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Morningstar's Active/Passive Barometer

A new yardstick for an old debate.

Morningstar Manager Research
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Executive Summary

Morningstar's Active/Passive Barometer is a semiannual report that measures the performance of U.S. active managers against their passive peers within their respective Morningstar Categories. The Active/Passive Barometer report is unique in the way it measures active managers' success relative to the actual, net-of-fee performance of passive funds, rather than an index, which isn't investable.

The report finds that actively managed funds have generally underperformed their passive counterparts, especially over longer time horizons, and experienced high mortality rates (that is, many are merged or closed). In addition, the report finds that failure tended to be positively correlated with fees (that is, higher-cost funds were more likely to underperform or be shuttered or merged away and lower-cost funds were likelier to survive and enjoyed greater odds of success). Fees matter. They are one of the only reliable predictors of success.

Introduction

The Active/Passive Barometer does not purport to settle the active-passive debate. Rather, it aims to ground that debate with data that reflects investors' shared experience and to assess investors' odds of succeeding with active managers across asset classes, time periods, and fee levels.

The Active/Passive Barometer is unique in the pragmatic way it measures active-manager success. For instance, it compares active managers' returns against a composite made up of relevant passive index funds. We believe this is a superior approach because it reflects the actual, net-of-fee performance of passive funds, rather than an index, which isn't investable. What's more, the Active/Passive Barometer assesses active funds based on their beginning-of-period category classification, so as to replicate the opportunity set an investor could have chosen from at the time. Finally, the report examines how the average dollar invested in various types of active funds has fared when compared with that of a passive alternative, as well as the importance of fees.

In sum, the report should give investors a better sense of their odds of picking winning managers across asset classes and categories while taking real-world factors into consideration.

Key Findings

The Active/Passive Barometer finds that actively managed funds have generally underperformed their passive counterparts, especially over longer time horizons, and experienced higher mortality rates (that is, many are merged or closed). In addition, the report finds that failure tends to be positively correlated with fees (that is, higher-cost funds are more likely to underperform or be shuttered or merged away and lower-cost funds were likelier to survive and enjoyed greater odds of success). The data also suggest that investors have tended to pick better-performing funds, as evidenced by the fact that full category asset-weighted returns were generally higher than the equal-weighted returns. (This result does not hold within fee quartiles.)

Exhibit 1 Active Funds' Success Rate by Category (%)

Category	1-Year	3-Year	5-Year	10-Year	10-Year (Lowest Cost)	10-Year (Highest Cost)
U.S. Large Blend	27.7	27.8	16.3	16.6	19.7	10.7
U.S. Large Value	36.5	34.6	19.6	33.7	48.4	22.2
U.S. Large Growth	49.3	18.9	11.9	12.2	20.4	8.9
U.S. Mid-Blend	42.1	34.6	27.7	11.0	10.8	5.6
U.S. Mid-Value	53.5	28.6	22.7	42.3	53.6	18.5
U.S. Mid-Growth	41.4	32.6	26.1	32.5	43.8	26.4
U.S. Small Blend	50.2	34.9	32.8	24.7	36.4	16.3
U.S. Small Value	66.7	54.1	38.0	38.3	43.3	23.3
U.S. Small Growth	22.3	28.6	20.6	23.2	33.3	10.8
Foreign Large Blend	63.6	47.6	44.7	33.9	50.0	23.8
Diversified Emerging Markets	63.0	55.9	61.2	42.3	61.1	23.5
Intermediate-Term Bond	28.5	45.4	57.3	39.7	50.7	30.7

Source: Morningstar. Data and calcuations as of 12/31/15.

Exhibit 2 Year-Over-Year Change in Active Funds' 1-Year Success Rate by Category (%)

	2015	2014	Year-Over-Year Change
U.S. Large Blend	27.7	31.2	–3.6
U.S. Large Value	36.5	16.2	20.3
U.S. Large Growth	49.3	26.0	23.4
U.S. Mid Blend	42.1	33.0	9.1
U.S. Mid Value	53.5	25.7	27.8
U.S. Mid Growth	41.4	49.5	–8.2
U.S. Small Blend	50.2	40.2	10.0
U.S. Small Value	66.7	23.6	43.0
U.S. Small Growth	22.3	51.6	–29.3
Foreign Large Blend	63.6	46.1	17.5
Diversified Emerging Markets	63.0	56.3	6.7
Intermediate Term Bond	28.5	46.5	–18.1

Source: Morningstar. Data and Calcuations as of 12/31/15.

There are a number of important patterns in the data above:

- Active funds' success rates improved in eight of the 12 categories we examined versus 2014.
- The small-value category saw the most meaningful improvement, where active funds' success rate nearly tripled, rising to 66.7% in 2015 versus 23.7% in 2014. Actively managed large-cap value and growth funds also enjoyed higher success rates in 2015. On the flip side, active small-growth managers saw the biggest comedown—the success rate of those funds fell 29.3 percentage points to 22.3%.
- The long-run patterns we see in the data are largely similar to those we highlighted in the first and second installments of this study, which were published in June 2015 and December 2015. Specifically, we found that most actively managed funds failed to survive and outperform their passive peers, especially over the trailing 10-year period. The average dollar in passively managed funds typically outperformed the average dollar invested in actively managed funds.
- Investors would have substantially improved their odds of success by favoring inexpensive funds, as evidenced by the higher-than-average success ratios of the lowest-cost funds across most categories.
- Conversely, investors choosing funds from the highest-cost quartile of their respective categories reduced their chances of success in all cases.
- The diversified emerging-markets category is the starkest example. The lowest-cost funds in this category had a success rate that was 18.8 percentage points higher than the success rate for the category as a whole during the decade ended December 2015. Meanwhile, the highest-cost mid-value funds had a success rate of just 23.5% during this same span, which is less than half that of the lowest-cost funds and about half that of the category as a whole.
- Value managers had higher odds of long-term success than other types of active funds. The lowest-cost mid-value funds enjoyed the greatest long-term odds of success (53.6%) and the highest-cost mid-blend funds the lowest (5.6%).
- Long-term success rates were generally higher among small-cap, mid-cap, foreign, and intermediate-term bond funds than U.S. large-cap funds.
- At 77.5%, actively managed diversified emerging-markets funds had the highest 10-year survivorship rate of any category we studied.

Results by Category

U.S. Large Caps

- Long-run success rates across actively managed U.S. large-cap funds have been generally lower than those among mid- and small-cap U.S. equity funds.

- The large-growth category has been particularly difficult for active managers. Roughly half the active funds that existed in this category 10 years ago survived the decade, and just 12.2% managed to both survive and outperform their average passively managed peer.

- Large-growth funds' struggles and large-value funds' relatively greater success ratios may be evidence of "Dunn's Law" in action. Over the decade ended Dec. 31, 2015, the Russell 1000 Value Index increased at an annualized rate of 5.43%. Meanwhile, the Russell 1000 Growth Index increased by 7.76% on an annualized basis. Thus, many active large-cap growth managers have been penalized for straying from their style, while large-cap value managers have been rewarded for out-of-style bets.

- Attrition rates are high among large-cap funds. Overall, just 55% of large-cap funds survived to the end of the 10-year period ended Dec. 31, 2015. The odds of survival improved to about 62% for the lowest-cost funds but sagged to 44% for the highest-cost funds.

Exhibit 3 U.S. Large Blend

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	Active Success Rate (%)
Total Return									
1-Year Trailing	405	96.1	119	99.2	–1.0	0.9	–1.9	0.4	27.7
3-Year Trailing	442	88.0	116	88.8	13.0	14.8	12.2	14.2	27.8
5-Year Trailing	498	74.3	121	79.3	10.2	12.3	9.6	11.9	16.3
10-Year Trailing	487	56.9	112	67.9	5.9	7.2	5.9	7.0	16.6
Performance by Fee Quartile									
(Trailing 10 Years)									
25th Percentile	122	61.5	28	75.0	6.6	7.3	6.1	7.2	19.7
50th Percentile	122	66.4	28	71.4	5.8	7.1	6.2	7.1	22.1
75th Percentile	122	52.5	28	71.4	5.2	6.7	5.8	6.9	11.5
100th Percentile	121	47.1	27	51.9	5.5	6.8	5.4	6.7	10.7

Source: Morningstar. Data and calcuations as of 12/31/15.

Exhibit 4 U.S. Large Value

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	Active Success Rate (%)
Total Return									
1-Year Trailing	348	98.0	52	100	–3.0	–1.8	–4.2	–2.6	36.5
3-Year Trailing	318	91.2	41	97.6	12.3	13.3	11.5	12.7	34.6
5-Year Trailing	322	80.1	35	97.1	10.1	11.4	9.7	11.2	19.6
10-Year Trailing	362	58.8	18	77.8	5.9	6.1	5.6	5.6	33.7
Performance by Fee Quartile (Trailing 10 Years)									
25th Percentile	91	65.9	5	80.0	6.3	6.2	6.0	6.0	48.4
50th Percentile	91	63.7	5	80.0	5.7	5.3	5.6	5.7	36.3
75th Percentile	90	51.1	4	75.0	5.2	5.8	5.5	4.8	27.8
100th Percentile	90	54.4	4	75.0	4.5	3.6	5.0	4.8	22.2

Source: Morningstar. Data and calcuations as of 12/31/15.

Exhibit 5 U.S. Large Growth

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	Active Success Rate (%)
Total Return									
1-Year Trailing	452	96.5	45	100	5.0	4.3	3.3	3.3	49.3
3-Year Trailing	470	88.5	40	100	16.4	16.3	15.0	17.1	18.9
5-Year Trailing	461	77.4	34	91.2	12.4	13.4	11.3	14.0	11.9
10-Year Trailing	451	50.8	27	77.8	7.5	8.3	6.9	8.5	12.2
Performance by Fee Quartile (Trailing 10 Years)									
25th Percentile	113	60.2	7	85.7	7.9	8.4	7.5	8.2	20.4
50th Percentile	113	63.7	7	85.7	6.7	8.6	6.9	9.1	11.5
75th Percentile	113	45.1	7	71.4	6.7	8.0	6.8	8.6	8.0
100th Percentile	112	33.9	6	66.7	6.4	10.0	6.4	8.8	8.9

Source: Morningstar. Data and calcuations as of 12/31/15.

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U.S. Mid-Caps

- Long-run success rates for actively managed U.S. mid-cap funds varied more widely than for U.S. large- or small-cap funds. At one extreme, mid-value funds tied with diversified emerging-markets funds for the highest 10-year success rate of any category we examined, while mid-blend funds had the lowest success rate.

- Trailing 10-year asset-weighted returns for passively managed mid-value funds were the lowest of the nine U.S. equity categories while those generated by index-tracking funds in the mid-blend category were the third-highest, lagging only the small- and large-growth categories.

- These extremes are partly evidence of the "crossroads" status of the mid-cap category, which is populated with many funds that may have relatively "messy" portfolios (that bleed into other market-cap segments and styles) or could otherwise be passers-by, as they migrate "south" from large-cap territory or "north" from the small-cap space, for example.

- Also of note is the narrow gap in success rates among active funds in the lowest- and highest-cost quartiles of the mid-blend category. This is the only category we examined where the lowest-cost funds did not have higher success rates than their average counterpart.

Exhibit 6 U.S. Mid-Blend

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	Active Success Rate (%)
Total Return									
1-Year Trailing	114	97.4	46	100	–5.0	–2.4	–5.1	–3.3	42.1
3-Year Trailing	136	89.0	45	93.3	12.3	13.5	11.0	12.7	34.6
5-Year Trailing	137	78.1	34	88.2	9.9	10.9	8.6	10.2	27.7
10-Year Trailing	145	70.3	26	76.9	6.1	7.8	6.2	7.7	11.0
Performance by Fee Quartile (Trailing 10 Years)									
25th Percentile	37	73.0	7	85.7	6.5	7.8	6.4	7.9	10.8
50th Percentile	36	75.0	7	100	6.1	7.8	6.7	7.9	13.9
75th Percentile	36	75.0	6	83.3	6.2	7.7	6.2	7.6	13.9
100th Percentile	36	58.3	6	33.3	4.3	7.5	4.8	6.7	5.6

Source: Morningstar. Data and calcuations as of 12/31/15.

Exhibit 7 U.S. Mid-Value

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	Active Success Rate (%)
Total Return									
1-Year Trailing	114	97.4	22	100	–4.0	–3.5	–5.4	–5.2	53.5
3-Year Trailing	112	92.0	19	94.7	11.7	13.3	11.4	13.0	28.6
5-Year Trailing	119	81.5	15	93.3	9.5	11.1	9.4	10.7	22.7
10-Year Trailing	111	74.8	9	88.9	6.2	6.5	6.3	6.1	42.3
Performance by Fee Quartile (Trailing 10 Years)									
25th Percentile	28	75.0	3	66.7	6.4	7.3	6.8	7.2	53.6
50th Percentile	28	85.7	2	100	6.1	5.9	6.1	6.7	46.4
75th Percentile	27	88.9	2	100	6.6	3.8	6.6	4.8	48.2
100th Percentile	27	48.2	2	100	5.5	4.2	5.2	4.6	18.5

Source: Morningstar. Data and calcuations as of 12/31/15.

Exhibit 8 U.S. Mid-Growth

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	Active Success Rate (%)
Total Return									
1-Year Trailing	220	94.6	21	100	0.3	0.7	–1.2	–0.4	41.4
3-Year Trailing	224	88.0	22	90.9	13.3	13.8	12.6	13.2	32.6
5-Year Trailing	226	78.8	20	90.0	10.0	10.8	9.1	10.6	26.1
10-Year Trailing	289	56.4	10	90.0	7.1	7.6	6.7	7.0	32.5
Performance by Fee Quartile (Trailing 10 Years)									
25th Percentile	73	63.0	3	66.7	8.0	8.2	7.4	8.2	43.8
50th Percentile	72	59.7	3	100	7.1	7.6	7.0	6.7	31.9
75th Percentile	72	56.9	2	100	6.1	5.7	6.5	5.8	27.8
100th Percentile	72	45.8	2	100	5.8	7.7	6.0	7.6	26.4

Source: Morningstar. Data and calcuations as of 12/31/15.

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U.S. Small Caps

- Long-run success rates among actively managed U.S. small-cap funds were generally higher than those seen among large-cap funds.

- Passively managed small-blend funds had the second-lowest 10-year survivorship rate of any U.S. equity category (passive large-blend funds placed first). This was driven largely by the extinction of more than half of the most costly passive options in this category. Just three of the seven passive funds in the most costly quartile of this category lasted through the end of the decade.

- As is the case in large caps and mid-caps, the small-cap growth category had the lowest survivorship rate among its size cohort. Just 55% of the funds that were in the category at the end of December 2005 lived to see December 2015.

Exhibit 9 U.S. Small Blend

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	Active Success Rate (%)
Total Return									
1-Year Trailing	215	96.3	51	94.1	–5.0	–3.7	–5.7	–4.9	50.2
3-Year Trailing	195	93.3	43	95.4	9.9	12.4	10.3	12.0	34.9
5-Year Trailing	186	85.5	36	88.9	8.1	10.1	8.0	9.5	32.8
10-Year Trailing	174	66.7	30	76.7	6.1	7.4	5.6	6.7	24.7
Performance by Fee Quartile (Trailing 10 Years)									
25th Percentile	44	77.3	8	75.0	6.5	7.5	6.7	7.4	36.4
50th Percentile	44	63.6	8	87.5	6.2	7.3	5.8	7.3	22.7
75th Percentile	43	67.4	7	100	5.9	6.5	5.7	6.5	23.3
100th Percentile	43	58.1	7	42.9	4.3	6.2	3.6	6.2	16.3

Source: Morningstar. Data and calcuations as of 12/31/15.

Exhibit 10 U.S. Small Value

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	Active Success Rate (%)
Total Return									
1-Year Trailing	117	96.6	18	100	–6.5	–5.8	–7.8	–8.5	66.7
3-Year Trailing	111	95.5	17	100	9.9	11.6	8.9	10.0	54.1
5-Year Trailing	100	89.0	15	100	8.1	9.3	7.7	8.8	38.0
10-Year Trailing	120	71.7	9	88.9	6.2	6.5	6.0	6.1	38.3
Performance by Fee Quartile									
(Trailing 10 Years)									
25th Percentile	30	60.0	3	66.7	6.5	7.1	6.2	7.1	43.3
50th Percentile	30	80.0	2	100	6.0	5.5	5.7	6.6	36.7
75th Percentile	30	93.3	2	100	6.4	6.6	6.4	6.6	50.0
100th Percentile	30	53.3	2	100	5.9	4.9	5.7	3.9	23.3

Source: Morningstar. Data and calcuations as of 12/31/15.

Exhibit 11 U.S. Small Growth

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	Active Success Rate (%)
Total Return									
1-Year Trailing	224	95.5	13	100	–2.2	–1.5	–2.3	0.2	22.3
3-Year Trailing	220	87.3	12	100	12.4	13.0	12.1	13.5	28.6
5-Year Trailing	219	77.6	9	100	10.0	10.7	9.0	11.0	20.6
10-Year Trailing	263	54.8	9	88.9	7.2	8.2	6.4	7.5	23.2
Performance by Fee Quartile									
(Trailing 10 Years)									
25th Percentile	66	63.6	3	66.7	7.6	8.4	7.1	8.5	33.3
50th Percentile	66	63.6	2	100	6.9	8.1	7.0	8.8	27.3
75th Percentile	66	53.0	2	100	6.6	6.2	6.6	6.0	21.2
100th Percentile	65	38.5	2	100	5.8	6.6	4.6	6.6	10.8

Source: Morningstar. Data and calcuations as of 12/31/15.

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Foreign Large Blend

- Investors in the lowest-cost quartile of actively managed foreign large-blend funds had one of the best success rates of any subgroup we examined. Over the 10-year period ended December 2015, these funds had a 50% success rate.

- The high success rates among foreign large-blend funds can be partly attributed to benchmark misspecification. Virtually all of the index funds and exchange-traded funds in this category that existed 10 years ago were benchmarked to the MSCI EAFE Index. The cap-weighted benchmark has large allocations to Japanese and UK stocks (as of March 31, 2016, the two represent more than 42% of the index's value). The relatively lackluster performance of both markets over the past 10 years has weighed on the MSCI EAFE Index's performance and created ample opportunity for active managers to add value by way of either underweighting these markets, being more selective within them, or outright omitting them from their portfolios.

- Investors have consistently chosen above-average funds in this category. This is evidenced by the fact that active funds' asset-weighted performance exceeded their equal-weighted performance during the trailing three-, five-, and 10-year periods we examined.

Exhibit 12 Foreign Large Blend

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	Active Success Rate (%)
Total Return									
1-Year Trailing	184	97.3	50	98.0	–2.6	–2.5	–1.4	–2.3	63.6
3-Year Trailing	191	88.5	41	90.2	4.5	3.2	3.8	4.0	47.6
5-Year Trailing	197	77.7	35	82.9	3.3	2.3	2.6	2.5	44.7
10-Year Trailing	168	60.1	19	79.0	3.5	2.7	2.6	2.6	33.9
Performance by Fee Quartile (Trailing 10 Years)									
25th Percentile	42	69.1	5	60.0	4.1	3.1	3.3	3.0	50.0
50th Percentile	42	73.8	5	80.0	2.0	2.9	2.3	2.8	38.1
75th Percentile	42	45.2	5	100	3.3	2.6	2.5	2.5	23.8
100th Percentile	42	52.4	4	75.0	3.0	0.9	2.3	1.7	23.8

Source: Morningstar. Data and calcuations as of 12/31/15.

Diversified Emerging Markets

- The lowest-cost quintile of active funds in the diversified emerging-markets category had a success rate of just 24% over the 10-year period ended Dec. 31, 2015.

- At 77.5%, actively managed diversified emerging-markets funds had the highest 10-year survivorship rate of any category we studied.

Exhibit 13 Diversified Emerging Markets

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	Active Success Rate (%)
Total Return									
1-Year Trailing	208	95.7	58	86.2	–13.9	–15.4	–13.6	–15.9	63.0
3-Year Trailing	161	88.8	50	86.0	–5.7	–7.3	–5.7	–7.2	55.9
5-Year Trailing	116	86.2	33	90.9	–4.0	–5.3	–4.5	–5.4	61.2
10-Year Trailing	71	77.5	3	100	3.6	3.1	2.9	3.1	42.3
Performance by Fee Quartile (Trailing 10 Years)									
25th Percentile	18	83.3	1	100	3.7	3.4	3.6	3.4	61.1
50th Percentile	18	83.3	1	100	4.3	2.6	3.0	2.6	55.6
75th Percentile	18	77.8	1	100	2.8	2.9	3.0	2.9	27.8
100th Percentile	17	64.7	0	0.0	2.1	0.0	1.5	0.0	23.5

Source: Morningstar. Data and calcuations as of 12/31/15.

Intermediate-Term Bond

- Actively managed intermediate-term bond funds had the third-highest 10-year success rate among the categories we examined, with 39.7% of active funds in this category surviving the 10-year period and outperforming their average passive peer.

- This category saw significant deterioration in its one-year success rate versus our first analysis, which contained data for the one-, three-, five-, and 10-year periods ended Dec. 31, 2014. This likely reflects the relatively greater credit exposure of many active funds in this category relative to their passive counterparts, many of which are benchmarked to the Barclays U.S. Aggregate Bond Index. In 2015, credit bonds—as proxied by iShares Core U.S. Credit Bond CRED—declined 0.98% in value while the iShares Core U.S. Aggregate Bond ETF AGG (which tracks the aforementioned Barclays index) increased 0.48%.

Exhibit 14 Intermediate-Term Bond

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	Active Success Rate (%)
Total Return									
1-Year Trailing	260	96.5	32	100	0.2	0.5	–0.1	0.5	28.5
3-Year Trailing	269	89.6	30	93.3	1.3	1.3	1.2	1.2	45.4
5-Year Trailing	274	78.1	25	92.0	3.5	3.1	3.1	2.9	57.3
10-Year Trailing	300	58.0	20	75.0	4.6	4.4	4.0	4.1	39.7
Performance by Fee Quartile									
(Trailing 10 Years)									
25th Percentile	75	58.7	5	80.0	4.7	4.5	4.5	4.7	50.7
50th Percentile	75	53.3	5	80.0	5.0	4.1	4.2	4.3	36.0
75th Percentile	75	62.7	5	60.0	3.7	4.2	3.8	4.3	41.3
100th Percentile	75	57.3	5	80.0	3.8	2.6	3.9	3.2	30.7

Source: Morningstar. Data and calcuations as of 12/31/15.

Appendix—Summary of results for the periods ended June 30, 2015 and Dec. 31, 2014

Exhibit 15 Summary of Results for the Period Ending June, 30, 2015

	Active Funds' Success Rates by Category (%)			
Category	1-Year	3-Year	5-Year	10-Year
U.S. Large Blend	43.0	38.8	20.5	22.0
U.S. Large Value	49.1	54.5	28.5	26.3
U.S. Large Growth	43.5	26.8	9.9	13.9
U.S. Mid-Blend	40.2	30.3	24.3	12.1
U.S. Mid-Value	63.9	33.3	32.1	53.5
U.S. Mid-Growth	47.1	32.0	22.2	36.6
U.S. Small Blend	36.2	36.4	31.9	22.8
U.S. Small Value	44.0	31.1	30.2	43.5
U.S. Small Growth	52.5	40.4	28.6	27.9
Foreign Large Blend	58.0	42.6	43.5	35.8
Diversified Emerging Markets	46.4	42.7	50.0	21.2
Intermediate-Term Bond	26.0	69.7	64.9	40.5

Source: Morningstar. Calcuations as of 6/30/15.

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Exhibit 16 Summary of Results for the Period Ending December, 31, 2014

	Active Funds' Success Rates by Category (%)			
Category	1-Year	3-Year	5-Year	10-Year
U.S. Large Blend	31.2	34.3	18.8	21.8
U.S. Large Value	16.2	39.9	16.9	38.6
U.S. Large Growth	26.0	25.2	10.7	16.7
U.S. Mid-Blend	33.0	33.0	17.5	14.0
U.S. Mid-Value	25.7	41.8	19.0	54.0
U.S. Mid-Growth	49.5	36.5	25.9	27.0
U.S. Small Blend	40.2	35.2	34.2	35.8
U.S. Small Value	23.6	21.0	40.2	47.2
U.S. Small Growth	51.6	41.6	27.9	24.8
Foreign Large Blend	46.1	42.6	47.6	39.1
Diversified Emerging Markets	56.3	89.3	65.8	34.8
Intermediate-Term Bond	46.5	73.2	62.6	43.4

Source: Morningstar. Calcuations as of 12/31/14.

Appendix—Methodology

Data Source

Morningstar's U.S. open-end and exchange-traded funds database.

Universe

All ETFs and open-end mutual funds (excluding funds of funds and money market funds) in each Morningstar Category that existed at the beginning of the relevant period (including funds that did not survive to the end of the period) defined the eligible universe. To be included, the fund's inception date must precede the start of the period and the obsolete date cannot predate the start of the period. In addition, each must have asset data for at least one share class in the month prior to the start of the sample period (the beginning of the trailing one-, three-, five-, or 10-year period) to facilitate asset-weighting.

Survivorship

To calculate survivorship, we divide the number of distinct funds (based on unique fund ID at the beginning of the period) that started and ended the period in question by the total number of funds that existed at the onset of the period in question (the beginning of the trailing one-, three-, five-, or 10-year period).

Asset-Weighted Returns

We calculate the asset-weighted returns for each cohort using each share class's monthly assets and returns. When a fund becomes obsolete, its historical data remains in the sample. Funds that incept or migrate into the category after the start of the period are not included.

Equal-Weighted Returns

In order to come up with a single return figure for funds with multiple share classes, we first calculate the asset-weighted average of all the fund's share classes. We then take the simple equal-weighted average of the monthly returns for each fund in the group and compound those returns over the sample period. As before, when a fund becomes obsolete, its historical data remains in the sample. Funds that incept or are moved into the category after the start of the period are not included.

Success Rate

The success rate indicates what percentage of funds that started the sample period went on to survive and generate a return in excess of the equal-weighted average passive fund return over the period. This approach differs from the convention of using a single, representative index to gauge success. We do not consider magnitude of outperformance in defining success—a fund that just barely beat the passive alternative counts as much as a fund that significantly outperformed.

As in the equal-weighted return calculation, we calculate the asset-weighted average of all the fund's share classes to come up with a single return figure for funds with multiple share classes. We then rank the funds by their composite returns, count the number that rank higher than the equal-weighted average return for the passive funds in the category, and divide that number by the number of funds at the beginning of the period (using the same number from the denominator of the survivorship calculations).

Fees

We rank each fund by its annual report expense ratio from the year prior to the start of the sample period and group them into quartiles. We then apply the same steps described above to calculate the success rates for funds in each quartile. To be counted in the starting number of funds used for purposes of calculating the survivorship and success rates, each fund must have an annual report expense ratio at the beginning of the sample period.

Appendix—How our approach compares with others

How is our approach different from others?

- Our "benchmark" for measuring success is different from others. We measure active managers' success relative to investable passive alternatives in the same Morningstar Category. For example, an active manager in the U.S. large-blend category is measured against a composite of the performance of its index mutual fund and ETF peers (for example, Vanguard Total Stock Market Index Fund VTSMX, SPDR S&P 500 ETF SPY, and so on). Specifically, we calculate the equal- and asset-weighted performance of the cohort of index-tracking (that is, "passive") options in each category that we examine and use that figure as the hurdle that defines success or failure for the active funds in the same category. The magnitude of outperformance or underperformance does not influence the success rate. However, this data is reflected in the average return figures for the funds in each group, which we report separately.

- We believe that this is a better benchmark because it reflects the performance of actual investable options and not an index. Indexes are not directly investable. Their performance does not account for the real costs associated with replicating their performance and packaging and distributing them in an investable format. Also, the success rate for active managers can vary depending on one's choice of benchmark. For example, the rate of success among U.S. large-blend managers may vary depending on whether one uses the S&P 500 or the Russell 1000 Index as their basis for comparison. By using a composite of investable alternatives within funds' relevant categories as our benchmark, we account for the frictions involved in index investing (fees, and so on) and we mitigate the effects that might stem from cherry-picking a single index as a benchmark. The net result is a far more fair comparison of how investors in actively managed funds have fared relative to those who have opted for a passive approach.

- We measure each fund's performance based on the asset-weighted average performance of all of its share classes in calculating success rates. This approach reflects the experience of the average dollar invested in each fund. We then rank these composite fund returns from highest to lowest and count the number of funds whose returns exceed the equal-weighted average of the passive funds in the category. The success rates are defined as the ratio of these figures to the number of funds that existed at the beginning of the period. Given this unique approach, our field of study is narrower than others, as the universe of categories that contained a sufficient set of investable index-tracking funds was fairly narrow at the end of 2004. We expect that number of categories we include in this study will expand over time.

- We cut along the lines of cost. Cost matters. Fees are one of the best predictors of future fund performance. We have sliced our universe into fee quartiles to highlight this relationship.

How is our approach similar to others?

- Our approach to this analysis is similar to others in that the overarching objective is to gauge the aggregate performance of active managers over time.

- Similar to other studies, we group active managers with their peers, using Morningstar Categories, and assess their performance against relevant benchmarks.

- We look at managers' performance on an equal-weighted basis. This illustrates how the average active manager in a given category has fared.

- Of course, investors don't necessarily select "average" managers, so we also look at active managers' performance on an asset-weighted basis. This better reflects investors' reality, as it shows how the average investor dollar has fared within a given category.

- We adjust for survivorship. We include all funds that existed at the beginning of the periods that we have examined in the denominator of our success rate calculations. This ensures that our results reflect the opportunity set that was available to investors at the onset of each period. Nonsurviving funds' returns are also included in our return calculations for the periods when they were around.