
Predictive Power of Fees

Why Mutual Fund Fees Are So Important

Morningstar Manager Research

May 2016

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If you've been following Morningstar's research for long, you know how important we think expense ratios are to the fund selection equation. The expense ratio is the most proven predictor of future fund returns. I find that it is a dependable predictor when we run the data. That's also what academics, fund companies, and, of course, Jack Bogle, find when they run the data.

But it's been a couple of years since I provided the proof statement, so we have updated my data to show just how strong and dependable fees are as a predictor of future success. That's not to say investors should use them in isolation. There are many other things to consider, but investors should make expense ratios their first or second screen.

How We Ran the Test

To begin any test of predictive power, we use historical data so that we are using the data that investors would have had access to at the time. That includes funds that no longer exist. In fact, that's a key part of the story because higher-cost funds are much more likely to fail and be merged away. If you do not factor them in, you will see better performance from higher-cost funds than was the reality, as those that survived naturally are more likely to have produced better performance while so many failures have been culled.

We looked at a few different measures to test how expense ratios worked: total return over the ensuing period, load-adjusted returns, standard deviation, investor returns, and subsequent Morningstar Rating. In addition, we calculated a success ratio for all the above measures. The success ratio is our way of factoring in mutual funds that were merged away or liquidated over the ensuing time period. The other figures only include data on funds that survived the whole time period. But the success ratio asks, "What percentage of funds survived and outperformed their category group?" Only funds that did both count toward the success ratio, as it is hard to argue that funds that no longer exist or underperformed were successful.

For our tests, we began by grouping funds into quintiles within their peer group and then rolled that up into an asset class. That means we ordered each Morningstar Category, such as large growth, high-yield muni, and so on, into quintiles. Then we grouped all the cheapest-quintile funds in an asset class, then the second-cheapest-quintile funds, and so on.

We also ran all of the above tests against a universe in which only one share class per fund was included. Some readers of past studies wondered whether fees were as strong for selecting between funds rather than among share classes of the same fund. So, to eliminate comparisons of multiple

share classes of the same fund, we limited this test to the oldest share class of a fund. The first set of tables include all share classes and the second set show just one share class per fund.

We looked at the five years ended December 2015, the four years ended 2015, and so on. You can see the results for each time period in the data tables.

The Answer: Costs Really Are Good Predictors of Success

We've done this over many years and many fund types, and expense ratios consistently show predictive power.

Using expense ratios to choose funds helped in every asset class and in every quintile from 2010 to 2015. For example, in U.S. equity funds, the cheapest quintile had a total-return success rate of 62% compared with 48% for the second-cheapest quintile, then 39% for the middle quintile, 30% for the second-priciest quintile, and 20% for the priciest quintile. So, the cheaper the quintile, the better your chances. All told, cheapest-quintile funds were 3 times as likely to succeed as the priciest quintile. (If you're wondering why only one quintile had a success ratio above 50%, it's because many funds did not survive the time period. If no funds were merged away, then the overall success rates would average something close to 50%.) As it was, about 20% of the funds were merged away, making 40% the average success ratio point.

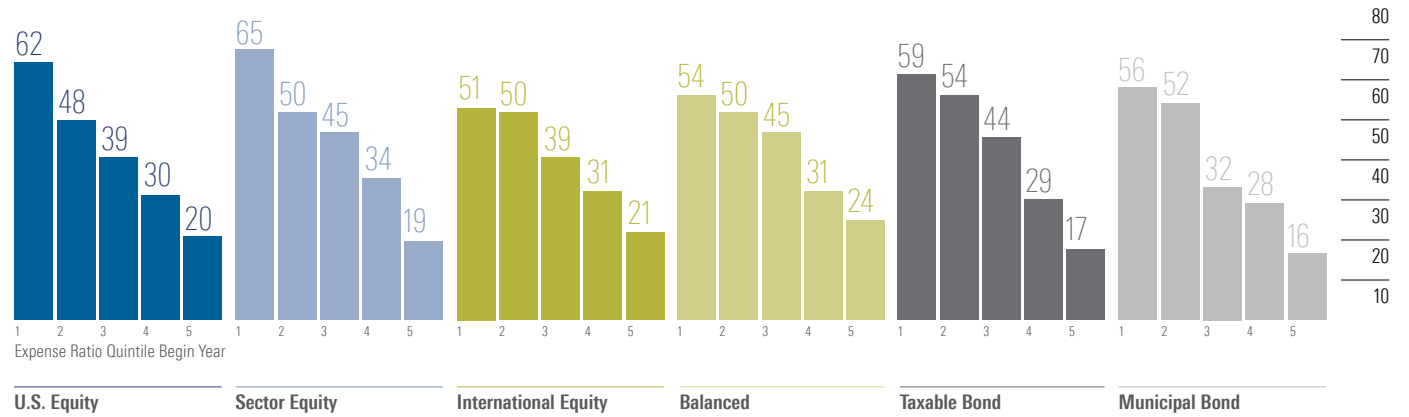
The pattern was pretty similar in other asset classes. For example, international-equity funds had a 51% success ratio for the cheapest quintile compared with 21% for priciest. Balanced funds had a 54% success rate for the cheapest quintile compared with 24% for the priciest. Taxable-bond funds were even more striking, as the cheapest quintile delivered a 59% success rate versus just 17% for the priciest quintile. Muni bonds had a similar pattern, with a 56% success rate for the cheapest quintile and 16% for the priciest. The predictive power also holds up in the other areas we tested. It points investors to a better outcome for investor returns and for load-adjusted returns. That makes some sense, as both are fairly closely tied to total returns.

It was a much weaker predictor of standard deviation, though that's not a big surprise, as fees and volatility are not very closely linked. For U.S. equity funds and sector funds, standard deviation was a hair lower for lower-cost funds. There wasn't much pattern for the other asset classes. Funds with high costs, especially in bonds, do tend to take greater risk in order to produce a competitive yield. However, that generally means taking on more credit risk, and credit risk damps standard deviation except when it blows up.

So, what if we limit our fee test to just one share class per fund? It actually shows stronger predictive power. For example, the success rate of returns in U.S. equity funds rose to 64% with just one share class versus 62% with all of them, and the priciest quintile falls to 15% versus 20% for all share classes. This was true in most asset classes except for international equity, where the success

rates became more compressed. More important than the slight improvement in results is the larger point that this clearly helps you choose among funds and that the share-class criticism of fee studies does not hold up. ■■

Exhibit 1 Low Costs Are the Path to Success—Subsequent Total Return Success Ratio



Source: Morningstar. Data as of 12-31-2015.

From 2010 to 2015, cheapest-quintile funds produced better success ratios than second-cheapest and so on, showing just how important costs are to the investing equation.

Appendix 1 Performance Statistics and Morningstar Star Ratings by Expense Quintile for All Share Classes

5-Year Average—All Share Classes

(1/1/2011 to 12/31/2015)

	US Equity					Sector Equity					International Equity				
Expense Ratio Quintile as of 12/31/2010															
Average Expense Ratio as of 12/31/2010	0.65	1.01	1.26	1.59	2.20	0.85	1.22	1.49	1.90	2.42	0.77	1.20	1.46	1.81	2.39
# Funds 5-Year Return Statistics	1213	1152	1065	1042	881	225	212	191	209	156	540	512	459	445	382
Total Return (Annualized)	10.91	10.34	9.93	9.53	8.88	7.22	6.49	6.24	5.86	3.86	3.15	3.34	2.97	2.50	2.07
Percent Rank in Category	36	45	51	57	65	36	45	48	58	66	45	45	48	55	63
Batting Average	75.68	61.46	52.68	41.27	31.90	74.67	58.02	59.16	41.15	28.21	60.56	61.33	52.94	43.37	32.72
Success Ratio	61.82	47.87	39.26	29.63	20.44	65.12	50.20	45.38	34.13	19.13	50.54	49.92	38.69	31.28	20.94
Load-Adj Return (Annualized)	10.87	10.19	9.46	9.25	8.77	7.17	6.16	5.66	5.62	3.72	3.08	3.18	2.55	2.15	1.89
Percent Rank in Category	35	46	56	59	64	35	47	54	57	64	44	45	52	57	63
Batting Average	76.26	60.52	43.38	39.12	31.67	75.56	55.66	47.40	42.11	29.49	61.37	60.55	49.02	39.78	34.11
Success Ratio	62.29	47.26	32.33	28.12	20.29	65.89	48.16	36.55	34.92	20.00	51.31	49.28	35.83	28.69	21.94
Investor Return (Annualized)	9.78	8.87	8.42	8.04	7.16	5.63	4.23	3.91	3.72	2.42	1.70	1.72	1.53	1.28	0.65
Percent Rank in Category	39	48	51	55	60	41	52	48	56	56	43	48	49	51	58
Batting Average	75.47	63.89	56.18	48.31	34.32	73.81	56.48	57.83	45.50	42.36	64.24	61.88	59.47	53.25	38.10
Success Ratio	53.87	41.51	33.38	29.57	18.62	60.08	44.49	38.55	34.13	26.52	49.15	43.88	35.99	33.23	21.44
Standard Deviation	13.47	13.62	13.72	13.64	13.90	16.40	16.66	16.66	16.78	17.09	15.03	14.77	14.90	14.93	14.91
Percent Rank in Category	45	49	51	51	55	46	51	50	52	49	50	48	50	49	51
Batting Average	60.18	52.08	46.85	48.56	43.13	60.44	50.00	53.93	48.33	50.00	46.67	49.61	46.62	46.52	46.86
Success Ratio	49.16	40.57	34.92	34.87	27.64	52.71	43.27	41.37	40.08	33.91	38.95	40.38	34.08	33.55	29.98
3-Year Star Rating 1/1/2011 to 12/31/2013	3.43	3.06	2.73	2.70	2.51	3.39	2.97	2.66	2.66	2.54	3.19	3.05	2.82	2.70	2.54
5-Year Star Rating 1/1/2011 to 12/31/2015	3.52	3.12	2.78	2.69	2.48	3.37	2.95	2.73	2.56	2.41	3.18	3.10	2.87	2.74	2.54
	Balanced					Taxable Bond					Municipal Bond				
Expense Ratio Quintile as of 12/31/2010															
Average Expense Ratio as of 12/31/2010	0.22	0.52	0.82	1.12	1.64	0.48	0.73	0.94	1.29	1.77	0.50	0.71	0.93	1.34	1.63
# Funds 5-Year Return Statistics	637	572	560	531	469	628	586	576	531	470	328	306	266	276	213
Total Return (Annualized)	5.99	5.72	5.56	5.20	4.73	3.14	2.90	2.79	2.48	2.00	4.96	4.92	4.64	4.46	4.04
Percent Rank in Category	41	45	48	58	62	38	43	49	59	71	42	42	54	60	71
Batting Average	64.68	60.14	56.43	41.05	35.18	67.52	64.16	52.95	36.16	23.40	63.11	61.11	40.98	37.32	24.41
Success Ratio	54.21	49.64	44.44	30.75	24.44	59.30	54.18	43.51	28.66	16.62	55.95	52.38	32.34	28.30	16.35
Load-Adj Return (Annualized)	5.83	5.42	5.29	4.92	4.57	3.12	2.79	2.42	2.28	1.89	4.87	4.48	4.09	4.30	3.94
Percent Rank in Category	42	49	51	60	61	36	44	57	60	69	37	49	62	54	64
Batting Average	64.99	54.37	53.39	38.61	36.89	71.50	62.97	41.84	35.40	23.62	69.82	47.71	32.33	41.30	26.76
Success Ratio	54.47	44.88	42.05	28.91	25.63	62.80	53.17	34.38	28.06	16.77	61.89	40.90	25.52	31.32	17.92
Investor Return (Annualized)	4.98	4.97	4.62	4.50	3.93	1.74	1.64	1.71	1.42	1.49	3.23	3.28	3.16	3.24	3.10
Percent Rank in Category	46	46	49	52	55	46	48	48	53	53	47	47	48	49	51
Batting Average	64.21	63.34	58.95	49.90	45.45	59.01	57.77	56.63	47.42	42.92	50.16	53.97	46.05	45.38	41.21
Success Ratio	46.97	44.88	41.21	33.71	28.89	48.53	43.95	38.37	32.99	27.95	42.16	38.10	29.38	31.04	25.79
Standard Deviation	8.48	8.54	8.67	8.51	8.46	3.69	3.75	3.78	3.91	3.85	3.53	3.71	3.62	3.85	3.73
Percent Rank in Category	50	50	52	50	48	48	49	49	52	50	44	49	49	52	53
Batting Average	49.92	48.78	45.18	50.09	52.45	56.69	55.80	56.42	49.72	53.19	67.99	60.78	65.04	52.90	53.52
Success Ratio	41.84	40.26	35.58	37.52	36.44	49.79	47.12	46.36	39.40	37.76	60.27	52.10	51.34	40.11	35.85
3-Year Star Rating 1/1/2011 to 12/31/2013	3.24	2.94	2.87	2.56	2.46	3.44	3.15	2.65	2.60	2.24	3.61	2.95	2.36	2.41	2.07
5-Year Star Rating 1/1/2011 to 12/31/2015	3.23	3.00	2.93	2.61	2.50	3.45	3.14	2.66	2.55	2.19	3.48	3.04	2.60	2.55	2.16

Appendix 1 Performance Statistics and Morningstar Star Ratings by Expense Quintile for All Share Classes (Continued)**4-Year Average—All Share Classes**

(1/1/2011 to 12/31/2015)

	US Equity					Sector Equity					International Equity					
Expense Ratio Quintile as of 12/31/2011	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Average Expense Ratio as of 12/31/2011	0.63	0.98	1.23	1.54	2.17	0.82	1.19	1.46	1.83	2.34	0.76	1.17	1.43	1.76	2.34	
# Funds 4-Year Return Statistics	1276	1206	1160	1106	955	235	217	215	216	177	612	541	514	507	438	
Total Return (Annualized)	14.16	13.72	13.20	12.77	12.18	9.48	8.53	9.34	8.90	7.03	7.14	7.60	7.32	6.67	6.53	
Percent Rank in Category	38	45	51	57	63	41	44	48	56	63	47	46	49	52	59	
Batting Average	75.94	63.76	53.88	45.48	35.71	66.38	59.45	53.49	41.67	32.77	53.59	56.01	51.56	46.55	40.41	
Success Ratio	64.69	52.64	42.09	34.74	24.53	60.23	51.81	45.82	37.19	24.47	46.52	45.29	38.74	35.70	27.57	
Load-Adj Return (Annualized)	14.12	13.55	12.61	12.39	12.00	9.41	8.16	8.62	8.46	6.85	7.05	7.39	6.83	6.16	6.35	
Percent Rank in Category	35	44	55	58	62	38	45	54	56	59	45	45	51	54	57	
Batting Average	77.82	63.52	46.29	43.49	36.75	72.34	56.68	43.72	41.20	36.16	55.72	57.86	49.03	43.59	41.55	
Success Ratio	66.29	52.43	36.16	33.22	25.25	65.64	49.40	37.45	36.78	27.00	48.37	46.79	36.84	33.43	28.35	
Standard Deviation	11.57	11.61	11.43	11.53	11.36	14.52	14.96	14.34	14.73	14.22	13.06	12.63	12.48	12.60	12.30	
Percent Rank in Category	47	51	50	51	52	50	53	50	51	50	56	51	50	50	48	
Batting Average	34.56	32.81	35.06	34.28	32.83	42.08	35.08	42.63	36.78	40.08	29.62	33.89	33.28	34.95	37.66	
Success Ratio	34.51	32.72	35.02	34.19	32.81	42.08	34.94	42.63	36.78	40.08	29.08	33.63	33.04	34.95	37.54	
3-Year Star Rating 1/1/2012 to 12/31/2014	3.46	3.18	2.77	2.75	2.63	3.24	2.98	2.70	2.58	2.54	3.13	3.08	2.82	2.72	2.65	

	Balanced					Taxable Bond					Municipal Bond					
Expense Ratio Quintile as of 12/31/2011	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Average Expense Ratio as of 12/31/2011	0.22	0.51	0.81	1.10	1.62	0.48	0.72	0.93	1.26	1.76	0.49	0.69	0.89	1.30	1.61	
# Funds 4-Year Return Statistics	679	634	643	595	508	697	658	655	608	538	341	319	286	296	229	
Total Return (Annualized)	7.71	7.53	7.29	6.87	6.34	2.61	2.41	2.28	1.98	1.60	3.85	3.70	3.64	3.25	2.96	
Percent Rank in Category	42	44	48	56	60	41	44	47	57	67	39	43	51	59	71	
Batting Average	68.63	65.77	61.90	51.43	43.50	62.98	59.73	55.73	38.49	25.65	62.46	59.56	45.45	38.18	21.83	
Success Ratio	58.69	56.20	51.62	40.80	31.04	57.31	52.33	48.47	31.79	19.49	56.50	52.78	39.16	30.05	15.67	
Load-Adj Return (Annualized)	7.55	7.14	6.92	6.50	6.12	2.60	2.27	1.84	1.72	1.41	3.77	3.20	2.96	2.97	2.77	
Percent Rank in Category	41	47	49	57	58	37	43	53	58	65	32	48	59	55	63	
Batting Average	71.72	61.04	59.41	50.25	44.49	71.45	62.61	49.31	40.46	26.77	74.49	52.04	37.41	41.55	27.07	
Success Ratio	61.34	52.16	49.55	39.87	31.74	65.01	54.86	42.90	33.42	20.34	67.37	46.11	32.23	32.71	19.44	
Standard Deviation	7.47	7.73	7.71	7.66	7.94	3.96	4.20	4.35	4.54	4.84	3.87	4.10	4.46	4.83	5.13	
Percent Rank in Category	48	51	49	49	51	46	46	48	50	53	42	46	48	52	53	
Batting Average	60.96	57.01	58.11	59.28	57.24	82.22	80.27	78.09	75.92	69.92	85.64	79.17	80.42	71.81	69.28	
Success Ratio	60.96	57.01	58.11	59.20	57.16	82.11	80.16	78.09	75.82	69.92	85.41	79.17	80.42	71.81	69.28	
3-Year Star Rating 1/1/2012 to 12/31/2014	3.29	3.04	2.95	2.72	2.59	3.32	3.17	2.72	2.68	2.39	3.58	3.03	2.54	2.50	2.15	

Appendix 1 Performance Statistics and Morningstar Star Ratings by Expense Quintile for All Share Classes (Continued)**3-Year Average—All Share Classes**

(1/1/2013 to 12/31/2015)

	US Equity					Sector Equity					International Equity					
Expense Ratio Quintile as of 12/31/2012	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Average Expense Ratio as of 12/31/2012	0.62	0.97	1.20	1.51	2.14	0.80	1.17	1.43	1.80	2.34	0.74	1.17	1.40	1.73	2.33	
# Funds 3-Year Return Statistics	1363	1289	1232	1193	1051	245	226	223	228	198	638	614	566	574	506	
Total Return (Annualized)	13.53	13.05	12.56	12.19	11.54	7.45	6.43	6.36	6.70	5.05	3.79	3.96	3.80	3.49	3.12	
Percent Rank in Category	39	45	51	56	62	42	45	48	56	63	48	47	48	52	56	
Batting Average	75.50	63.38	55.60	47.44	37.77	65.71	60.62	57.85	49.12	35.86	56.43	56.03	51.24	46.69	44.47	
Success Ratio	67.88	55.17	46.98	39.12	28.85	61.69	53.73	52.23	44.98	30.21	49.45	48.45	41.37	38.34	33.53	
Load-Adj Return (Annualized)	13.47	12.84	11.82	11.65	11.27	7.37	5.98	5.40	6.10	4.78	3.68	3.75	3.14	2.84	2.84	
Percent Rank in Category	37	45	56	58	61	40	47	54	57	60	46	46	52	56	56	
Batting Average	76.54	62.85	46.67	43.47	38.63	67.76	57.96	43.95	46.05	38.38	56.74	57.98	46.11	41.81	43.08	
Success Ratio	68.87	54.83	39.44	35.87	29.51	63.60	51.37	39.68	42.17	32.34	49.73	50.14	37.23	34.33	32.49	
Standard Deviation	11.71	11.69	11.60	11.70	11.53	14.65	14.69	15.00	15.02	14.61	12.19	11.99	11.94	11.87	11.83	
Percent Rank in Category	48	51	52	52	53	51	53	52	53	51	55	52	51	50	50	
Batting Average	31.44	31.10	32.97	32.69	31.30	42.15	38.98	41.70	38.96	40.00	32.18	35.36	33.96	34.33	33.28	
Success Ratio	31.40	30.99	32.92	32.62	31.25	42.15	38.82	41.70	38.96	40.00	32.01	35.21	33.67	34.33	33.23	
3-Year Star Rating 1/1/2013 to 12/31/2015	3.48	3.21	2.77	2.71	2.60	3.20	3.01	2.71	2.52	2.54	3.05	3.07	2.90	2.77	2.75	
	Balanced					Taxable Bond					Municipal Bond					
Expense Ratio Quintile as of 12/31/2012	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Average Expense Ratio as of 12/31/2012	0.21	0.51	0.79	1.10	1.64	0.49	0.73	0.93	1.23	1.75	0.49	0.67	0.87	1.28	1.60	
# Funds 3-Year Return Statistics	752	736	696	696	566	780	704	710	686	616	346	317	309	293	254	
Total Return (Annualized)	6.02	5.65	5.63	5.01	4.64	0.69	0.50	0.23	0.09	-0.45	2.71	2.44	2.51	2.08	1.61	
Percent Rank in Category	41	47	48	56	58	38	44	49	58	70	37	44	47	60	77	
Batting Average	70.08	61.55	60.92	50.86	45.05	70.77	59.09	51.27	38.05	24.35	70.81	62.46	56.96	38.91	14.17	
Success Ratio	61.71	54.45	51.02	42.04	33.60	65.79	53.27	45.33	33.00	19.79	66.94	58.24	51.46	32.76	11.36	
Load-Adj Return (Annualized)	5.82	5.16	5.19	4.51	4.27	0.67	0.31	-0.34	-0.26	-0.72	2.61	1.82	1.61	1.65	1.32	
Percent Rank in Category	41	51	51	58	58	35	44	58	60	68	30	51	61	58	67	
Batting Average	72.74	56.39	57.18	47.70	45.76	78.10	63.35	40.14	36.73	25.00	81.21	50.79	31.72	39.93	23.62	
Success Ratio	64.05	49.88	47.89	39.43	34.12	72.71	57.11	35.49	31.86	20.32	76.78	47.35	28.65	33.62	18.93	
Standard Deviation	7.28	7.44	7.69	7.60	7.84	3.99	4.06	4.35	4.23	4.60	3.68	3.82	4.23	4.46	4.70	
Percent Rank in Category	47	48	52	50	53	47	47	48	49	52	42	46	47	51	51	
Batting Average	63.00	61.54	57.04	59.33	56.60	80.67	79.36	77.81	77.34	71.77	87.16	82.35	81.58	76.15	72.56	
Success Ratio	63.00	61.54	57.04	59.26	56.52	80.57	79.26	77.71	77.24	71.77	87.16	82.35	81.58	76.15	72.56	
3-Year Star Rating 1/1/2013 to 12/31/2015	3.30	2.93	2.90	2.63	2.63	3.45	3.13	2.55	2.45	2.14	3.71	2.98	2.54	2.44	1.98	

Appendix 2 Performance Statistics and Morningstar Star Ratings by Expense Quintile for Oldest Share Class

5-Year Average—Oldest Share Class

(1/1/2011 to 12/31/2015)

	US Equity					Sector Equity					International Equity				
Expense Ratio Quintile as of 12/31/2010															
Average Expense Ratio as of 12/31/2010	0.61	1.01	1.27	1.54	2.69	0.81	1.24	1.47	1.80	2.57	0.74	1.21	1.48	1.76	2.55
# Funds 5-Year Return Statistics	500	447	512	311	91	111	90	79	47	17	222	198	193	118	29
Total Return (Annualized)	11.05	10.29	9.62	9.18	7.71	8.75	7.74	5.00	3.84	4.96	2.59	3.09	3.31	2.13	1.73
Percent Rank in Category	34	46	54	60	72	34	45	49	52	74	49	44	47	53	66
Batting Average	77.00	59.96	47.46	36.66	21.98	79.28	54.44	58.23	57.45	11.76	54.05	59.09	54.92	49.15	34.48
Success Ratio	63.95	49.72	37.33	28.43	16.13	72.13	50.00	47.42	42.86	10.53	45.98	49.58	43.62	33.33	25.64
Load-Adj Return (Annualized)	11.01	10.09	8.99	8.58	7.45	8.69	7.26	4.24	3.32	4.43	2.47	2.84	2.65	1.36	1.46
Percent Rank in Category	34	47	61	66	73	33	49	58	56	79	49	46	55	61	67
Batting Average	76.60	57.94	34.57	31.51	23.08	81.08	54.44	43.04	48.94	11.76	54.05	58.08	46.63	34.75	34.48
Success Ratio	63.62	48.05	27.19	24.44	16.94	73.77	50.00	35.05	36.51	10.53	45.98	48.73	37.04	23.56	25.64
Investor Return (Annualized)	10.22	9.22	8.40	7.91	6.73	7.35	5.54	3.10	1.62	3.44	1.55	1.49	1.88	0.85	0.42
Percent Rank in Category	34.88	44.78	51.78	55.83	61.58	36.06	48.40	43.59	48.64	63.44	43.32	48.82	48.21	49.36	58.74
Batting Average	81.00	68.42	55.58	44.35	32.00	82.24	60.49	61.19	52.78	33.33	64.22	62.94	58.00	52.75	36.00
Success Ratio	59.47	48.24	34.41	27.43	19.35	72.13	50.00	42.27	30.16	26.32	50.19	45.34	35.80	27.59	23.08
Standard Deviation	13.46	13.68	13.80	13.82	14.07	15.83	16.51	16.92	17.68	15.97	15.23	15.09	14.81	15.01	15.17
Percent Rank in Category	45	48	51	53	54	47	49	49	53	48	53	52	50	49	52
Batting Average	59.80	51.45	47.66	45.66	43.96	57.66	55.56	53.16	44.68	41.18	38.74	45.45	46.11	48.31	51.72
Success Ratio	49.67	42.67	37.48	35.41	32.26	52.46	51.02	43.30	33.33	36.84	32.95	38.14	36.63	32.76	38.46
3-Year Star Rating 1/1/2011 to 12/31/2013	3.50	3.05	2.53	2.52	2.32	3.34	2.81	2.54	2.71	2.06	3.07	2.97	2.73	2.37	2.22
5-Year Star Rating 1/1/2011 to 12/31/2015	3.57	3.09	2.61	2.44	2.17	3.38	2.84	2.67	2.55	1.82	2.97	3.04	2.80	2.56	2.39
	Balanced					Taxable Bond					Municipal Bond				
Expense Ratio Quintile as of 12/31/2010															
Average Expense Ratio as of 12/31/2010	0.20	0.52	0.85	1.13	1.71	0.45	0.72	0.94	1.21	1.78	0.49	0.73	0.87	1.21	1.64
# Funds 5-Year Return Statistics	265	178	164	123	59	273	236	239	110	39	143	176	131	46	8
Total Return (Annualized)	5.86	6.08	5.69	5.23	4.05	3.04	2.80	2.86	2.31	2.67	4.61	4.91	4.86	4.16	2.94
Percent Rank in Category	45	42	45	55	67	39	47	47	55	59	46	43	48	50	75
Batting Average	58.49	61.24	58.54	42.28	25.42	67.03	56.78	55.65	45.45	46.15	57.34	60.80	50.38	45.65	25.00
Success Ratio	52.72	49.10	44.86	34.21	19.23	60.00	48.20	46.83	37.59	37.50	52.23	53.23	41.77	38.18	22.22
Load-Adj Return (Annualized)	5.58	5.42	5.02	4.53	3.58	3.01	2.63	2.32	1.82	2.41	4.44	4.38	4.15	3.79	2.81
Percent Rank in Category	49	54	56	64	71	38	49	60	65	62	43	53	61	52	74
Batting Average	57.36	44.38	46.34	32.52	20.34	71.43	52.97	36.82	31.82	38.46	59.44	42.61	32.82	45.65	25.00
Success Ratio	51.70	35.59	35.51	26.32	15.38	63.93	44.96	30.99	26.32	31.25	54.14	37.31	27.22	38.18	22.22
Investor Return (Annualized)	5.24	5.60	4.77	4.45	3.29	2.02	1.89	1.69	1.42	2.05	3.27	3.38	3.36	3.25	2.43
Percent Rank in Category	41.78	38.73	47.97	50.60	56.46	39.31	42.28	44.77	48.89	40.41	43.55	43.31	46.24	35.59	59.33
Batting Average	70.25	72.79	62.86	51.75	36.54	68.90	66.51	59.67	50.56	47.22	59.26	63.70	59.80	60.00	28.57
Success Ratio	57.82	48.20	41.12	38.82	24.36	57.38	50.00	38.03	33.83	35.42	50.96	46.27	38.61	43.64	22.22
Standard Deviation	8.24	8.29	8.65	8.82	8.82	3.55	3.61	3.86	4.15	3.48	3.27	3.74	3.72	3.57	2.82
Percent Rank in Category	45	52	50	56	47	47	45	49	56	47	40	48	53	57	40
Batting Average	55.09	49.44	46.95	38.21	52.54	59.34	59.75	56.07	43.64	58.97	75.52	60.80	59.54	43.48	75.00
Success Ratio	49.66	39.64	35.98	30.92	39.74	53.11	50.72	47.18	36.09	47.92	68.79	53.23	49.37	36.36	66.67
3-Year Star Rating 1/1/2011 to 12/31/2013	2.97	2.66	2.60	2.34	1.99	3.34	3.04	2.51	2.11	2.41	3.34	2.83	2.34	2.23	1.63
5-Year Star Rating 1/1/2011 to 12/31/2015	3.01	2.89	2.76	2.40	2.15	3.40	2.92	2.57	2.31	2.54	3.22	2.98	2.69	2.59	1.88

Appendix 2 Performance Statistics and Morningstar Star Ratings by Expense Quintile for Oldest Share Class (Continued)**4-Year Average—Oldest Share Class**

(1/1/2012 to 12/31/2015)

	US Equity					Sector Equity					International Equity				
Expense Ratio Quintile as of 12/31/2011															
Average Expense Ratio as of 12/31/2011	0.59	0.99	1.24	1.50	2.78	0.78	1.21	1.44	1.74	2.58	0.73	1.17	1.47	1.71	2.49
# Funds 4-Year Return Statistics	512	459	537	348	99	114	90	82	55	13	244	199	219	149	33
Total Return (Annualized)	14.31	13.55	12.89	12.12	10.97	11.40	10.06	8.43	7.53	7.62	6.64	7.64	7.56	6.44	6.52
Percent Rank in Category	36	47	54	62	69	37	45	52	44	76	49	45	48	51	61
Batting Average	79.30	60.13	48.60	37.07	29.29	71.93	56.67	52.44	60.00	15.38	49.59	56.78	51.14	47.65	42.42
Success Ratio	68.47	51.98	40.15	28.79	23.20	67.21	50.50	45.74	51.56	11.76	44.00	47.88	40.43	34.47	35.90
Load-Adj Return (Annualized)	14.24	13.30	12.09	11.41	10.63	11.31	9.45	7.53	6.72	6.96	6.50	7.29	6.75	5.42	6.17
Percent Rank in Category	34	47	61	67	69	35	50	60	51	78	47	45	54	59	61
Batting Average	79.49	59.69	36.69	31.32	31.31	78.07	48.89	31.71	47.27	7.69	50.00	58.29	45.66	36.24	42.42
Success Ratio	68.63	51.60	30.31	24.33	24.80	72.95	43.56	27.66	40.63	5.88	44.36	49.15	36.10	26.21	35.90
Standard Deviation	11.47	11.72	11.52	11.66	11.65	14.11	14.88	14.22	14.77	14.52	13.14	12.56	12.67	12.64	12.34
Percent Rank in Category	47	52	51	53	51	51	52	47	52	54	58	53	49	50	44
Batting Average	33.56	33.33	36.52	33.71	36.00	41.80	35.00	46.81	32.81	35.29	26.64	30.51	36.00	34.95	51.28
Success Ratio	33.56	33.33	36.46	33.71	36.00	41.80	34.65	46.81	32.81	35.29	26.55	30.51	35.74	34.95	51.28
3-Year Star Rating 1/1/2012 to 12/31/2014	3.52	3.09	2.58	2.41	2.23	3.37	2.85	2.40	2.65	1.86	3.05	2.96	2.64	2.49	2.52
	Balanced					Taxable Bond					Municipal Bond				
Expense Ratio Quintile as of 12/31/2011															
Average Expense Ratio as of 12/31/2011	0.21	0.50	0.87	1.12	1.73	0.44	0.73	0.93	1.16	1.72	0.48	0.70	0.85	1.13	1.58
# Funds 4-Year Return Statistics	263	214	191	143	59	281	263	274	119	51	140	176	138	58	9
Total Return (Annualized)	7.54	7.67	7.41	6.67	5.87	2.40	2.37	2.25	1.98	2.16	3.53	3.62	3.79	3.09	2.33
Percent Rank in Category	46	45	44	56	66	42	48	45	55	57	43	46	46	47	71
Batting Average	63.50	61.21	64.92	53.85	33.90	61.57	55.51	60.22	43.70	41.18	55.71	55.11	52.17	51.72	22.22
Success Ratio	57.99	51.78	54.15	45.56	24.10	56.54	48.67	53.23	35.86	35.00	53.06	49.49	45.86	44.78	18.18
Load-Adj Return (Annualized)	7.24	6.88	6.52	5.83	5.26	2.37	2.14	1.61	1.33	1.81	3.35	2.97	2.93	2.48	2.00
Percent Rank in Category	46	55	55	63	66	38	49	57	65	58	38	55	61	56	70
Batting Average	65.02	47.20	49.21	38.46	33.90	70.46	53.99	45.26	33.61	37.25	66.43	42.05	35.51	41.38	22.22
Success Ratio	59.38	39.92	41.05	32.54	24.10	64.71	47.33	40.00	27.59	31.67	63.27	37.76	31.21	35.82	18.18
Standard Deviation	7.30	7.49	7.39	7.63	8.36	3.75	4.25	4.24	4.83	3.56	3.32	4.10	4.43	4.35	3.26
Percent Rank in Category	45	50	45	52	52	44	44	48	52	48	36	45	50	57	39
Batting Average	65.63	58.10	64.19	52.98	51.22	83.33	81.33	79.35	68.97	76.67	91.84	80.61	82.17	71.64	81.82
Success Ratio	65.63	58.10	64.19	52.66	50.60	83.33	81.33	79.35	68.97	76.67	91.84	80.61	82.17	71.64	81.82
3-Year Star Rating 1/1/2012 to 12/31/2014	3.06	2.72	2.71	2.40	2.20	3.21	2.99	2.58	2.31	2.62	3.29	2.84	2.50	2.27	1.78

Appendix 2 Performance Statistics and Morningstar Star Ratings by Expense Quintile for Oldest Share Class (Continued)**3-Year Average—Oldest Share Class**

(1/1/2013 to 12/31/2015)

	US Equity					Sector Equity					International Equity				
Expense Ratio Quintile as of 12/31/2012															
Average Expense Ratio as of 12/31/2012	0.57	0.98	1.22	1.48	2.36	0.77	1.19	1.42	1.73	2.55	0.71	1.17	1.43	1.68	2.42
# Funds 3-Year Return Statistics	520	484	554	395	110	119	91	93	51	16	250	204	247	177	40
Total Return (Annualized)	13.64	13.02	12.26	11.59	10.17	9.63	8.03	5.50	5.40	4.35	2.89	4.12	4.06	3.62	3.59
Percent Rank in Category	37	46	53	60	67	37	46	48	51	69	51	47	47	50	50
Batting Average	79.04	61.57	51.99	41.52	30.91	73.11	59.34	54.84	54.90	25.00	51.20	58.33	53.04	50.28	52.50
Success Ratio	71.85	54.98	45.79	34.97	26.15	70.16	52.43	52.04	49.12	22.22	45.88	51.97	44.41	40.83	42.00
Load-Adj Return (Annualized)	13.54	12.71	11.20	10.61	9.57	9.50	7.37	4.24	4.38	3.58	2.71	3.77	2.96	2.36	3.07
Percent Rank in Category	35	46	62	67	70	36	50	58	58	71	50	47	55	61	51
Batting Average	77.88	60.12	37.36	29.62	27.27	73.95	53.85	36.56	43.14	25.00	48.80	56.86	41.70	34.46	50.00
Success Ratio	70.80	53.69	32.91	24.95	23.08	70.97	47.57	34.69	38.60	22.22	43.73	50.66	34.92	27.98	40.00
Standard Deviation	11.70	11.80	11.67	11.77	12.05	14.08	14.60	15.32	15.28	14.73	12.32	11.88	12.06	12.00	11.45
Percent Rank in Category	49	52	52	54	58	52	52	52	55	47	58	52	51	51	41
Batting Average	29.02	31.18	34.08	32.20	27.13	41.94	39.22	43.88	35.09	38.89	26.62	36.24	36.39	33.94	48.00
Success Ratio	29.02	31.18	34.02	32.20	26.92	41.94	38.83	43.88	35.09	38.89	26.52	36.24	36.27	33.94	48.00
3-Year Star Rating 1/1/2013 to 12/31/2015	3.51	3.12	2.58	2.37	2.19	3.30	2.88	2.60	2.54	2.13	2.91	2.98	2.82	2.61	2.94
	Balanced					Taxable Bond					Municipal Bond				
Expense Ratio Quintile as of 12/31/2012															
Average Expense Ratio as of 12/31/2012	0.20	0.51	0.83	1.14	1.73	0.45	0.72	0.94	1.15	1.75	0.46	0.69	0.85	1.13	1.66
# Funds 3-Year Return Statistics	272	249	195	176	79	295	268	303	148	53	130	179	153	61	9
Total Return (Annualized)	5.93	5.76	5.80	4.86	4.33	0.72	0.67	0.13	-0.04	0.54	2.57	2.42	2.61	2.12	1.12
Percent Rank in Category	45	48	44	52	60	38	45	48	56	58	37	45	43	49	82
Batting Average	65.81	56.22	65.13	53.41	39.24	71.86	56.72	54.46	45.95	39.62	71.54	60.89	65.36	57.38	11.11
Success Ratio	60.68	50.00	53.81	45.63	31.96	67.73	51.01	49.40	40.00	35.59	69.92	58.29	58.48	50.00	10.00
Load-Adj Return (Annualized)	5.53	4.77	4.71	3.70	3.38	0.67	0.36	-0.69	-0.86	-0.08	2.35	1.61	1.49	1.17	0.72
Percent Rank in Category	47	59	57	63	65	35	48	62	69	66	33	56	64	64	82
Batting Average	62.13	42.97	47.18	39.20	34.18	80.00	55.97	35.31	23.65	30.19	76.15	40.78	26.80	29.51	—
Success Ratio	57.29	38.21	38.98	33.50	27.84	75.40	50.34	32.04	20.59	27.12	74.44	39.04	23.98	25.71	—
Standard Deviation	7.13	7.25	7.37	7.60	8.01	3.69	4.03	4.31	4.26	3.38	3.18	3.79	4.44	4.22	2.97
Percent Rank in Category	45	46	49	53	52	44	44	48	49	47	36	45	49	56	34
Batting Average	67.80	62.86	61.02	54.63	52.08	83.39	80.87	77.25	74.56	81.36	93.23	85.56	79.53	70.00	90.00
Success Ratio	67.80	62.86	61.02	54.37	51.55	83.39	80.87	77.25	74.12	81.36	93.23	85.56	79.53	70.00	90.00
3-Year Star Rating 1/1/2013 to 12/31/2015	3.09	2.63	2.67	2.45	2.32	3.39	2.97	2.44	2.06	2.33	3.42	2.83	2.49	2.26	1.63