0.39	98	91	48
<b>Oppenheimer Developing Markets Y</b>	<b>-3.14</b>	<b>1.03</b>	<b>6.88</b>	<b>-0.49</b>	<b>88</b>	<b>105</b>	<b>60</b>
Avg Diversified Emerging Mkts	-5.30	1.03	7.91	-0.69	82	111	52

Reported modern portfolio theory (MPT) statistics are calculated with respect to the S&P 500 Index for domestic equity funds. Statistics are calculated relative to the MSCI EAFE Index for international equity funds.

## Stable Value and Bond Funds

### Annual Net-of-Fee Total Returns

Fund/Benchmark	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
<b>State of Montana Stable Value</b>	<b>0.84</b>	<b>2.15</b>	<b>-1.95</b>	<b>4.82</b>	<b>5.04</b>	<b>6.47</b>	<b>13.71</b>	<b>-3.45</b>	<b>9.35</b>	<b>4.48</b>
Barclays US Govt/Credit Interm +0.35%	1.42	3.48	-0.51	4.24	6.15	6.24	5.59	5.43	7.74	4.43
<b>Prudential Total Return Bond Q</b>	<b>0.09</b>	<b>7.25</b>	<b>-0.91</b>	<b>9.96</b>	<b>7.93</b>	<b>9.73</b>	<b>19.68</b>	<b>-3.55</b>	<b>5.42</b>	<b>4.39</b>
Barclays US Agg Bond	0.55	5.97	-2.02	4.21	7.84	6.54	5.93	5.24	6.97	4.33
Avg Intermediate-Term Bond	-0.26	5.18	-1.42	7.01	5.86	7.72	13.97	-4.70	4.70	4.15
<b>Neuberger Berman High Income Bond Instl</b>	<b>-4.77</b>	<b>1.51</b>	<b>7.57</b>	<b>14.64</b>	<b>3.12</b>	<b>14.71</b>	<b>52.16</b>	<b>-19.09</b>	<b>1.61</b>	<b>8.00</b>
BofAML US HY Master II Constnd	-4.61	2.51	7.41	15.55	4.37	15.07	58.10	-26.11	2.53	10.76
Avg High Yield Bond	-4.01	1.11	6.90	14.67	2.83	14.24	46.70	-26.41	1.47	10.14

Green indicates fund outperformed both benchmarks / Blue indicates fund performed between benchmarks / Red indicates fund underperformed both benchmarks

## Target Date Funds

### Annual Net-of-Fee Total Returns

Fund/Benchmark	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
<b>T. Rowe Price Retirement Balanced</b>	<b>-0.74</b>	<b>3.91</b>	<b>9.15</b>	<b>10.05</b>	<b>1.43</b>	<b>10.10</b>	<b>22.07</b>	<b>-18.39</b>	<b>6.09</b>	<b>9.98</b>
DJ Target Today	-0.63	3.86	1.41	5.44	5.26	8.53	10.83	-3.06	6.48	6.52
Avg Retirement Income	-1.54	4.36	7.36	9.01	1.60	8.94	18.36	-18.06	4.46	7.34
<b>T. Rowe Price Retirement 2005</b>	<b>-0.75</b>	<b>4.72</b>	<b>9.74</b>	<b>11.35</b>	<b>1.43</b>	<b>11.51</b>	<b>24.55</b>	<b>-22.24</b>	<b>6.67</b>	<b>11.50</b>
DJ Target 2005	-0.63	3.92	1.54	5.66	5.15	8.90	11.89	-5.47	6.84	7.14
Avg Target Date 2000-2010	-1.19	4.10	8.30	9.61	0.91	10.68	22.42	-22.46	5.22	8.58
<b>T. Rowe Price Retirement 2010</b>	<b>-0.76</b>	<b>4.99</b>	<b>11.93</b>	<b>12.44</b>	<b>0.54</b>	<b>12.70</b>	<b>27.95</b>	<b>-26.71</b>	<b>6.65</b>	<b>12.84</b>
DJ Target 2010	-0.72	4.20	3.00	6.40	4.49	9.71	14.11	-10.81	7.73	7.90
Avg Target Date 2000-2010	-1.19	4.10	8.30	9.61	0.91	10.68	22.42	-22.46	5.22	8.58
<b>T. Rowe Price Retirement 2015</b>	<b>-0.58</b>	<b>5.37</b>	<b>15.18</b>	<b>13.81</b>	<b>-0.32</b>	<b>13.79</b>	<b>31.35</b>	<b>-30.22</b>	<b>6.75</b>	<b>13.73</b>
DJ Target 2015	-0.97	4.48	5.49	7.65	3.42	10.94	17.32	-16.65	7.78	9.49
Avg Target Date 2011-2015	-1.33	4.48	9.65	10.65	-0.27	11.50	23.55	-27.76	5.84	11.13
<b>T. Rowe Price Retirement 2020</b>	<b>-0.31</b>	<b>5.63</b>	<b>18.05</b>	<b>15.01</b>	<b>-1.20</b>	<b>14.74</b>	<b>34.19</b>	<b>-33.48</b>	<b>6.73</b>	<b>14.66</b>
DJ Target 2020	-1.04	4.81	9.05	9.23	2.01	12.42	20.95	-22.31	8.11	11.85
Avg Target Date 2016-2020	-1.63	4.72	11.57	11.68	-0.22	12.27	24.25	-29.46	6.02	11.95
<b>T. Rowe Price Retirement 2025</b>	<b>-0.17</b>	<b>5.84</b>	<b>20.78</b>	<b>16.00</b>	<b>-2.06</b>	<b>15.37</b>	<b>36.29</b>	<b>-35.90</b>	<b>6.81</b>	<b>15.44</b>
DJ Target 2025	-1.11	5.14	12.84	10.94	0.49	14.12	25.36	-27.61	8.31	13.75
Avg Target Date 2021-2025	-1.62	5.07	15.30	13.03	-2.06	13.29	28.32	-34.15	6.52	14.16
<b>T. Rowe Price Retirement 2030</b>	<b>-0.02</b>	<b>6.05</b>	<b>23.09</b>	<b>16.82</b>	<b>-2.70</b>	<b>16.01</b>	<b>37.99</b>	<b>-37.79</b>	<b>6.83</b>	<b>16.14</b>
DJ Target 2030	-1.21	5.50	16.59	12.56	-1.20	15.67	29.50	-32.02	8.43	15.26
Avg Target Date 2026-2030	-1.87	5.04	16.65	13.59	-2.26	13.47	28.87	-36.04	6.50	13.60

## Target Date Funds

### Annual Net-of-Fee Total Returns

Fund/Benchmark	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
<b>T. Rowe Price Retirement 2035</b>	<b>0.13</b>	<b>6.07</b>	<b>24.86</b>	<b>17.35</b>	<b>-3.26</b>	<b>16.34</b>	<b>39.04</b>	<b>-38.88</b>	<b>6.81</b>	<b>16.18</b>
DJ Target 2035	-1.61	5.80	19.90	13.92	-2.62	16.89	32.71	-35.15	8.48	16.25
Avg Target Date 2031-2035	-1.79	5.24	20.00	14.64	-3.51	14.28	30.06	-37.04	7.02	14.55
<b>T. Rowe Price Retirement 2040</b>	<b>0.17</b>	<b>6.18</b>	<b>25.93</b>	<b>17.55</b>	<b>-3.49</b>	<b>16.51</b>	<b>39.07</b>	<b>-38.85</b>	<b>6.77</b>	<b>16.24</b>
DJ Target 2040	-1.94	6.03	22.38	14.88	-3.59	17.67	34.64	-36.80	8.48	16.64
Avg Target Date 2036-2040	-2.07	5.25	19.97	14.64	-3.49	14.37	30.90	-37.94	6.21	14.67
<b>T. Rowe Price Retirement 2045</b>	<b>0.17</b>	<b>6.14</b>	<b>25.93</b>	<b>17.62</b>	<b>-3.47</b>	<b>16.44</b>	<b>39.10</b>	<b>-38.83</b>	<b>6.84</b>	<b>16.15</b>
DJ Target 2045	-2.15	6.16	23.71	15.32	-3.99	17.95	35.09	-37.03	8.46	16.64
Avg Target Date 2041-2045	-1.89	5.35	22.00	15.31	-4.10	14.60	30.88	-38.11	6.89	15.95
<b>T. Rowe Price Retirement 2050</b>	<b>0.19</b>	<b>6.19</b>	<b>25.90</b>	<b>17.55</b>	<b>-3.36</b>	<b>16.41</b>	<b>38.92</b>	<b>-38.80</b>	<b>6.82</b>	-
DJ Target 2050	-2.23	6.19	23.89	15.35	-4.00	17.95	35.09	-37.03	8.46	16.64
Avg Target Date 2046-2050	-2.10	5.42	21.02	15.07	-3.82	14.53	32.02	-38.67	5.91	15.51
<b>T. Rowe Price Retirement 2055</b>	<b>0.18</b>	<b>6.18</b>	<b>25.86</b>	<b>17.60</b>	<b>-3.35</b>	<b>16.41</b>	<b>38.97</b>	<b>-38.89</b>	<b>6.82</b>	-
DJ Target 2055	-2.23	6.19	23.89	15.35	-4.00	17.95	35.09	-37.03	8.47	16.64
Avg Target Date 2051+	-1.75	5.49	23.14	15.52	-4.13	14.45	32.20	-38.86	5.94	15.51
<b>Vanguard Balanced Index I</b>	<b>0.52</b>	<b>10.00</b>	<b>18.11</b>	<b>11.51</b>	<b>4.31</b>	<b>13.34</b>	<b>20.18</b>	<b>-22.10</b>	<b>6.34</b>	<b>11.10</b>
Custom Vanguard Bal Index	0.76	10.06	18.25	11.71	4.66	13.45	20.34	-20.94	6.53	11.17
Avg Moderate Allocation	-1.96	6.21	16.48	11.72	-0.11	11.83	24.13	-28.00	5.99	11.29
Barclays US Agg Bond	0.55	5.97	-2.02	4.21	7.84	6.54	5.93	5.24	6.97	4.33
S&P 500	1.38	13.69	32.39	16.00	2.11	15.06	26.46	-37.00	5.49	15.79

## Large and Mid-Cap Stock Funds

### Annual Net-of-Fee Total Returns

Fund/Benchmark	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
<b>Vanguard Equity-Income Adm</b>	<b>0.86</b>	<b>11.38</b>	<b>30.19</b>	<b>13.58</b>	<b>10.69</b>	<b>14.99</b>	<b>17.26</b>	<b>-30.86</b>	<b>4.99</b>	<b>20.77</b>
Russell 1000 Value	-3.83	13.45	32.53	17.51	0.39	15.51	19.69	-36.85	-0.17	22.25
Avg Large Value	-4.05	10.21	31.21	14.57	-0.75	13.66	24.13	-37.09	1.42	18.15
<b>BlackRock Equity Idx - Collective F</b>	<b>1.45</b>	<b>13.70</b>	<b>32.41</b>	<b>16.00</b>	<b>2.20</b>	-	-	-	-	-
<b>JPMorgan US Equity R5</b>	<b>0.84</b>	<b>13.95</b>	<b>36.07</b>	<b>17.40</b>	<b>-1.48</b>	<b>14.42</b>	<b>33.29</b>	<b>-34.51</b>	<b>10.49</b>	<b>17.36</b>
S&P 500	1.38	13.69	32.39	16.00	2.11	15.06	26.46	-37.00	5.49	15.79
Avg Large Blend	-1.07	10.96	31.50	14.96	-1.27	14.01	28.17	-37.79	6.16	14.17
<b>Alger Capital Appreciation Z</b>	<b>6.56</b>	<b>13.50</b>	<b>35.31</b>	<b>18.27</b>	<b>-0.69</b>	<b>12.15</b>	<b>48.45</b>	<b>-44.85</b>	<b>31.01</b>	<b>17.89</b>
Russell 1000 Growth	5.67	13.05	33.48	15.26	2.64	16.71	37.21	-38.44	11.81	9.07
Avg Large Growth	3.60	10.00	33.92	15.34	-2.46	15.53	35.68	-40.67	13.35	7.05
<b>MFS Mid Cap Value R5</b>	<b>-2.14</b>	<b>10.29</b>	<b>36.63</b>	<b>18.52</b>	<b>-2.04</b>	<b>27.08</b>	<b>39.75</b>	<b>-41.90</b>	<b>1.67</b>	<b>10.85</b>
Russell Mid Cap Value	-4.78	14.75	33.46	18.51	-1.38	24.75	34.21	-38.44	-1.42	20.22
Avg Mid Value	-5.41	9.31	35.14	16.60	-3.96	21.92	35.41	-36.77	0.83	15.87
<b>Victory Munder Mid-Cap Core Growth A</b>	<b>-4.60</b>	<b>9.90</b>	<b>33.38</b>	<b>15.72</b>	<b>-1.04</b>	<b>25.18</b>	<b>32.45</b>	<b>-43.57</b>	<b>20.64</b>	<b>11.58</b>
Russell Mid Cap	-2.44	13.22	34.76	17.28	-1.55	25.48	40.48	-41.46	5.60	15.26
Avg Mid Growth	-0.95	7.00	34.93	14.07	-3.96	24.61	39.11	-43.77	15.09	9.00
Russell Mid Cap Growth	-0.20	11.90	35.74	15.81	-1.65	26.38	46.29	-44.32	11.43	10.66

## Small Cap and International Stock Funds

### Annual Net-of-Fee Total Returns

Fund/Benchmark	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
<b>Prudential QMA Small Cap Value Z</b>	<b>-7.04</b>	<b>5.89</b>	<b>35.87</b>	<b>14.14</b>	<b>-0.48</b>	<b>23.63</b>	<b>26.69</b>	<b>-27.45</b>	<b>0.52</b>	<b>17.72</b>
Russell 2000 Value	-7.47	4.22	34.52	18.05	-5.50	24.50	20.58	-28.92	-9.78	23.48
Avg Small Value	-6.71	3.34	36.22	16.00	-4.45	26.17	31.32	-32.24	-6.08	16.27
<b>Vanguard Small Cap Index Adm</b>	<b>-3.64</b>	<b>7.50</b>	<b>37.81</b>	<b>18.24</b>	<b>-2.69</b>	<b>27.89</b>	<b>36.33</b>	<b>-36.00</b>	<b>1.24</b>	<b>15.78</b>
Custom Vanguard SC Index	-3.68	7.54	37.77	18.20	-2.75	27.82	36.15	-36.20	1.20	15.77
Avg Small Blend	-5.35	3.79	37.39	15.46	-4.07	25.61	31.80	-36.56	-1.10	15.03
<b>Vanguard Small Cap Growth Index Inv</b>	<b>-2.64</b>	<b>3.88</b>	<b>37.98</b>	<b>17.52</b>	<b>-1.58</b>	<b>30.69</b>	<b>41.85</b>	<b>-40.00</b>	<b>9.63</b>	<b>11.95</b>
Custom Vanguard SC Growth Index	-2.60	3.98	37.87	17.24	-1.64	30.58	41.79	-40.17	9.62	11.93
Avg Small Growth	-2.40	2.44	40.91	13.15	-3.55	26.98	35.46	-41.55	7.59	10.81
<b>American Funds New Perspective A</b>	<b>5.34</b>	<b>3.23</b>	<b>26.77</b>	<b>20.77</b>	<b>-7.60</b>	<b>12.76</b>	<b>37.43</b>	<b>-37.83</b>	<b>16.04</b>	<b>19.87</b>
MSCI ACWI	-2.36	4.16	22.80	16.13	-7.35	12.67	34.63	-42.19	11.66	20.95
Avg World Stock	-1.72	2.79	25.19	15.84	-7.93	13.74	35.27	-41.91	11.28	19.72
<b>Oakmark International I</b>	<b>-3.83</b>	<b>-5.41</b>	<b>29.34</b>	<b>29.22</b>	<b>-14.07</b>	<b>16.22</b>	<b>56.30</b>	<b>-41.06</b>	<b>-0.51</b>	<b>30.60</b>
MSCI World Ex USA	-3.04	-4.32	21.02	16.41	-12.21	8.95	33.67	-43.56	12.44	25.71
<b>Vanguard Total Intl Stock Index Inv</b>	<b>-4.37</b>	<b>-4.24</b>	<b>15.04</b>	<b>18.14</b>	<b>-14.56</b>	<b>11.12</b>	<b>36.73</b>	<b>-44.10</b>	<b>15.52</b>	<b>26.64</b>
Custom Vanguard Intl Index	-4.29	-3.39	15.76	17.04	-14.31	10.70	40.44	-45.52	15.85	27.25
Avg Foreign Large Blend	-1.57	-4.98	19.44	18.29	-13.97	10.24	31.24	-43.99	12.71	24.77
<b>Oppenheimer Developing Markets Y</b>	<b>-13.84</b>	<b>-4.55</b>	<b>8.68</b>	<b>21.29</b>	<b>-17.85</b>	<b>27.39</b>	<b>82.10</b>	<b>-47.84</b>	<b>34.30</b>	<b>25.70</b>
MSCI EM	-14.92	-2.19	-2.60	18.22	-18.42	18.88	78.51	-53.33	39.42	32.14
Avg Diversified Emerging Mkts	-13.77	-3.01	-0.14	18.15	-19.86	19.26	73.81	-54.44	36.68	32.06

## Peer Group Rankings

As of December 31, 2015

(yellow indicates fund performed above median in peer group)  
(1=Best Ranking / 100 = Worst Ranking)

Fund Name	Morningstar Category	3 Mo	YTD	1 Yr	3 Yr	5 Yr	10 Yr
Prudential Total Return Bond Q	Intermediate-Term Bond	86	53	53	13	4	3
Neuberger Berman High Income Bond Instl	High Yield Bond	46	66	66	54	50	8
T. Rowe Price Retirement Balanced	Conservative Allocation	23	28	28	39	42	25
T. Rowe Price Retirement 2005	Target Date 2000-2010	38	21	21	42	35	3
T. Rowe Price Retirement 2010	Target Date 2000-2010	15	23	23	19	19	1
T. Rowe Price Retirement 2015	Target Date 2011-2015	2	15	15	5	9	1
T. Rowe Price Retirement 2020	Target Date 2016-2020	1	12	12	4	4	1
T. Rowe Price Retirement 2025	Target Date 2021-2025	1	7	7	6	6	1
T. Rowe Price Retirement 2030	Target Date 2026-2030	8	7	7	5	4	1
T. Rowe Price Retirement 2035	Target Date 2031-2035	7	5	5	5	6	1
T. Rowe Price Retirement 2040	Target Date 2036-2040	5	4	4	4	4	1
T. Rowe Price Retirement 2045	Target Date 2041-2045	5	5	5	6	6	1
T. Rowe Price Retirement 2050	Target Date 2046-2050	7	5	5	4	5	
T. Rowe Price Retirement 2055	Target Date 2051+	9	5	5	5	12	
Vanguard Balanced Index I	Moderate Allocation	26	12	12	16	8	11

## Peer Group Rankings

As of December 31, 2015

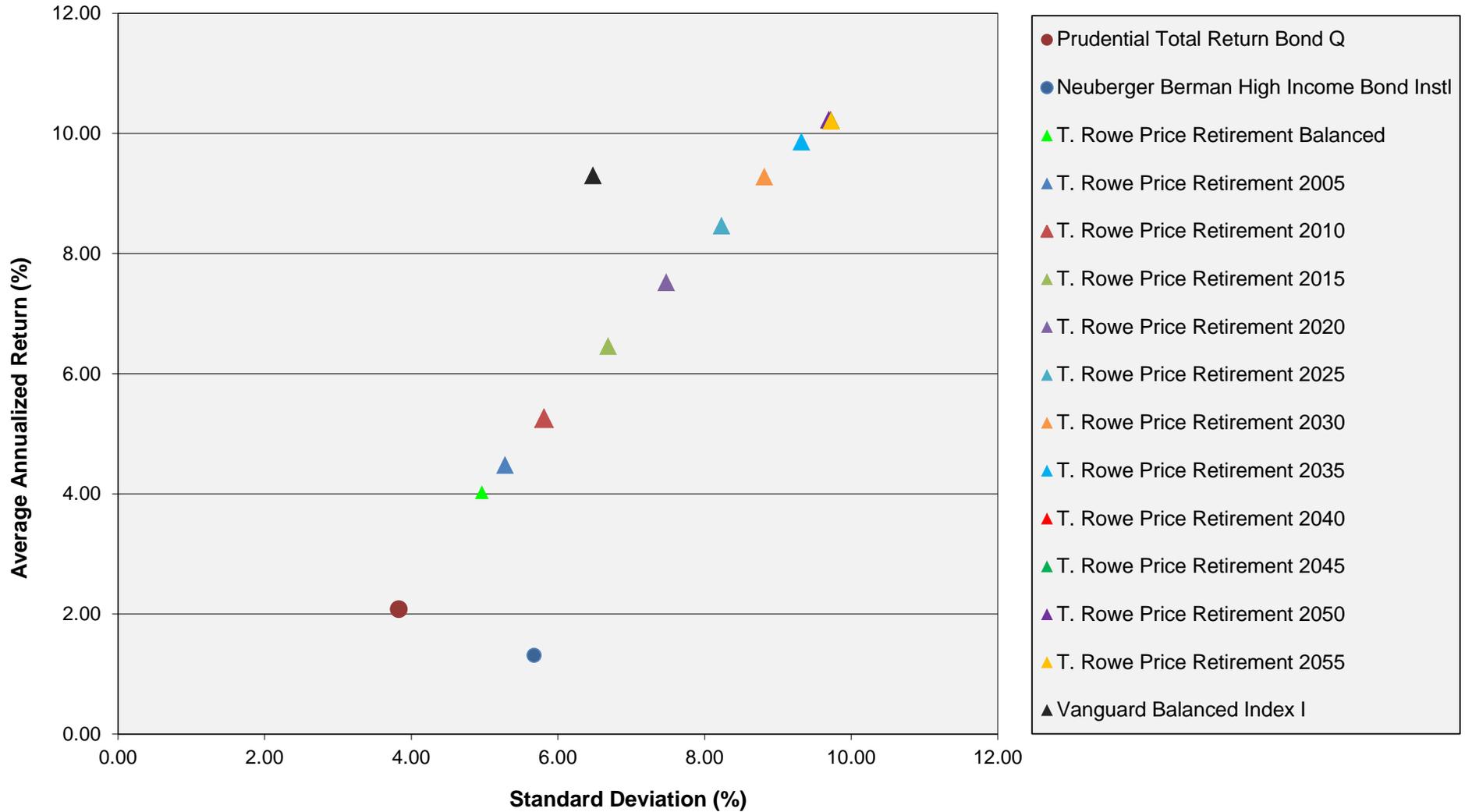
(yellow indicates fund performed above median in peer group)

(1=Best Ranking / 100 = Worst Ranking)

Fund Name	Morningstar Category	3 Mo	YTD	1 Yr	3 Yr	5 Yr	10 Yr
Vanguard Equity-Income Adm	Large Value	7	6	6	17	4	3
JPMorgan US Equity R5	Large Blend	12	30	30	7	12	3
Alger Capital Appreciation Z	Large Growth	21	26	26	14	13	2
MFS Mid Cap Value R5	Mid-Cap Value	48	20	20	15	11	34
Victory Munder Mid-Cap Core Growth A	Mid-Cap Growth	84	81	81	62	45	48
Prudential QMA Small Cap Value Z	Small Value	16	62	62	51	33	15
Vanguard Small Cap Index Adm	Small Blend	47	34	34	25	19	11
Vanguard Small Cap Growth Index Inv	Small Growth	37	53	53	61	38	20
American Funds New Perspective A	World Stock	9	7	7	12	12	4
Oakmark International I	Foreign Large Blend	15	77	77	17	6	3
Vanguard Total Intl Stock Index Inv	Foreign Large Blend	80	80	80	83	83	45
Oppenheimer Developing Markets Y	Diversified Emerging Mkts	7	47	47	28	17	3

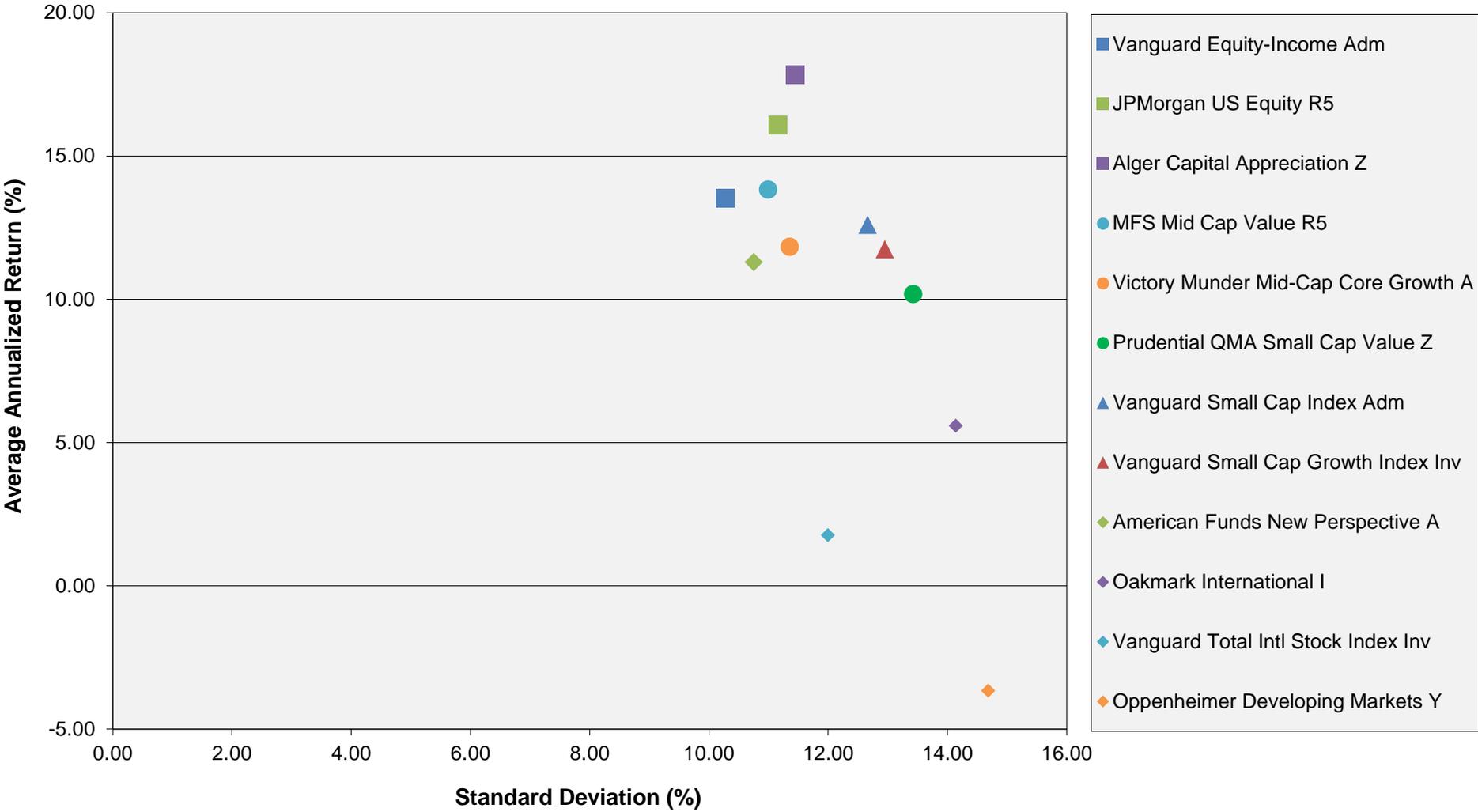
# Three Year Risk/Return Profile Bond and Target Date/Balanced Funds

As of December 31, 2015



# Three Year Risk/Return Profile Equity Funds

As of December 31, 2015



## Stable Value Performance as of December 31, 2015

	Quarter	YTD	1 Year	Annualized			Management Fees	Wrap Fees	Other Fees
				3 Years	5 years	10 years			
<b>Montana Stable Value (market, gross)</b>	<b>-0.52</b>	<b>1.07</b>	<b>1.07</b>	<b>0.59</b>	<b>2.42</b>	<b>4.32</b>	<b>0.20</b>	<b>0.20</b>	<b>0.02</b>
Barclays US Govt/Credit Interm +0.35%	-0.60	1.42	1.42	1.45	2.93	4.39	-	-	-

## Stable Value Portfolio Characteristics as of December 31, 2015

	Yield-to Maturity (%)	Effective Duration (years)	Effective Maturity (years)	Average Credit Quality	Credit Quality Distribution (%)				
					Investment Grade				High Yield Below BBB
					AAA	AA	A	BBB	
<b>Montana Stable Value</b>	<b>2.18</b>	<b>3.70</b>	<b>4.13</b>	<b>AA</b>	<b>60</b>	<b>4</b>	<b>18</b>	<b>18</b>	<b>0</b>
Barclays US Govt/Credit Interm	-	3.97	4.31	AA	65	6	13	16	-

## Market to Book Value Ratio

End of Month	Mar-14	Jun-14	Sep-14	Dec-14	Mar-15	Jun-15	Sep-15	Dec-15
<b>Market-to-Book Value Ratio (%)</b>	<b>103.3</b>	<b>104.1</b>	<b>103.0</b>	<b>103.2</b>	<b>104.2</b>	<b>102.9</b>	<b>103.0</b>	<b>101.7</b>

## Fixed Income Portfolio Characteristics

As of December 31, 2015

	Average Maturity (years)	Average Duration (years)	Average Credit Quality	Total Number of Holdings
<b>Prudential Total Return Bond Q</b>	<b>7.6</b>	<b>6.3</b>	<b>BBB</b>	<b>2,039</b>
BarCap Aggregate	7.9	5.7	AA	9,681
Avg Intermediate Term Bond	7.1	5.0	BBB	756
<b>Neuberger Berman High Income Bond Instl</b>	<b>6.3</b>	<b>4.0</b>	<b>B</b>	<b>406</b>
Avg High Yield Bond	5.8	3.9	B	585

	Investment Grade				High Yield Bonds			Other
	AAA	AA	A	BBB	BB	B	Below B	NR/NA
<b>Prudential Total Return Bond Q</b>	<b>28</b>	<b>9</b>	<b>22</b>	<b>19</b>	<b>12</b>	<b>4</b>	<b>0</b>	<b>5</b>
BarCap Aggregate	72	4	11	13	0	0	0	0
Avg Intermediate Term Bond	46	9	19	19	4	1	1	2
<b>Neuberger Berman High Income Bond Instl</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>7</b>	<b>48</b>	<b>29</b>	<b>11</b>	<b>0</b>
Avg High Yield Bond	3	0	1	4	35	40	14	3

# Equity Portfolio Style Characteristics

As of December 31, 2015

Vanguard Equity-Income Adm

45	37	7
6	3	0
2	1	0

JPMorgan US Equity R5

23	28	37
3	5	4
0	0	0

Alger Capital Appreciation Z

4	24	58
2	3	8
1	0	1

MFS Mid Cap Value R5

7	3	6
29	25	15
9	5	2

Victory Munder Mid-Cap Core Growth A

2	0	24
10	19	35
3	5	1

Prudential QMA Small Cap Value Z

0	0	0
6	2	0
57	32	3

Vanguard Small Cap Index Adm

0	1	0
10	12	18
19	21	19

Vanguard Small Cap Growth Index Inv

0	1	0
3	10	31
4	17	34

American Funds New Perspective A

14	25	54
1	2	4
0	0	0

Oakmark International I

49	23	18
7	3	0
0	0	0

Vanguard Total Intl Stock Index Inv

29	27	23
6	5	5
2	1	1

Oppenheimer Developing Markets Y

12	36	45
3	2	2
0	0	0

## Style Legend

Large Value	Large Core	Large Growth	> 50%	54
Mid Value	Mid Core	Mid Growth	> 25%	27
Small Value	Small Core	Small Growth	> 10%	19

## Equity Portfolio Characteristics

As of December 31, 2015

Fund Name	Geo Avg Market Cap \$MM	P/E Ratio	P/B Ratio	Total Number of Holdings	% Assets in Top 10 Holdings	Turnover Ratio	% Non- US Equity	% Emerging Mkts Equity
<b>Vanguard Equity-Income Adm</b>	<b>\$74,020</b>	<b>16.7</b>	<b>2.3</b>	<b>185</b>	<b>29</b>	<b>32</b>	<b>8</b>	<b>0</b>
Russell 1000 Value	\$51,355	16.8	1.7	691	24			
Avg Large Value	\$79,830	17.5	2.0	-	33	54	6	0
<b>JPMorgan US Equity R5</b>	<b>\$62,479</b>	<b>18.7</b>	<b>2.6</b>	<b>193</b>	<b>23</b>	<b>79</b>	<b>5</b>	<b>2</b>
S&P 500	\$73,741	19.0	2.7	504	18			
Avg Large Blend	\$97,957	18.7	2.6	-	47	63	4	0
<b>Alger Capital Appreciation Z</b>	<b>\$60,130</b>	<b>21.0</b>	<b>3.7</b>	<b>127</b>	<b>33</b>	<b>148</b>	<b>5</b>	<b>2</b>
Russell 1000 Growth	\$59,522	21.7	5.4	644	24			
Avg Large Growth	\$80,465	24.1	4.5	-	44	67	7	2
<b>MFS Mid Cap Value R5</b>	<b>\$8,202</b>	<b>19.2</b>	<b>1.9</b>	<b>163</b>	<b>11</b>	<b>36</b>	<b>4</b>	<b>0</b>
Russell Mid Cap Value	\$9,156	17.9	1.6	559	7			
Avg Mid Value	\$9,206	16.2	1.7	-	17	59	5	0
<b>Victory Munder Mid-Cap Core Growth A</b>	<b>\$9,138</b>	<b>19.2</b>	<b>2.7</b>	<b>85</b>	<b>18</b>	<b>27</b>	<b>3</b>	<b>2</b>
Russell Mid Cap	\$10,138	19.8	2.4	831	4			
Avg Mid Blend	\$7,077	18.8	2.2	-	15	72	2	0
Russell Mid Cap Growth	\$11,219	22.0	4.8	505	9		1	0

## Equity Portfolio Characteristics

As of December 31, 2015

Fund Name	Geo Avg Market Cap \$MM	P/E Ratio	P/B Ratio	Total Number of Holdings	% Assets in Top 10 Holdings	Turnover Ratio	% Non- US Equity	% Emerging Mkts Equity
<b>Prudential QMA Small Cap Value Z</b>	<b>\$1,389</b>	<b>13.5</b>	<b>1.4</b>	<b>334</b>	<b>11</b>	<b>111</b>	<b>0</b>	<b>0</b>
Russell 2000 Value	\$1,310	16.0	1.3	1,351	5			
Avg Small Value	\$2,604	18.1	1.6	-	19	70	2	0
<b>Vanguard Small Cap Index Adm</b>	<b>\$2,970</b>	<b>19.6</b>	<b>2.2</b>	<b>1,521</b>	<b>3</b>	<b>10</b>	<b>1</b>	<b>0</b>
CRSP US Small Cap	\$2,820	18.8	2.0	1,489	3			
Avg Small Blend	\$2,607	19.5	2.0	-	20	69	2	0
<b>Vanguard Small Cap Growth Index Inv</b>	<b>\$3,053</b>	<b>26.1</b>	<b>3.1</b>	<b>769</b>	<b>5</b>	<b>26</b>	<b>1</b>	<b>0</b>
CRSP US Small Cap Growth	\$2,934	25.3	3.0	721	5			
Avg Small Growth	\$2,857	26.3	3.9	-	23	76	2	1
<b>American Funds New Perspective A</b>	<b>\$51,001</b>	<b>20.2</b>	<b>3.0</b>	<b>311</b>	<b>22</b>	<b>27</b>	<b>48</b>	<b>4</b>
MSCI ACWI	\$43,856	16.6	2.0	2,491	9			
Avg World Stock	\$41,512	18.8	2.1	-	21	57	47	5
<b>Oakmark International I</b>	<b>\$29,480</b>	<b>13.6</b>	<b>1.4</b>	<b>73</b>	<b>37</b>	<b>48</b>	<b>91</b>	<b>4</b>
MSCI World Ex USA	\$31,079	15.2	1.6	1,020	11			
<b>Vanguard Total Intl Stock Index Inv</b>	<b>\$19,066</b>	<b>14.8</b>	<b>1.6</b>	<b>5,947</b>	<b>7</b>	<b>3</b>	<b>99</b>	<b>14</b>
FTSE Global All Cap ex US	\$18,772	14.2	1.5	5,742	8			
Avg Foreign Large Blend	\$34,486	16.0	1.7	-	14	70	90	6
<b>Oppenheimer Developing Markets Y</b>	<b>\$19,984</b>	<b>19.7</b>	<b>2.7</b>	<b>103</b>	<b>31</b>	<b>36</b>	<b>93</b>	<b>80</b>
MSCI EM	\$18,940	12.0	1.4	838	20			
Avg Diversified Emerging Mkts	\$17,594	12.5	1.7	-	16	73	90	70

# Equity Portfolio Sector Allocations

As of December 31, 2015

(yellow shading indicates largest sector allocation)

	Energy	Materials	Industrials	Consumer Discretionary	Consumer Staples	Healthcare	Financials	Information Technology	Telecom Services	Utilities
<b>Vanguard Equity-Income Adm</b>	10.5	2.6	12.4	6.1	11.7	12.3	17.0	14.2	4.3	8.8
Russell 1000 Value	12.3	2.6	10.4	5.2	7.0	11.9	30.4	11.5	2.5	6.2
Avg Large Value	10.2	3.6	11.0	9.1	11.7	12.0	22.7	11.5	3.6	4.8
<b>JPMorgan US Equity R5</b>	6.8	2.4	9.8	15.8	6.0	15.3	17.9	23.0	0.7	2.2
S&P 500	6.5	2.8	10.0	12.9	10.1	15.2	16.5	20.7	2.4	3.0
Avg Large Blend	6.5	2.9	11.6	13.6	14.9	10.0	15.0	21.2	1.8	2.5
<b>Alger Capital Appreciation Z</b>	1.6	1.2	7.3	22.3	6.4	22.2	4.6	33.0	1.1	0.3
Russell 1000 Growth	0.5	3.4	10.8	21.2	11.3	17.1	5.5	28.0	2.1	0.0
Avg Large Growth	2.3	2.4	9.0	19.9	6.9	19.7	7.8	31.1	0.6	0.3
<b>MFS Mid Cap Value R5</b>	8.7	6.2	12.9	12.1	6.8	10.6	26.0	9.4	0.5	6.8
Russell Mid Cap Value	8.1	5.6	9.7	8.2	4.1	6.2	34.8	9.8	1.6	12.0
Avg Mid Value	7.8	7.0	13.9	14.0	4.7	7.3	26.5	11.8	0.7	6.4
<b>Victory Munder Mid-Cap Core Growth A</b>	4.1	5.1	13.6	18.9	6.8	10.9	19.5	16.4	2.0	2.8
Russell Mid Cap	4.4	5.2	12.7	16.3	6.3	9.9	23.4	14.8	1.0	6.0
Avg Mid Blend	4.7	6.5	13.5	15.9	3.8	10.4	22.7	17.9	0.8	3.7
Russell Mid Cap Growth	0.7	4.9	15.7	24.2	8.4	13.6	12.1	19.9	0.4	0.1

## Equity Portfolio Sector Allocations

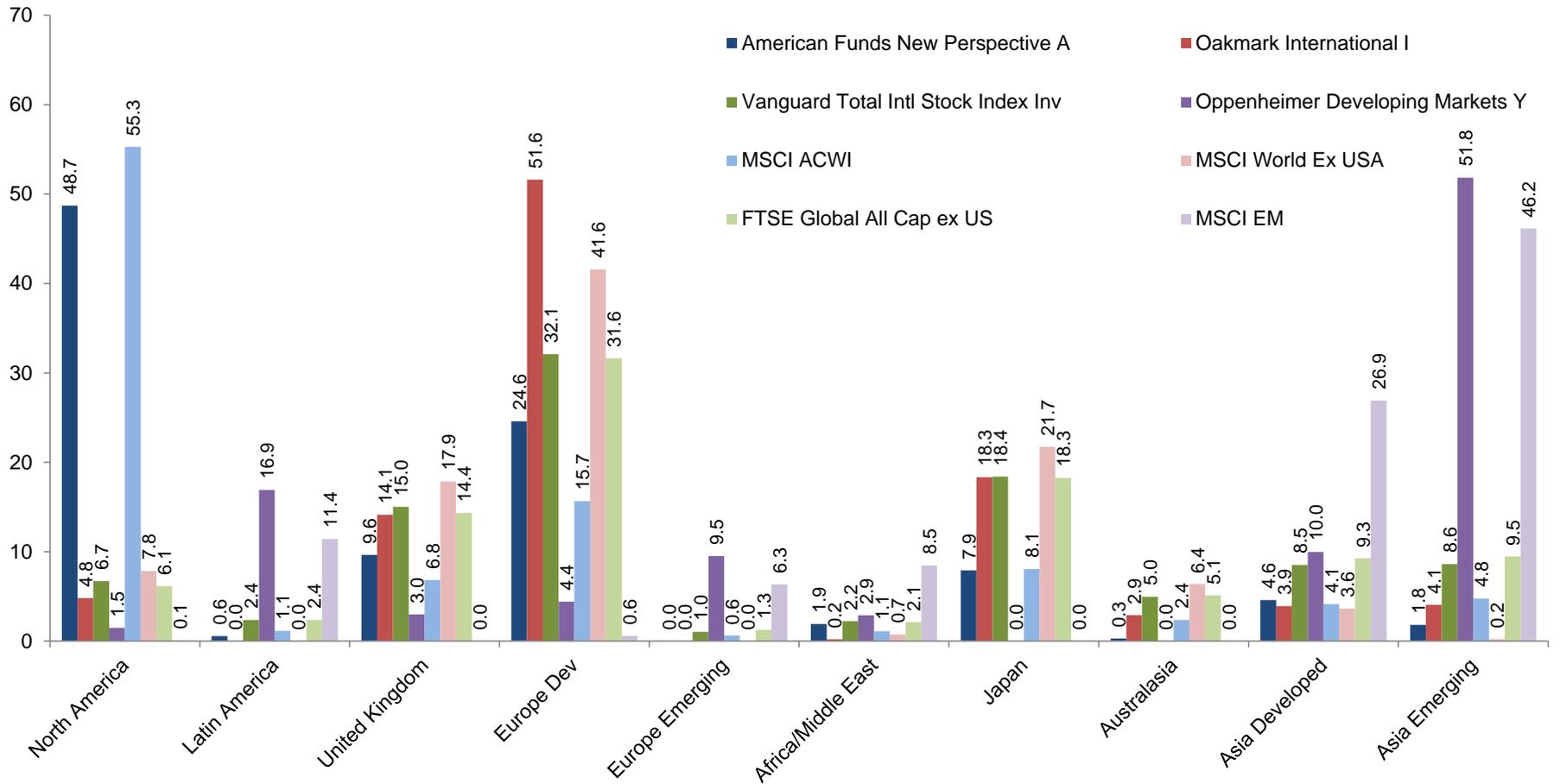
As of December 31, 2015

(yellow shading indicates largest sector allocation)

	Energy	Materials	Industrials	Consumer Discretionary	Consumer Staples	Healthcare	Financials	Information Technology	Telecom Services	Utilities
<b>Prudential QMA Small Cap Value Z</b>	5.1	5.8	14.5	10.8	3.4	1.3	46.0	9.8	0.7	2.7
Russell 2000 Value	4.3	3.1	11.6	10.1	3.3	4.6	43.8	10.8	0.9	7.4
Avg Small Value	4.3	5.9	19.1	11.3	3.2	6.0	32.3	13.2	0.4	4.3
<b>Vanguard Small Cap Index Adm</b>	3.4	4.8	14.6	13.9	3.3	11.9	25.9	17.6	0.4	4.2
CRSP US Small Cap	3.2	4.6	14.2	14.0	3.5	12.6	25.8	17.1	0.4	4.6
Avg Small Blend	3.0	5.0	16.4	17.5	3.2	11.3	24.5	15.3	0.6	3.2
<b>Vanguard Small Cap Growth Index Inv</b>	3.0	2.6	13.4	15.9	3.0	17.3	20.8	23.0	0.2	0.9
CRSP US Small Cap Growth	2.5	2.1	12.2	16.2	3.1	18.8	20.3	23.6	0.3	1.0
Avg Small Growth	2.0	3.2	14.2	17.6	2.5	22.8	14.2	22.3	0.5	0.7
<b>American Funds New Perspective A</b>	2.9	2.1	11.6	20.6	13.3	17.8	12.3	17.4	1.4	0.5
MSCI ACWI	6.2	4.5	10.3	13.0	10.2	12.5	21.4	15.1	3.7	3.2
Avg World Stock	5.9	3.1	11.0	13.6	9.8	13.1	19.5	16.5	3.1	4.4
<b>Oakmark International I</b>	0.0	6.2	17.9	30.1	6.9	0.9	29.4	8.7	0.0	0.0
MSCI World Ex USA	5.7	6.5	12.3	12.8	11.4	11.3	26.6	5.2	4.7	3.6
<b>Vanguard Total Intl Stock Index Inv</b>	5.9	7.2	12.8	13.0	10.4	9.3	25.2	8.1	4.7	3.4
FTSE Global All Cap ex US	5.7	7.0	12.8	12.8	10.2	9.4	26.3	8.0	4.5	3.4
Avg Foreign Large Blend	4.8	6.8	12.6	13.8	11.6	11.3	23.3	8.0	4.8	3.0
<b>Oppenheimer Developing Markets Y</b>	3.1	2.6	5.9	23.7	12.0	5.9	25.9	19.9	0.9	0.0
MSCI EM	6.9	5.8	6.8	10.3	8.0	2.9	27.1	22.6	6.6	3.1
Avg Diversified Emerging Mkts	5.9	5.3	6.0	11.2	12.1	4.0	27.0	19.4	6.0	3.0

# International Fund Regional Allocations

As of December 31, 2015



## International Fund Country Allocations

As of December 31, 2015

	Argentina	Australia	Austria	Belgium	Brazil	Canada	Chile	China	Czech Republic	Denmark	Finland	France	Germany	Greece	Hong Kong	Hungary	India	Indonesia	Ireland	Israel	Italy	Japan	Malaysia	Mexico	Netherlands
<b>American Funds New Perspective A</b>		0.3		0.2	0.3	1.3		0.9		6.5	0.9	4.5	1.9		2.1		0.9		0.6			7.9		0.3	3.0
MSCI ACWI		2.3		0.5	0.5	2.7	0.1	3.0		0.7	0.3	3.3	3.1		1.0		0.8	0.2		0.3	0.8	8.1	0.3	0.4	1.0
<b>Oakmark International I</b>		2.9						4.1				14.7	12.4							0.2	5.5	18.3			3.0
MSCI World Ex USA		6.2	0.2	1.3		7.4		0.2		1.8	0.8	9.0	8.5		2.4				0.2	0.7	2.1	21.7			2.8

	New Zealand	Norway	Pakistan	Philippines	Poland	Portugal	Russia	Singapore	Slovakia	South Africa	South Korea	Spain	Sweden	Switzerland	Taiwan	Thailand	Turkey	United Kingdom	United States	Non-US	Venezuela	Vietnam	Lithuania	Latvia	Estonia
<b>American Funds New Perspective A</b>		0.2						0.2		1.9	0.7	0.9	0.6	5.2	1.6			9.6	47.4	52.6					
MSCI ACWI		0.2		0.1	0.1		0.3	0.5		0.6	1.5	1.1	1.0	3.4	1.2	0.2	0.1	6.8	52.5	47.5					
<b>Oakmark International I</b>											3.9		4.0	12.1				14.1	4.8	95.2					
MSCI World Ex USA	0.1	0.5				0.1		1.2				2.9	2.7	8.7				17.9	0.4	99.6					

## International Fund Country Allocations

As of December 31, 2015

	Argentina	Australia	Austria	Belgium	Brazil	Canada	Chile	China	Czech Republic	Denmark	Finland	France	Germany	Greece	Hong Kong	Hungary	India	Indonesia	Ireland	Israel	Italy	Japan	Malaysia	Mexico	Netherlands
Vanguard Total Intl Stock Index Inv		4.8	0.2	1.1	1.1	6.3	0.2	4.2		1.3	0.8	6.6	6.5		1.2		2.3	0.4	0.2	0.5	1.9	18.4	0.7	0.9	1.9
FTSE Global All Cap ex US		4.9	0.2	1.1	1.1	5.8	0.2	5.0		1.4	0.8	6.4	6.3		2.1		2.3	0.5	0.2	0.6	1.9	18.3	0.8	0.9	1.8
Oppenheimer Developing Markets Y					7.9			28.3				2.4			4.8		16.0	1.9			1.5		1.7	7.1	
MSCI EM					5.3		1.2	28.7	0.2					0.5		0.3	8.5	2.5					3.2	4.3	

	New Zealand	Norway	Pakistan	Philippines	Poland	Portugal	Russia	Singapore	Slovakia	South Africa	South Korea	Spain	Sweden	Switzerland	Taiwan	Thailand	Turkey	United Kingdom	United States	Non-US	Venezuela	Vietnam	Lithuania	Latvia	Estonia
Vanguard Total Intl Stock Index Inv	0.2	0.5		0.3	0.2	0.1	0.5	1.0		1.5	3.3	2.3	2.3	6.3	2.9	0.5	0.2	15.0	0.4	99.6					
FTSE Global All Cap ex US	0.2	0.5		0.3	0.3	0.1	0.7	1.0		1.3	3.2	2.2	2.2	6.3	2.8	0.5	0.3	14.4	0.3	99.7					
Oppenheimer Developing Markets Y				3.0			8.0	1.7			1.3			0.5	2.3	1.0	1.5	3.0	1.5	98.5					
MSCI EM				1.4	1.3		3.3			6.4	15.1				11.8	2.0	1.3		0.1	99.9					

## General Fund Information

As of December 31, 2015

Fund Name	Manager	Average Tenure (years)	Longest Tenure (years)	Total Assets (\$MM)	Morningstar Rating Overall	Morningstar Analyst Rating	Expense Ratio
Prudential Total Return Bond Q	Robert Tipp (4)*	6	13	\$18,573	★★★★★		0.46
Neuberger Berman High Income Bond Instl	Thomas P. O'Reilly (4)*	4	10	\$3,178	★★★	Silver	0.69
T. Rowe Price Retirement Balanced	Jerome A. Clark (2)*	7	13	\$3,148	★★★		0.56
T. Rowe Price Retirement 2005	Jerome A. Clark (2)*	6	12	\$1,678	★★★★	Gold	0.58
T. Rowe Price Retirement 2010	Jerome A. Clark (2)*	7	13	\$5,849	★★★★	Gold	0.58
T. Rowe Price Retirement 2015	Jerome A. Clark (2)*	6	12	\$9,460	★★★★	Gold	0.62
T. Rowe Price Retirement 2020	Jerome A. Clark (2)*	7	13	\$24,023	★★★★★	Gold	0.66
T. Rowe Price Retirement 2025	Jerome A. Clark (2)*	6	12	\$17,318	★★★★★	Gold	0.69
T. Rowe Price Retirement 2030	Jerome A. Clark (2)*	7	13	\$23,116	★★★★★	Gold	0.72
T. Rowe Price Retirement 2035	Jerome A. Clark (2)*	6	12	\$12,556	★★★★★	Gold	0.74
T. Rowe Price Retirement 2040	Jerome A. Clark (2)*	7	13	\$15,842	★★★★★	Gold	0.75
T. Rowe Price Retirement 2045	Jerome A. Clark (2)*	6	11	\$7,274	★★★★★	Gold	0.75
T. Rowe Price Retirement 2050	Jerome A. Clark (2)*	5	9	\$5,569	★★★★★	Gold	0.75
T. Rowe Price Retirement 2055	Jerome A. Clark (2)*	5	9	\$1,867	★★★★	Gold	0.75
Vanguard Balanced Index I	Joshua C. Barrickman (3)*	2	3	\$27,284	★★★★★	Gold	0.08

\* Longest tenured manager listed with total number of fund managers listed in parentheses

## General Fund Information

As of December 31, 2015

Fund Name	Manager	Average Tenure (years)	Longest Tenure (years)	Total Assets (\$MM)	Morningstar Rating Overall	Morningstar Analyst Rating	Expense Ratio
Vanguard Equity-Income Adm	James P. Stetler (4)*	7	12	\$17,757	★★★★★	Silver	0.20
JPMorgan US Equity R5	Susan Bao (4)*	8	15	\$13,448	★★★★	Silver	0.56
Alger Capital Appreciation Z	Patrick Kelly (2)*	6	11	\$2,344	★★★★		0.93
MFS Mid Cap Value R5	Brooks A. Taylor (2)*	7	7	\$4,011	★★★★		0.84
Victory Munder Mid-Cap Core Growth A	Tony Y. Dong (6)*	7	15	\$5,697	★★★	Neutral	1.32
Prudential QMA Small Cap Value Z	Deborah D. Woods (4)*	1	1	\$1,412	★★★★		0.71
Vanguard Small Cap Index Adm	Michael H. Buek	24	24	\$56,045	★★★★	Gold	0.09
Vanguard Small Cap Growth Index Inv	Gerard C. O'Reilly	11	11	\$15,643	★★★★	Silver	0.23
American Funds New Perspective A	Robert W. Lovelace (7)*	10	15	\$51,773	★★★★	Gold	0.75
Oakmark International I	David G. Herro (2)*	15	23	\$26,303	★★★★★	Gold	0.95
Vanguard Total Intl Stock Index Inv	Michael Perre	7	7	\$187,007	★★★	Gold	0.22
Oppenheimer Developing Markets Y	Justin M. Leverenz (2)*	5	9	\$30,426	★★★★★	Silver	1.05

\* Longest tenured manager listed with total number of fund managers listed in parentheses

## Glossary of Investment Terms

**Alpha** is a measure of the difference between a portfolio's actual returns and its expected performance, given its level of risk as measured by beta. A positive Alpha figure indicates the portfolio has performed better than its beta would predict. In contrast, a negative Alpha indicates the portfolio has underperformed, given the expectations established by beta.

**Average Credit Quality** gives a snapshot of the portfolio's overall credit quality. It is an average of each bond's credit rating, adjusted for its relative weighting in the portfolio. For corporate bond and municipal bond funds, Morningstar also shows the percentage of fixed-income securities that fall within each credit-quality rating, as assigned by Standard & Poor's or Moody's. Because it's rare to find individual bonds in a portfolio with a rating below B, the average credit quality of bond funds in Morningstar's database ranges from AAA (highest) to B (lowest). AAA bonds carry the highest credit rating, while bonds issued by speculative companies usually carry the lowest credit ratings. For taxable bonds, anything at or below BB is considered a high-yield or junk bond. For the purpose of Morningstar's calculations, U.S. government bonds are considered AAA and other nonrated bonds generally are considered B.

**Average Duration** is a measure of a fund's interest-rate sensitivity. The longer a fund's duration, the more sensitive the fund is to shifts in interest rates. Duration is determined by a formula that includes coupon rates and bond maturities. Small coupons tend to increase duration, while shorter maturities and higher coupons shorten duration.

**Average Maturity** is a weighted average of all the maturities of the bonds in a portfolio, computed by weighting each bond's effective maturity by the market value of the security. Average effective maturity takes into consideration all mortgage prepayments, puts, and adjustable coupons. Longer-maturity funds are generally considered more interest-rate sensitive than their shorter counterparts.

**Batting Average** is a measure of a manager's ability to consistently beat the market. It is calculated by dividing the number of months in which the manager beat or matched an index by the total number of months in the period. For example, a manager who meets or outperforms the market every month in a given period would have a batting average of 100. A manager who beats the market half of the time would have a batting average of 50.

**Beta** is a measure of systematic risk with respect to a benchmark. Systematic risk is the tendency of the value of the fund and the value of benchmark to move together. Beta measures the sensitivity of the fund's excess return (total return minus the risk-free return) with respect to the benchmark's excess return that results from their systematic co-movement. It is the ratio of what the excess return of the fund would be to the excess return of the benchmark if there were no fund-specific sources of return. If beta is greater than one, movements in value of the fund that are associated with movements in the value of the benchmark tend to be amplified. If beta is one, they tend to be the same, and if beta is less than one, they tend to be dampened. If such movements tend to be in opposite directions, beta is negative. Beta is measured as the slope of the regression of the excess return on the fund as the dependent variable and the excess return on the benchmark as the independent variable. The beta of the market is 1.00 by definition. Morningstar calculates beta by comparing a portfolio's excess return over T-bills to the benchmark's excess return over T-bills, so a beta of 1.10 shows that the portfolio has performed 10% better than its benchmark in up markets and 10% worse in down markets, assuming all other factors remain constant.

**Downside Capture Ratio** measures a manager's performance in down markets relative to the market (benchmark) itself. For example, if the ratio is 90%, the manager has captured 90% of the down-market and outperformed the market on the downside.

**Geometric Average Market Cap** provides a measure of the size of the companies in which the fund invests. It is the weighted mean of the market capitalizations of the stocks in the fund's portfolio and is calculated by raising the market capitalization of each stock to a power equal to that stock's stake in the portfolio. The resulting numbers are multiplied together to produce the geometric mean of the market caps of the stocks in the portfolio, which is reported as average market capitalization.

**Information Ratio** is a risk-adjusted performance measure. The information ratio is a special version of the Sharpe Ratio in that the benchmark is typically the fund's performance benchmark instead of the risk free rate. A higher information ratio indicates higher active returns per unit of active risk while a lower information ratio may indicate low levels of active returns, high levels of active risk or both.

**P/B Ratio** is the weighted average of the price/book ratios of all the stocks in a portfolio. The P/B ratio of a company is calculated by dividing the market price of its stock by the company's per-share book value. Stocks with negative book values are excluded from this calculation. In theory, a high P/B ratio indicates that the price of the stock exceeds the actual worth of the company's assets, while a low P/B ratio indicates that the stock is a bargain. In practice, book value is an accounting number and for a variety of reasons may not reflect the actual value assigned to a company or security by market participants.

**P/E Ratio** is the weighted average of the price/earnings ratios of all the stocks in a portfolio. A fund's price/earnings ratio can act as a gauge of the fund's investment strategy in the current market climate, and whether it has a value or growth orientation. Companies in those industries enjoying a surge of popularity tend to have high P/E ratios, reflecting a growth orientation. More staid industries tend to have low P/E ratios, reflecting a value orientation. Morningstar generates this figure in-house on a monthly basis, based on the most-recent portfolio holdings submitted by the fund and stock statistics gleaned from our internal U.S. equities databases. Negative P/Es are not used, and any P/E greater than 60 is capped at 60 in the calculation of the average.

**Peer Group Ranking** is the fund's total-return percentile rank relative to all funds that have the same Morningstar Category. Morningstar categorizes funds based on their portfolio holdings (portfolio statistics and compositions over the past 3 years). The highest (or most favorable) percentile rank is 1 and the lowest (or least favorable) percentile rank is 100. The top-performing fund in a category will always receive a rank of 1.

**Sharpe Ratio** is a risk-adjusted measure developed by Nobel Laureate William Sharpe. It is calculated by using standard deviation and excess return to determine reward per unit of risk. The higher the Sharpe Ratio, the better the fund's historical risk-adjusted performance. The Sharpe ratio is calculated for the past 60-month period by dividing a fund's annualized excess returns by the standard deviation of a fund's annualized excess returns. Since this ratio uses standard deviation as its risk measure, it is most appropriately applied when analyzing a fund that is an investor's sole holding. The Sharpe Ratio can be used to compare two funds directly on how much risk a fund had to bear to earn excess return over the risk-free rate.

**Standard Deviation** is a statistical measurement of dispersion about an average, which, for a mutual fund, depicts how widely the returns varied over a certain period of time. Investors use the standard deviation of historical performance to try to predict the range of returns that are most likely for a given fund. When a fund has a high standard deviation, the predicted range of performance is wide, implying greater volatility.

**Total Return** is determined by taking the change in net asset value, reinvesting all income and capital-gains distributions, and dividing by the starting net asset value (NAV). Reinvestments are made using the actual reinvestment NAV, and daily payoffs are reinvested monthly. Total return is expressed as a percentage.

**Tracking Error** is a measure of the volatility of excess returns relative to a benchmark.

**Turnover Ratio** is a measure of the fund's trading activity which is computed by taking the lesser of purchases or sales (excluding all securities with maturities of less than one year) and dividing by average monthly net assets. A turnover ratio of 100% or more does not necessarily suggest that all securities in the portfolio have been traded. In practical terms, the resulting percentage loosely represents the percentage of the portfolio's holdings that have changed over the past year. A low turnover figure (20% to 30%) would indicate a buy-and-hold strategy while a high turnover (more than 100%) would indicate an investment strategy involving considerable buying and selling of securities.

**Upside Capture Ratio** measures a manager's performance in up markets relative to the market (benchmark) itself. For example, if the ratio is 110%, the manager has captured 110% of the up-market and outperformed the market on the upside.

## Sector Definitions

**Energy Sector:** The Energy Sector comprises companies whose businesses are dominated by either of the following activities: The construction or provision of oil rigs, drilling equipment and other energy related service and equipment, including seismic data collection. Companies engaged in the exploration, production, marketing, refining, and/or transportation of oil and gas products, coal and other consumer fuels.

**Materials Sector:** The Materials Sector encompasses a wide range of commodity-related manufacturing industries. Included in this sector are companies that manufacture chemicals, construction materials, glass, paper, forest products and related packaging products, and metals, minerals and mining companies, including producers of steel.

**Industrials Sector:** The Industrials Sector includes companies whose businesses are dominated by one of the following activities: The manufacture and distribution of capital goods, including aerospace and defense, construction, engineering and building products, electrical equipment and industrial machinery. The provision of commercial services and supplies, including printing, employment, environmental and office services. The provision of transportation services, including airlines, couriers, marine, road and rail and transportation infrastructure.

**Consumer Discretionary Sector:** The Consumer Discretionary Sector encompasses those industries that tend to be the most sensitive to economic cycles. Its manufacturing segment includes automotive, household durable goods, textiles and apparel and leisure equipment. The services segment includes hotels, restaurants and other leisure facilities, media production and services, and consumer retailing and services.

**Consumer Staples Sector:** The Consumer Staples Sector comprises companies whose businesses are less sensitive to economic cycles. It includes manufacturers and distributors of food, beverages and tobacco and producers of non-durable household goods and personal products. It also includes food and drug retailing companies as well as hypermarkets and consumer super centers.

**Health Care Sector:** The Health Care Sector encompasses two main industry groups. The first includes companies who manufacture health care equipment and supplies or provide health care related services, including distributors of health care products, providers of basic health-care services, and owners and operators of health care facilities and organizations. The second regroups companies primarily involved in the research, development, production and marketing of pharmaceuticals and biotechnology products.

**Financials Sector:** The Financials Sector contains companies involved in activities such as banking, mortgage finance consumer finance, specialized finance, investment banking and brokerage, asset management and custody, corporate lending, insurance, and financial investment, and real estate, including REITs.

**Information Technology Sector:** The Information Technology Sector covers the following areas: firstly, Technology Software and Services, including companies that primarily develop software in various fields such as the Internet, applications, systems, database management and/or home entertainment, and companies that provide information technology consulting and services, as well as data processing and outsourced services; secondly, Technology Hardware and Equipment, including manufacturers and distributors of communications equipment, computers and peripherals, electronic equipment and related instruments; and thirdly, Semiconductors and Semiconductor Equipment Manufacturers.

**Telecommunications Services Sector:** The Telecommunications Services Sector contains companies that provide communications services primarily through a fixed-line, cellular, wireless, high bandwidth and/or fiber optic cable network.

**Utilities Sector:** The Utilities Sector encompasses those companies considered electric, gas or water utilities, or companies that operate as independent producers and/or distributors of power.

## Regional Definitions

**North America:** United States and Canada

**Emerging Central & Latin America:** Mexico and Central and South America

**United Kingdom:** England, Northern Ireland, Scotland, Wales

**Developed Europe:** Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain

**Emerging Europe:** Russia and other Eastern European countries

**Africa/Middle East:** Africa and Western Asian countries

**Japan:** Japan

**Australasia:** Australia and New Zealand

**Developed Asia:** Hong Kong, Singapore, South Korea

**Emerging Asia:** China, India, Indonesia, Malaysia, Philippines, Thailand