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# Morningstar's Active/Passive Barometer

## A new yardstick for an old debate

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### Morningstar Manager Research

June 2015

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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 (i.e. many are merged or closed). In addition, the report finds that failure tended to be positively correlated with fees (i.e. 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.

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### 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 to 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 (i.e. many are merged or closed). In addition, the report finds that failure tends to be positively correlated with fees (i.e. 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	32.7	35.6	25.1	21.6	29.7	9.9
U.S. Large Value	21.3	49.0	25.4	38.2	66.3	18.6
U.S. Large Growth	42.3	26.0	12.2	16.9	28.9	14.2
U.S. Mid Blend	36.5	34.5	23.8	13.7	21.7	4.6
U.S. Mid Value	20.9	34.8	13.5	54.4	68.2	27.3
U.S. Mid Growth	48.0	37.0	31.1	26.8	47.1	13.4
U.S. Small Blend	40.7	35.5	37.1	38.9	35.7	34.2
U.S. Small Value	25.2	22.0	47.7	48.4	52.2	34.8
U.S. Small Growth	51.4	40.8	30.2	24.4	33.8	17.9
Foreign Large Blend	47.0	44.8	52.8	40.2	58.5	34.2
Diversified Emerging Markets	58.2	70.4	65.8	36.6	47.4	22.2
Intermediate Term Bond	47.9	73.0	69.7	42.4	54.9	30.5

Source: Morningstar. Data and calculations as of 12/31/14.

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

- ▶ Investors would have substantially improved their odds of success by favoring inexpensive funds, as evidenced by the higher success-ratios of the lowest-cost funds in all but one category.
- ▶ On the flip side of the coin, investors choosing funds from the highest-cost quartile of their respective categories reduced their chances of success in all cases.
- ▶ The large value category is the most poignant example. The lowest cost funds in this segment had a success rate that was 28 percentage points higher than the category average during the decade ending December 2014. Meanwhile, their high-cost peers had a dismal success rate of just 18.6% during this same span.
- ▶ Odds of success generally decreased over longer time periods with value-oriented funds being the notable exception.

- ▶ 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 (68%) and the highest-cost mid-blend funds the lowest (5%).
- ▶ Long-term success rates were higher among small-cap, mid-cap, foreign, and intermediate-term bond funds than U.S. large-cap funds.

## Results by Category

### U.S. Large Caps

- ▶ In the U.S. large-blend category, more than three-quarters of active managers lagged the equal-weighted composite of their passive peers during the ten year period ending December 31, 2014. The average active large-blend fund's returns trailed return of the average passive by around 0.82% per year (94 basis points annualized on an asset-weighted basis).
- ▶ Only 50.2% of the actively managed U.S. large-blend funds that existed as of December 31, 2004 survived the entire ten-year period.
- ▶ Survivorship rates amongst the highest-cost quartile of actively-managed large-blend and large-growth funds were particularly poor. Nearly two-thirds of these funds did not survive over the trailing 10 years through December 2014.
- ▶ The lowest-cost actively-managed large-blend funds were about three times likelier to succeed (29.7% success rate) than their highest-cost peers (9.9% success). The average lowest-cost fund also generated 0.7% higher net-of-fee annualized returns than the average highest-cost fund (3.6% higher on an asset-weighted basis) and lagged the average lowest-cost passive alternative by a smaller margin (0.4% per year) than the highest-cost funds did versus the highest-cost passive, on average (0.6% per year; 1.1% per year compared to the lowest-cost passive alternative).
- ▶ Low-fee, large-value active managers fared far better than any other large-cap cohort: 66.3% of large-value active funds in the lowest-cost quartile outperformed their average passive peer over the past decade.
- ▶ Large-growth active managers had the worst showing. Just 16.9% of U.S. large-growth managers were able to best their passive counterparts over the trailing ten-year period, though the success rate improved to 28.9% when limited to the lowest-cost large-growth funds.

**Exhibit 2** U.S. Large-Blend

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		Active Success Rate (%)
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	
<b>Total Return</b>									
1-Year Trailing	395	97.97	126	98.41	10.80	13.07	10.72	12.36	32.66
3-Year Trailing	405	84.44	128	84.38	19.14	20.23	18.75	19.62	35.56
5-Year Trailing	287	83.28	114	86.84	13.73	15.39	13.57	14.81	25.09
10-Year Trailing	438	50.22	110	64.91	6.74	7.68	6.42	7.24	21.55
<b>Performance by Fee Quartile</b> (Trailing 10 Years)									
25th Percentile	109	55.96	30	80.00	6.54	7.30	7.29	7.67	29.73
50th Percentile	109	60.55	26	65.38	6.00	6.57	7.05	7.48	23.64
75th Percentile	109	51.38	26	69.23	4.09	6.38	6.93	7.40	20.91
100th Percentile	111	34.23	28	42.86	2.98	5.09	6.56	7.21	9.91

Source: Morningstar. Data and calculations as of 12/31/14.

**Exhibit 3** U.S. Large Value

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		Active Success Rate (%)
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	
<b>Total Return</b>									
1-Year Trailing	338	98.22	55	98.18	10.77	12.77	10.18	12.53	21.30
3-Year Trailing	341	86.51	46	86.96	19.20	18.92	18.32	18.50	48.97
5-Year Trailing	343	87.76	35	97.14	13.92	14.93	13.32	14.81	25.36
10-Year Trailing	343	59.89	15	64.71	6.76	7.31	6.24	6.52	38.16
<b>Performance by Fee Quartile</b> (Trailing 10 Years)									
25th Percentile	86	82.56	5	80.00	6.91	7.04	7.18	7.19	66.28
50th Percentile	86	59.30	3	66.67	5.52	7.09	6.60	6.96	31.40
75th Percentile	85	54.12	4	25.00	5.22	3.51	6.97	7.07	37.21
100th Percentile	86	44.19	3	66.67	2.90	2.78	6.29	4.74	18.60

Source: Morningstar. Data and calculations as of 12/31/14.

**Exhibit 4** U.S. Large Growth

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		Active Success Rate (%)
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	
<b>Total Return</b>									
1-Year Trailing	466	96.14	26	100.00	10.88	11.82	9.92	10.64	42.27
3-Year Trailing	493	85.60	50	80.00	20.66	21.93	19.29	20.63	25.96
5-Year Trailing	450	84.22	35	91.43	14.58	17.04	13.87	16.16	12.22
10-Year Trailing	562	52.22	25	76.92	8.05	9.27	7.12	8.27	16.89
<b>Performance by Fee Quartile</b> (Trailing 10 Years)									
25th Percentile	142	66.20	7	85.71	7.96	9.65	8.11	8.80	28.87
50th Percentile	140	56.43	6	66.67	5.37	7.96	7.52	9.16	12.77
75th Percentile	140	49.29	6	83.33	4.71	8.64	7.31	8.50	9.93
100th Percentile	140	37.14	6	66.67	4.14	8.81	7.61	7.61	14.18

Source: Morningstar. Data and calculations as of 12/31/14.

**U.S. Mid Caps**

- ▶ Active U.S. mid-blend managers fared worse than those in any other category we examined over the trailing 10 years. Just 13.7% of active managers in this category managed to survive and outperform their average passive peer over the past decade.
- ▶ Mid-value active managers' 54.4% 10-year success rate was higher than any other category. In fact, it was the only category in which active managers' 10-year success rate exceeded 50%.
- ▶ More than two-thirds of the lowest-cost actively-managed mid-cap value funds beat their passive peers over the trailing 10 years, the highest success rate of any cohort studied.
- ▶ Active mid-cap growth managers succeeded far more often (26.8%) than large-growth managers (16.9%), a gap that grew wider among the lowest-cost funds, where the corresponding figures for mid-growth and large-growth managers were 47.1% and 28.9%, respectively.

**Exhibit 5** U.S. Mid Blend

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		Active Success Rate (%)
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	
<b>Total Return</b>									
1-Year Trailing	115	96.52	50	96.00	9.24	10.32	7.62	9.46	36.52
3-Year Trailing	116	85.34	51	90.20	20.17	20.57	18.61	20.05	34.48
5-Year Trailing	105	84.76	37	94.59	15.33	16.63	14.26	16.19	23.81
10-Year Trailing	89	58.95	30	78.13	7.78	9.28	7.10	8.82	13.68
<b>Performance by Fee Quartile</b> (Trailing 10 Years)									
25th Percentile	23	65.22	8	87.50	7.31	9.35	8.17	9.45	21.74
50th Percentile	22	68.18	7	85.71	6.80	9.20	7.94	9.24	13.64
75th Percentile	22	59.09	7	100.00	5.17	9.10	7.73	8.88	13.64
100th Percentile	22	50.00	8	37.50	2.94	5.06	6.09	7.54	4.55

Source: Morningstar. Data and calculations as of 12/31/14.

**Exhibit 6** U.S. Mid Value

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		Active Success Rate (%)
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	
<b>Total Return</b>									
1-Year Trailing	110	99.09	20	95.00	9.38	14.18	9.23	12.51	20.91
3-Year Trailing	115	88.70	18	94.44	20.06	19.70	19.85	20.92	34.78
5-Year Trailing	104	88.46	14	100.00	15.18	16.83	15.00	16.66	13.46
10-Year Trailing	86	73.33	5	100.00	8.38	7.82	7.99	7.49	54.44
<b>Performance by Fee Quartile</b> (Trailing 10 Years)									
25th Percentile	22	81.82	3	66.67	8.44	9.06	8.67	9.21	68.18
50th Percentile	22	86.36	0	NA	7.59	NA	8.33	NA	63.64
75th Percentile	21	66.67	1	100.00	6.75	6.42	8.65	6.42	57.14
100th Percentile	21	61.90	1	100.00	4.81	6.91	7.02	6.91	27.27

Source: Morningstar. Data and calculations as of 12/31/14.

**Exhibit 7** U.S. Mid Growth

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		Active Success Rate (%)
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	
<b>Total Return</b>									
1-Year Trailing	223	97.76	20	95.00	7.67	10.07	7.01	7.34	47.98
3-Year Trailing	227	87.67	18	88.89	18.73	19.57	18.16	18.41	37.00
5-Year Trailing	209	86.60	14	100.00	15.10	16.52	14.63	15.65	31.10
10-Year Trailing	264	54.64	6	85.71	8.70	9.34	7.76	8.54	26.79
<b>Performance by Fee Quartile</b> (Trailing 10 Years)									
25th Percentile	68	64.71	3	66.67	8.57	9.44	9.21	9.53	47.06
50th Percentile	65	50.77	0	NA	5.52	NA	7.83	NA	13.43
75th Percentile	65	64.62	1	100.00	5.77	5.04	8.26	5.04	31.34
100th Percentile	66	40.91	2	100.00	5.90	8.95	7.80	8.68	13.43

Source: Morningstar. Data and calculations as of 12/31/14.

**U.S. Small Caps**

- ▶ Actively-managed small-cap funds were, on average, more successful than their large-cap counterparts of the same style over the past 10 years.
- ▶ The trailing 10-year success rates for active small-cap value, blend, and growth managers were 48%, 39%, and 24%, respectively.
- ▶ The equal-weighted performance of actively-managed small-blend and small-growth funds fell short of their passive peers. In the case of small value, the average active manager bested its average passive counterpart by just 3 basis points.
- ▶ In contrast to the other segments of the Morningstar Style Box, the lowest-cost quartile of active funds in the small-value and small-blend categories did not have the highest success ratios within their categories. (The second cheapest quartile held that honor.)
- ▶ Small blend funds had the third-highest survivorship rate (73.1%) amongst all categories, ranking behind mid value (73.3%), and diversified emerging markets (77.5%).

**Exhibit 8** U.S. Small Blend

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		Active Success Rate (%)
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	
<b>Total Return</b>									
1-Year Trailing	214	98.60	48	100.00	3.84	6.11	3.58	5.06	40.65
3-Year Trailing	203	91.63	44	90.91	17.73	19.98	17.51	19.22	35.47
5-Year Trailing	186	92.47	38	94.74	14.42	16.40	14.32	15.59	37.10
10-Year Trailing	164	73.14	29	73.33	7.63	8.52	6.93	7.72	38.86
<b>Performance by Fee Quartile</b> (Trailing 10 Years)									
25th Percentile	42	73.81	8	87.50	7.00	8.61	7.75	8.45	35.71
50th Percentile	40	80.00	7	71.43	6.36	7.52	7.79	8.21	42.50
75th Percentile	41	68.29	7	100.00	6.22	7.58	7.77	7.67	36.59
100th Percentile	41	63.41	7	28.57	5.43	0.95	6.89	7.58	34.15

Source: Morningstar. Data and calculations as of 12/31/14.

**Exhibit 9** U.S. Small Value

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		Active Success Rate (%)
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	
<b>Total Return</b>									
1-Year Trailing	115	99.13	18	100.00	3.43	8.18	3.35	5.79	25.22
3-Year Trailing	109	95.41	21	80.95	17.77	20.45	17.53	19.90	22.02
5-Year Trailing	88	97.73	13	100.00	14.35	15.73	13.95	14.84	47.73
10-Year Trailing	89	68.42	8	77.78	7.86	7.93	7.04	7.01	48.42
<b>Performance by Fee Quartile</b> (Trailing 10 Years)									
25th Percentile	23	60.87	4	75.00	7.14	7.69	7.55	7.84	52.17
50th Percentile	22	77.27	1	100.00	7.39	9.05	7.69	9.05	59.09
75th Percentile	21	71.43	2	50.00	6.10	4.95	6.63	6.34	40.91
100th Percentile	23	52.17	1	100.00	5.21	4.53	7.72	4.53	34.78

Source: Morningstar. Data and calculations as of 12/31/14.



**Exhibit 10** U.S. Small Growth

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		Active Success Rate (%)
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	
<b>Total Return</b>									
1-Year Trailing	222	97.75	13	100.00	3.34	4.32	2.51	2.63	51.35
3-Year Trailing	233	85.41	17	70.59	18.83	19.46	17.87	18.16	40.77
5-Year Trailing	215	86.05	9	100.00	15.84	17.00	15.00	16.06	30.23
10-Year Trailing	270	53.31	6	85.71	8.14	9.13	6.92	8.33	24.39
<b>Performance by Fee Quartile</b> (Trailing 10 Years)									
25th Percentile	68	64.71	2	50.00	8.16	9.05	8.27	9.48	33.82
50th Percentile	68	55.88	2	100.00	6.39	8.81	8.03	8.95	20.00
75th Percentile	67	50.75	1	100.00	5.27	10.13	7.89	10.13	25.37
100th Percentile	67	43.28	1	100.00	4.60	7.17	7.50	7.17	17.91

Source: Morningstar. Data and calculations as of 12/31/14.

**Foreign Large Blend**

- Over the past 10 years, 40.2% of actively managed funds in the Foreign Large Blend category survived and beat their average passive peer, a success rate nearly twice that of active U.S. large-blend funds. Within the cheapest quartile, that figure climbed to 58.5% (versus 29.7% for least expensive active U.S. large-blend funds).

**Exhibit 11** Foreign Large Blend

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		Active Success Rate (%)
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	
<b>Total Return</b>									
1-Year Trailing	183	95.08	46	97.83	-4.00	-4.67	-5.08	-5.03	46.99
3-Year Trailing	194	84.02	41	87.80	11.67	10.03	9.96	10.05	44.85
5-Year Trailing	176	83.52	32	87.50	5.85	4.82	4.73	4.65	52.84
10-Year Trailing	162	57.40	19	81.82	5.48	4.32	4.00	3.79	40.24
<b>Performance by Fee Quartile</b> (Trailing 10 Years)									
25th Percentile	41	63.41	5	80.00	4.97	4.33	5.08	4.37	58.54
50th Percentile	40	70.00	5	80.00	3.83	4.11	4.33	4.28	42.50
75th Percentile	40	35.00	4	100.00	2.78	4.15	4.31	3.94	20.00
100th Percentile	41	58.54	5	100.00	2.89	2.44	4.65	3.29	34.15

Source: Morningstar. Data and calculations as of 12/31/14.

### Diversified Emerging Markets

- ▶ Emerging markets don't appear to be especially easy hunting grounds for active managers. Over the past 10 years, just 36.6% of actively-managed diversified emerging-markets funds managed to survive and outperform their average passive peer, though a slightly higher 47.3% of the lowest-cost active funds succeeded.
- ▶ However, investors are picking better-than-average funds in this category. This is evidenced by the gap between the asset-weighted and equal-weighted performance of active funds in this group—which was nearly 100 basis points over the past decade.

**Exhibit 12** Diversified Emerging Markets

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		Active Success Rate (%)
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	
<b>Total Return</b>									
1-Year Trailing	196	98.47	59	91.53	-2.82	-1.29	-3.05	-3.63	58.16
3-Year Trailing	159	89.31	40	77.50	5.43	3.74	4.57	2.47	70.44
5-Year Trailing	114	88.60	18	94.44	2.92	1.25	1.69	0.59	65.79
10-Year Trailing	69	77.46	3	100.00	8.32	7.70	7.33	7.97	36.62
<b>Performance by Fee Quartile</b> (Trailing 10 Years)									
25th Percentile	19	78.95	1	100.00	7.38	7.92	8.26	7.92	47.37
50th Percentile	15	93.33	1	100.00	8.40	8.02	8.30	8.02	43.75
75th Percentile	17	76.47	0	NA	6.22	NA	7.15	NA	29.41
100th Percentile	18	61.11	1	100.00	5.29	7.70	7.25	7.70	22.22

Source: Morningstar. Data and calculations as of 12/31/14.

### Intermediate Term Bond

- ▶ The intermediate-term bond category is a bright spot for active managers.
- ▶ Over the past decade 42% of actively-managed funds in the category beat the equal-weighted average performance of passive funds in the category.
- ▶ Over the trailing 3- and 5-year periods, a solid majority of actively-managed funds have beaten their passive peers.

**Exhibit 13** Intermediate Term Bond

	Active Funds		Passive Funds		Asset-Weighted Performance		Equal-Weighted Performance		Active Success Rate (%)
	# at Beginning of Period	Survivorship Rate (%)	# at Beginning of Period	Survivorship Rate (%)	Active (%)	Passive (%)	Active (%)	Passive (%)	
<b>Total Return</b>									
1-Year Trailing	265	97.74	28	100.00	5.31	5.87	5.15	5.58	47.92
3-Year Trailing	274	86.13	29	93.10	4.02	2.54	3.36	2.30	72.99
5-Year Trailing	287	85.43	28	86.84	5.10	4.38	4.64	4.10	69.69
10-Year Trailing	321	54.68	22	68.18	4.96	4.56	4.04	4.16	42.40
<b>Performance by Fee Quartile</b>									
(Trailing 10 Years)									
25th Percentile	79	60.76	6	83.33	3.82	4.61	5.03	4.77	54.88
50th Percentile	80	56.25	5	60.00	4.80	4.28	4.66	4.36	41.98
75th Percentile	80	56.25	5	40.00	3.06	3.12	4.56	4.41	41.98
100th Percentile	82	48.78	6	83.33	2.80	2.63	4.42	3.61	30.49

Source: Morningstar. Data and calculations 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 fund-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 1-, 3-, 5-, 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 1-, 3-, 5-, 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 to others'**

### **How is our approach different from others'?**

- ▶ Our "benchmark" for measuring success is different than 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 (e.g. Vanguard Total Stock Market Index Fund VTSMX, SPDR S&P 500 ETF SPY, etc.). Specifically, we calculate the equal- and asset-weighted performance of the cohort of index-tracking (i.e. "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 amongst 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, etc.) 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 the 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. Non-surviving funds' returns are also included in our return calculations for the periods when they were around.