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# Morningstar's U.S. Active/Passive Barometer

## Midyear 2023

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### Executive Summary

The Morningstar Active/Passive Barometer is a semiannual report that measures the performance of active funds against passive peers in their respective Morningstar Categories. The U.S. Active/Passive Barometer spans nearly 8,212 unique funds that accounted for approximately \$17 trillion in assets, or about 55.9% of the U.S. fund market, at 2023's midpoint.

The Active/Passive Barometer measures active managers' success in several unique ways:

- ▶ It evaluates active funds against a composite of passive funds. In this way, the "benchmark" reflects the actual, net-of-fees performance of investable passive funds.
- ▶ It considers how the average dollar invested in active funds has fared versus the average dollar invested in passive funds.
- ▶ It examines trends in active-fund success by fee level.
- ▶ It shows the distribution of surviving active funds' excess returns versus their average passive peer to help investors understand not just the odds of picking a successful manager but also the prospective payout or penalty.

The Active/Passive Barometer is a useful measuring stick that helps investors calibrate the odds of succeeding with active funds in different categories.

### Key Takeaways

- ▶ Actively managed mutual funds and exchange-traded funds roared back to life in the first half of 2023. Fifty-seven percent of active strategies survived and beat their average passive counterpart over the 12 months through June 2023, well above their 43% success rate in calendar-year 2022.
- ▶ U.S. stock-pickers notched a 57% success rate over the 12 months through June, up from 48% in 2022. Over 65% of active small-cap managers beat their average passive peer. Active mid-cap (56%) and large-cap managers (53%) measured up well, too.
- ▶ Active strategies that invest in stocks outside the United States saw the starkest turnaround. More than 63% of them beat their average passive peer, a startling increase of 30 percentage points over calendar-year 2022. Active funds in all six foreign-equity Morningstar Categories maintained or improved their success rate, led by active foreign large-value managers' gaudy 75% clip — a 48-percentage-point boost from 2022.
- ▶ More than 55% of active bond managers survived and beat the passive average, a feat only 30% of them managed in 2022. All three fixed-income Morningstar Categories we examined boosted their active success rates by at least 15 percentage points. Active corporate-bond managers led the cohort, with a 60% success rate, up from 34% in 2022.
- ▶ Active real estate strategies' 67% success rate doubled their calendar-year 2022 figure, returning to a level more congruent with their relatively solid long-term results.
- ▶ Actively managed funds' recent surge did little to change their long-term track record against their passive peers. Just one out of every four active strategies survived and beat their average passive counterpart over the 10 years through June 2023. Long-term success rates were generally higher among foreign-stock, real estate, and bond funds and lowest among U.S. large-cap strategies.
- ▶ The distribution of 10-year excess returns for surviving active funds versus the average of their passive peers varies widely across categories. In the case of U.S. large-cap funds, it skews negative, indicating that the likelihood and performance penalty for picking an underperforming manager tends to be greater than the probability and reward for finding a winner. The inverse tends to be true of the fixed-income and certain foreign-stock categories we examined, where excess returns among surviving active managers skewed positive over the past decade.
- ▶ Investors have chosen active funds wisely. Over the past 10 years, the average dollar invested in active funds outperformed the average active fund in 19 of the 20 categories examined. That implies investors favor cheaper, higher-quality strategies.
- ▶ The cheapest active funds succeeded more often than the priciest ones. Over the 10 years through June 2023, nearly 31% of active funds in the cheapest quintile beat their average passive peer, compared with 19% for those in the priciest quintile.

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

Category	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year	10-Year (Lowest Cost) *	10-Year (Highest Cost)
U.S. Large Blend	50.4	41.1	29.5	9.8	9.3	9.1	16.2	5.6
U.S. Large Value	54.2	39.7	29.5	12.0	5.5	16.1	15.0	8.5
U.S. Large Growth	54.5	32.4	30.8	10.1	2.1	4.9	16.3	6.8
U.S. Mid Blend	48.7	56.9	37.2	14.0	16.7	8.7	27.3	3.8
U.S. Mid Value	64.1	40.7	42.9	9.4	11.7	16.2	5.0	9.1
U.S. Mid Growth	56.1	36.8	63.0	46.1	27.3	—	46.3	35.7
U.S. Small Blend	74.7	57.3	43.3	28.3	19.5	23.4	45.9	27.5
U.S. Small Value	57.3	32.8	39.8	33.0	21.9	23.6	28.6	23.8
U.S. Small Growth	62.3	32.4	57.4	45.8	27.9	19.3	47.2	46.3
Foreign Large Blend	57.6	45.6	33.1	26.0	23.9	17.6	40.6	22.2
Foreign Large Value	75.0	37.5	28.7	38.3	23.7	—	47.1	25.0
Foreign Small-Mid Blend	66.7	27.6	25.8	31.8	53.8	—	40.0	40.0
World Large-Blend	44.1	36.2	24.1	10.0	11.4	—	8.3	8.3
Diversified Emerging Markets	57.1	32.1	36.5	35.2	25.6	—	45.5	27.3
Europe Stock	31.3	31.3	30.4	23.8	40.9	19.6	25.0	40.0
U.S. Real Estate	54.8	38.3	63.1	52.9	30.3	24.1	50.0	42.9
Global Real Estate	84.1	78.4	64.3	51.9	33.3	—	36.4	45.5
Intermediate Core Bond	60.0	65.8	33.9	36.7	22.0	13.1	48.1	20.0
Corporate Bond	40.0	24.5	17.3	41.5	53.6	—	33.3	44.4
High-Yield Bond	56.4	45.2	45.6	28.3	—	—	46.4	6.5

Source: Morningstar. Data and calculations as of June 30, 2023. \*Green/red shading indicates that active funds in this fee quintile had above/below-average success rates.

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

	2023	2022	Year-Over-Year Change
U.S. Large Blend	50.4	45.3	5.1
U.S. Large Value	54.2	33.9	20.3
U.S. Large Growth	54.5	39.0	15.5
U.S. Mid Blend	48.7	67.3	-18.6
U.S. Mid Value	64.1	29.6	34.4
U.S. Mid Growth	56.1	49.7	6.4
U.S. Small Blend	74.7	59.4	15.3
U.S. Small Value	57.3	64.7	-7.5
U.S. Small Growth	62.3	43.3	19.0
Foreign Large Blend	57.6	27.7	29.9
Foreign Large Value	75.0	26.7	48.3
Foreign Small-Mid Blend	66.7	25.9	40.7
World Large-Blend	44.1	35.7	8.4
Diversified Emerging Markets	57.1	18.6	38.5
Europe Stock	31.3	31.3	0.0
U.S. Real Estate	54.8	73.2	-18.4
Global Real Estate	84.1	85.1	-1.0
Intermediate Core Bond	60.0	34.1	25.9
Corporate Bond	40.0	25.0	15.0
High-Yield Bond	56.4	32.6	23.8

Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 3** Trends in Active Funds' One-Year Success Rates by Category (%)

	2016		2017		2018		2019		2020		2021		2022		2023		Trend
	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun	Dec	Jun			
U.S. Large Blend	21.8	39.5	35.8	34.9	27.3	30.3	37.7	39.1	34.3	43.9	39.8	45.3	53.0	50.4			
U.S. Large Value	18.4	53.1	34.1	32.2	27.5	32.2	36.8	42.7	51.3	47.5	36.5	33.9	46.9	54.2			
U.S. Large Growth	26.0	32.6	44.8	42.6	48.3	51.1	42.0	46.2	41.1	37.1	31.8	39.0	36.8	54.5			
U.S. Mid-Blend	17.6	31.8	30.8	22.2	31.9	47.1	57.5	33.0	25.2	42.2	66.0	67.3	50.0	48.7			
U.S. Mid-Value	18.3	56.3	49.6	37.7	20.7	25.9	59.5	69.4	77.5	38.9	31.1	29.6	39.3	64.1			
U.S. Mid-Growth	28.0	46.3	52.3	42.2	74.6	78.6	74.7	61.6	41.5	19.2	44.3	49.7	45.9	56.1			
U.S. Small Blend	31.6	25.2	41.4	19.9	22.3	42.0	46.6	29.0	36.6	41.0	59.5	59.4	52.3	74.7			
U.S. Small Value	13.5	57.8	55.5	27.0	20.3	41.9	45.4	40.9	46.6	23.8	37.1	64.7	60.0	57.3			
U.S. Small Growth	26.0	51.1	57.7	42.2	50.5	74.3	75.0	68.7	71.9	40.8	47.4	43.3	54.6	62.3			
Foreign Large Blend	26.2	38.9	55.7	30.6	18.1	28.6	57.5	55.4	60.8	58.8	44.0	27.7	35.8	57.6			
Foreign Large Value	17.7	50.9	69.2	38.1	14.0	10.3	34.5	66.3	82.2	52.3	24.5	26.7	28.1	75.0			
Foreign Small-Mid Blend	24.1	35.3	52.9	26.7	21.2	34.4	50.0	33.3	51.6	51.7	48.1	25.9	44.0	66.7			
World Large-Blend	23.1	46.2	45.9	38.4	31.2	37.5	45.1	25.6	33.7	55.3	40.2	35.7	54.4	44.1			
Diversified Emg Mrkts	23.0	48.4	63.1	47.6	19.5	33.8	67.1	63.3	68.8	65.6	32.1	18.6	22.2	57.1			
Europe Stock	16.0	20.0	52.2	29.2	24.0	20.8	50.0	77.8	76.5	62.5	46.7	31.3	25.0	31.3			
U.S. Real Estate	3.7	12.0	30.0	36.4	20.6	64.6	82.0	85.7	80.6	11.7	82.5	73.2	42.9	54.8			
Global Real Estate	45.3	14.9	15.6	23.7	63.8	76.4	66.1	72.7	69.1	64.7	83.3	85.1	19.6	84.1			
Intermediate Core Bond	51.4	67.6	50.8	57.7	44.9	20.9	35.7	32.1	55.1	86.0	69.3	34.1	36.6	60.0			
Corporate Bond	62.5	53.1	71.7	21.7	25.5	15.1	28.1	56.9	66.0	67.3	68.1	25.0	22.9	40.0			
High-Yield Bond	43.5	62.3	74.5	39.9	23.2	38.8	60.2	55.3	63.2	70.7	73.0	32.6	27.5	56.4			

Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 4** Comparison of Asset- and Equal-Weighted 10-Year Returns %

Category	Active Funds			Passive Funds			Difference Between Passive and Active Returns	
	Asset- Weighted	Equal- Weighted	Difference	Asset- Weighted	Equal- Weighted	Difference	Asset- Weighted	Equal- Weighted
U.S. Large Blend	11.1	10.4	0.7	12.6	12.1	0.5	1.4	1.7
U.S. Large Value	9.7	8.8	0.9	10.0	9.9	0.1	0.3	1.1
U.S. Large Growth	13.3	12.4	0.9	16.0	14.3	1.7	2.7	1.9
U.S. Mid Blend	9.4	8.3	1.1	9.9	9.6	0.3	0.5	1.3
U.S. Mid Value	8.8	8.1	0.7	9.4	9.7	-0.3	0.5	1.6
U.S. Mid Growth	10.7	10.5	0.2	10.6	10.0	0.7	-0.1	-0.5
U.S. Small Blend	8.1	7.8	0.3	9.0	8.6	0.4	0.9	0.7
U.S. Small Value	8.1	7.3	0.8	8.6	7.8	0.8	0.5	0.5
U.S. Small Growth	9.8	9.4	0.4	9.1	8.8	0.3	-0.7	-0.6
Foreign Large Blend	5.4	4.8	0.5	5.3	5.2	0.0	-0.1	0.4
Foreign Large Value	5.3	4.4	0.9	4.0	4.1	-0.1	-1.3	-0.3
Foreign Small-Mid Blend	5.2	4.9	0.3	5.5	5.5	0.0	0.3	0.7
World Large-Blend	8.1	8.1	0.1	8.8	9.3	-0.5	0.6	1.2
Diversified Emerging Markets	3.3	2.6	0.6	2.8	2.5	0.3	-0.4	-0.1
Europe Stock	4.7	5.5	-0.8	6.2	5.7	0.5	1.5	0.1
U.S. Real Estate	6.5	5.9	0.6	5.9	5.1	0.8	-0.6	-0.8
Global Real Estate	3.3	2.9	0.4	1.3	1.9	-0.5	-2.0	-1.1
Intermediate Core Bond	1.7	1.4	0.4	1.5	1.2	0.2	-0.3	-0.1
Corporate Bond	2.8	2.5	0.3	2.6	2.3	0.3	-0.2	-0.1
High-Yield Bond	3.9	3.4	0.6	3.3	3.7	-0.4	-0.6	0.4

Source: Morningstar. Data and calculations as of June 30, 2023.

## Results by Category

### U.S. Large-Cap Funds

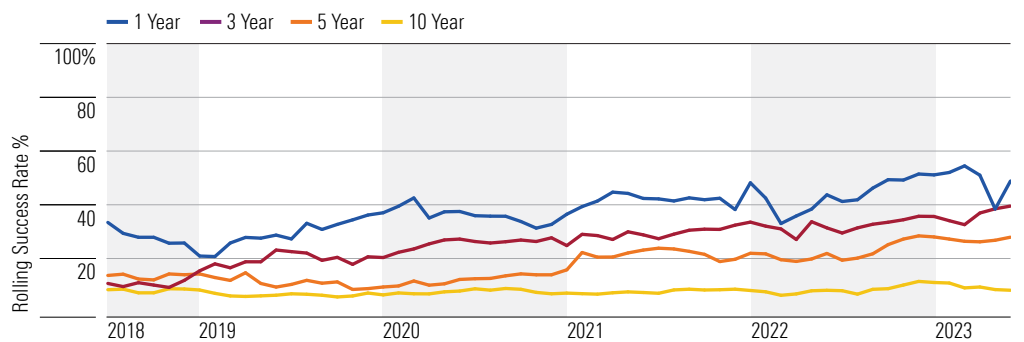
- ▶ The U.S. large-cap equity market has been a difficult place for active funds to succeed in the long run. Just 10.5% of them survived and beat their average passive rival over the decade through June 2023. That fell well short of the success rates of 28.4% and 36.4% for active mid- and small-cap managers, respectively.
- ▶ Active managers in the large-growth category have had a particularly difficult time delivering value for investors. Of the active funds that existed in this category two decades ago, over 70.6% have died and just 4.9% managed to outperform their average indexed peer.
- ▶ The scales have tipped toward active managers more recently, though. U.S. large-cap stock funds' 53% one-year success rate through June 2023 marked a 13-percentage-point increase from the period ended June 30, 2022. More than half of active funds succeeded in the large-blend, large-growth, and large-value Morningstar Categories.
- ▶ Active large-value managers posted a 54.2% one-year success rate, up from 33.9% at the 2022 midpoint. Dividend index strategies, which constitute a large chunk of the passive large-value composite, likely lowered the hurdle that active funds had to clear. These funds struggled in 2023's first half after shining in the challenging 2022 market.
- ▶ Expensive active large-cap funds must overcome long odds to succeed: Just 6.8% of them beat a composite of their active peers over the decade through June 2023, compared with 15.9% of cheaper active large-cap strategies. Investors mostly favor cheaper, better-performing active large-cap funds: The average asset-weighted active return exceeded the average equal-weighted active return across all large-cap categories and time periods, save for large-value funds over the trailing 12 months.
- ▶ Over the decade through June 2023, passive large-growth funds beat their active peers by 2.7 percentage points annualized on an asset-weighted basis—the widest performance margin across all Morningstar Categories. Passive large-blend funds posted a 1.4-percentage-point annual advantage over the same span.
- ▶ The median 10-year excess return for surviving active funds was negative across all three U.S. large-cap categories, and the distributions of excess returns for the blend and value categories had a negative skew. This indicates that the penalty for poor manager selection tended to be greater than the reward for choosing a winner.

**Exhibit 5 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>Trailing Total Return</b>									
1-Year	377	95.5	206	95.1	17.9	19.1	16.7	17.3	50.4
3-Year	353	85.0	197	89.3	14.0	14.1	13.3	13.7	41.1
5-Year	349	78.2	168	85.7	10.6	11.8	10.0	11.1	29.5
10-Year	358	64.8	105	82.9	11.1	12.6	10.4	12.1	9.8
15-Year	463	43.6	121	60.3	9.1	10.6	8.8	10.4	9.3
20-Year	428	33.2	103	41.7	9.4	9.9	8.7	9.7	9.1
<b>Performance by Fee Quintile</b> (Trailing 10 Years)									
20th Percentile	68	66.2	21	90.5	11.6	12.6	11.2	12.6	16.2
40th Percentile	73	75.3	20	95.0	11.2	12.3	10.9	12.5	13.7
60th Percentile	71	66.2	22	77.3	10.5	12.1	10.1	12.2	4.2
80th Percentile	72	62.5	18	88.9	11.1	12.5	10.7	12.3	9.7
100th Percentile	72	55.6	24	66.7	10.0	11.5	9.2	11.0	5.6

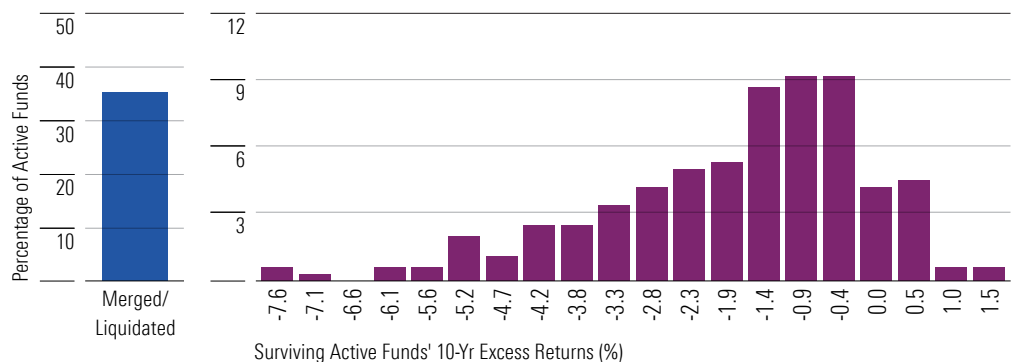
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 6 Rolling Success Rates for Surviving Active U.S. Large-Blend Funds**



Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 7 Mortality and Distribution of 10-Year Annualized Excess Returns for Surviving Active Large-Blend Funds**



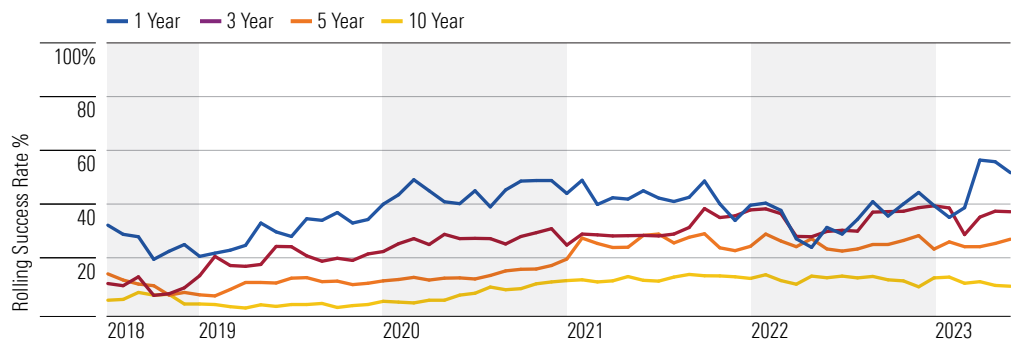
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 8 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>Trailing Total Return</b>									
1-Year	321	97.2	105	95.2	11.1	10.0	11.2	10.3	54.2
3-Year	312	85.6	103	90.3	14.7	14.5	14.4	14.7	39.7
5-Year	325	75.4	90	85.6	8.9	8.8	7.9	8.4	29.5
10-Year	299	64.9	42	95.2	9.7	10.0	8.8	9.9	12.0
15-Year	348	46.6	29	89.7	8.7	9.1	7.9	9.4	5.5
20-Year	311	36.0	14	50.0	8.6	8.7	7.9	8.3	16.1
<b>Performance by Fee Quintile</b> (Trailing 10 Years)									
20th Percentile	60	48.3	9	100.0	10.1	10.3	9.6	10.2	15.0
40th Percentile	60	76.7	6	83.3	9.8	9.3	9.0	9.9	15.0
60th Percentile	60	65.0	9	100.0	9.5	10.4	9.0	10.2	10.0
80th Percentile	60	80.0	9	100.0	8.7	9.0	8.6	9.5	11.7
100th Percentile	59	54.2	9	88.9	8.3	9.3	8.0	9.6	8.5

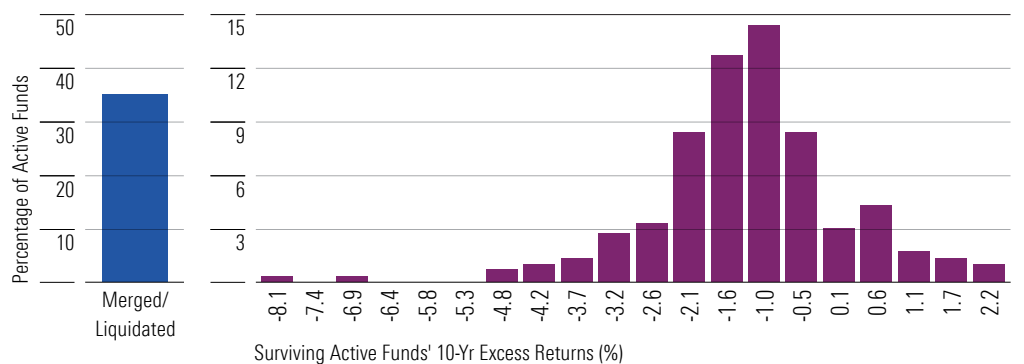
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 9 Rolling Success Rates for Surviving Active U.S. Large-Value Funds**



Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 10 Mortality and Distribution of 10-Year Annualized Excess Returns for Surviving Active Large-Value Funds**



Source: Morningstar. Data and calculations as of June 30, 2023.

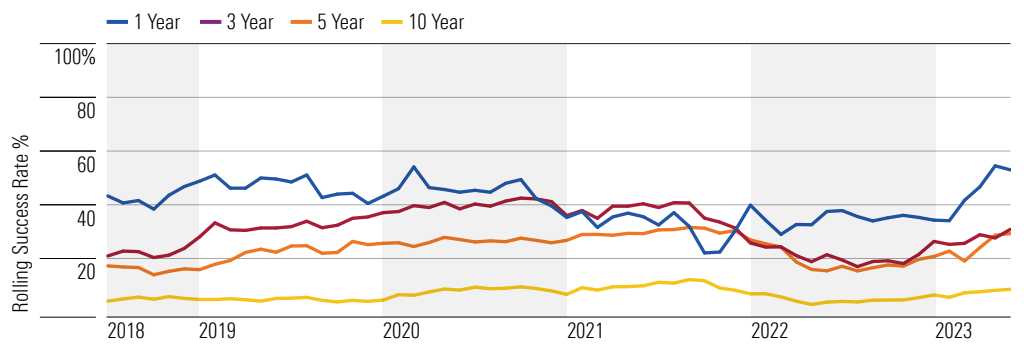


**Exhibit 11** U.S. Large Growth

	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>Trailing Total Return</b>									
1-Year	363	95.0	78	96.2	24.6	27.4	22.8	21.9	54.5
3-Year	364	89.6	66	95.5	9.5	13.2	9.4	11.5	32.4
5-Year	389	82.0	64	87.5	11.1	14.8	11.1	12.0	30.8
10-Year	437	63.4	40	97.5	13.3	16.0	12.4	14.3	10.1
15-Year	472	42.6	29	82.8	10.6	13.5	10.1	12.5	2.1
20-Year	449	29.4	20	80.0	10.2	12.2	9.5	10.9	4.9
<b>Performance by Fee Quintile</b> (Trailing 10 Years)									
20th Percentile	86	57.0	8	100.0	14.2	14.9	13.4	14.9	16.3
40th Percentile	87	71.3	7	100.0	12.6	17.4	12.7	15.9	6.9
60th Percentile	86	66.3	9	100.0	13.2	14.8	12.7	14.4	8.1
80th Percentile	88	60.2	8	100.0	13.2	15.4	12.5	14.7	13.6
100th Percentile	88	61.4	8	87.5	12.0	13.4	10.9	11.4	6.8

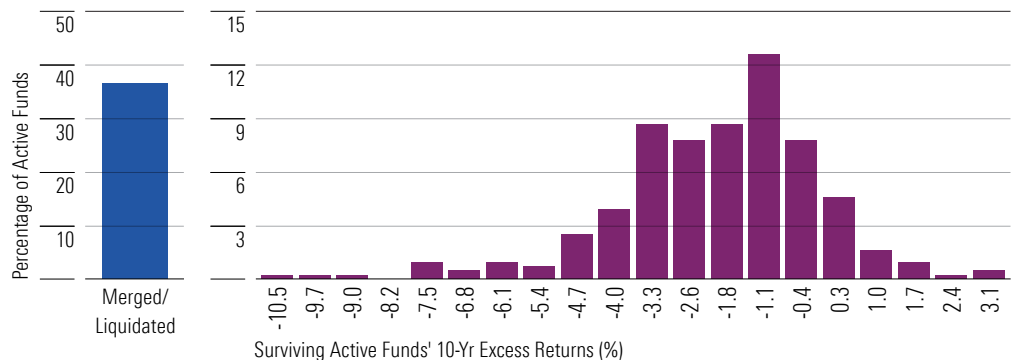
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 12** Rolling Success Rates for Surviving Active U.S. Large-Growth Funds



Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 13** Mortality and Distribution of 10-Year Annualized Excess Returns for Surviving Active Large-Growth Funds



Source: Morningstar. Data and calculations as of June 30, 2023.

### U.S. Mid-Cap Funds

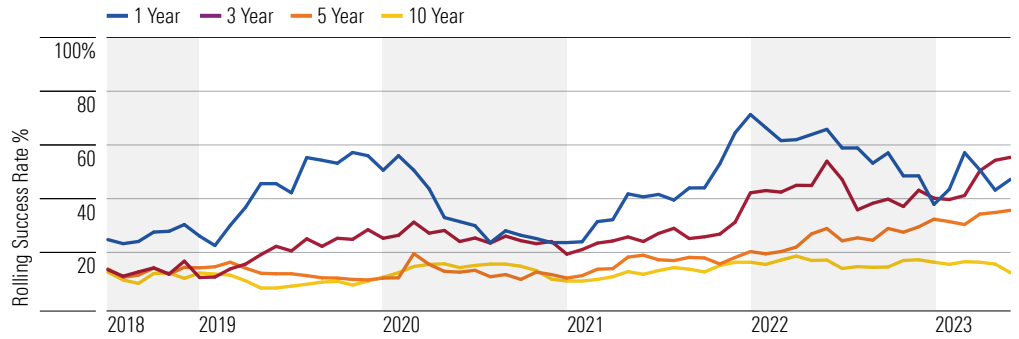
- ▶ Fifty-six percent of active mid-cap funds survived and outpaced the average passive peer over the 12 months through June, an uptick from 48.8% one year earlier.
- ▶ While the headline active mid-cap success rate increased, active strategies in the mid-cap blend category saw theirs dip to 48.7% from 67.3% in June 2022. That represented the largest year-over-year drop among the 20 Morningstar Categories we surveyed.
- ▶ The one-year success rate for active mid-cap value funds plummeted from the 12 months through June 2020 (69.4% success rate) to June 2022 (29.6%), only to return to 64.1% in June 2023. Mid-cap category success rates have been whipsawed by oscillating performance between value and growth and large- and small-cap companies. Success rates for active mid-cap strategies tend to be more volatile than large- or small-cap categories, and that has unfolded over the past three years.
- ▶ 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 (those that bleed into other market-cap segments and styles) or could otherwise be passersby as they migrate “south” from large-cap territory or “north” from the small-cap space, for example.

#### Exhibit 14 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>Trailing Total Return</b>									
1-Year	115	97.4	72	94.4	13.7	15.1	13.9	14.2	48.7
3-Year	102	88.2	65	84.6	13.7	12.0	14.0	13.4	56.9
5-Year	121	71.1	61	77.0	7.9	7.5	6.6	7.1	37.2
10-Year	114	61.4	43	79.1	9.4	9.9	8.3	9.6	14.0
15-Year	138	50.0	36	69.4	8.9	9.5	8.0	9.2	16.7
20-Year	115	44.3	25	56.0	9.2	10.2	8.6	9.9	8.7
<b>Performance by Fee Quintile</b>									
(Trailing 10 Years)									
20th Percentile	22	72.7	9	88.9	9.9	9.9	9.3	9.9	27.3
40th Percentile	23	65.2	8	87.5	9.1	10.0	9.8	10.1	26.1
60th Percentile	22	50.0	9	88.9	7.6	9.6	7.8	10.0	4.5
80th Percentile	21	71.4	5	80.0	8.5	9.6	8.2	9.5	14.3
100th Percentile	26	50.0	12	58.3	6.6	9.4	6.6	8.7	3.8

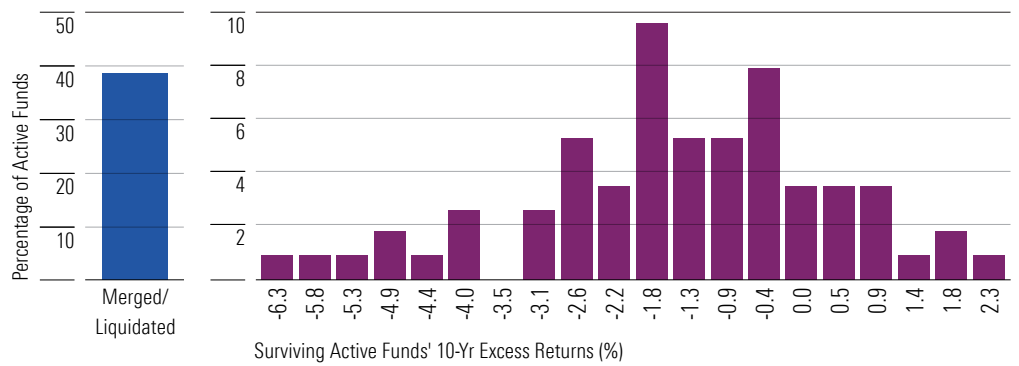
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 15** Rolling Success Rates for Surviving Active U.S. Mid-Blend Funds



Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 16** Mortality and Distribution of 10-Year Annualized Excess Returns for Surviving Active Mid-Blend Funds



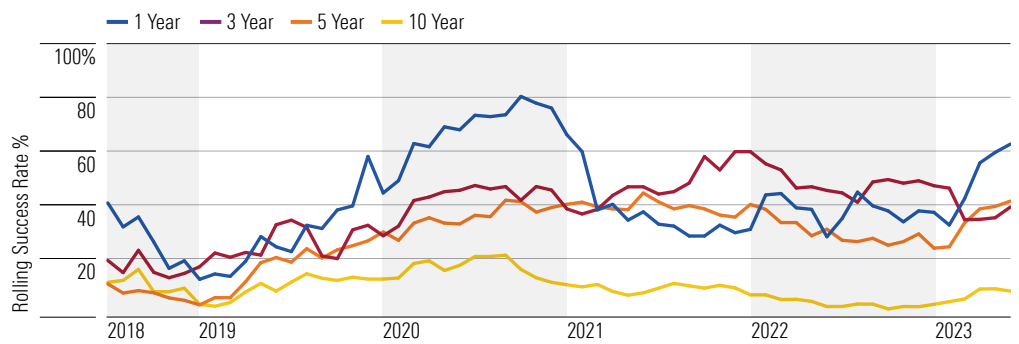
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 17 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>Trailing Total Return</b>									
1-Year	103	96.1	36	94.4	13.5	11.0	12.2	10.9	64.1
3-Year	108	86.1	29	89.7	17.0	15.9	17.0	16.9	40.7
5-Year	112	75.0	24	91.7	7.9	6.7	7.2	6.8	42.9
10-Year	106	61.3	19	94.7	8.8	9.4	8.1	9.7	9.4
15-Year	120	45.8	15	80.0	8.5	9.1	8.2	9.5	11.7
20-Year	111	55.0	3	100.0	8.4	9.9	8.4	9.3	16.2
<b>Performance by Fee Quintile</b> (Trailing 10 Years)									
20th Percentile	20	65.0	2	100.0	8.9	9.6	8.3	9.7	5.0
40th Percentile	21	42.9	6	100.0	9.3	9.2	8.0	10.1	14.3
60th Percentile	21	71.4	3	100.0	9.3	9.5	8.1	9.9	9.5
80th Percentile	21	71.4	4	75.0	7.7	10.1	8.2	10.5	9.5
100th Percentile	22	59.1	4	100.0	8.2	8.1	8.0	8.0	9.1

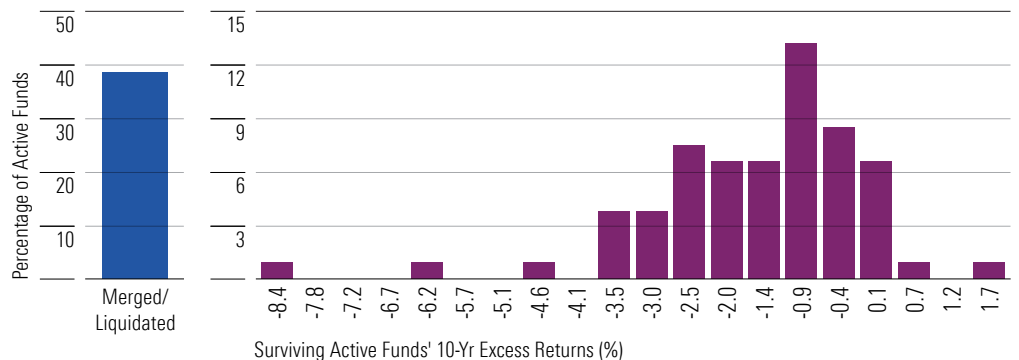
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 18 Rolling Success Rates for Surviving Active U.S. Mid-Value Funds**



Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 19 Mortality and Distribution of 10-Year Annualized Excess Returns for Surviving Active Mid-Value Funds**



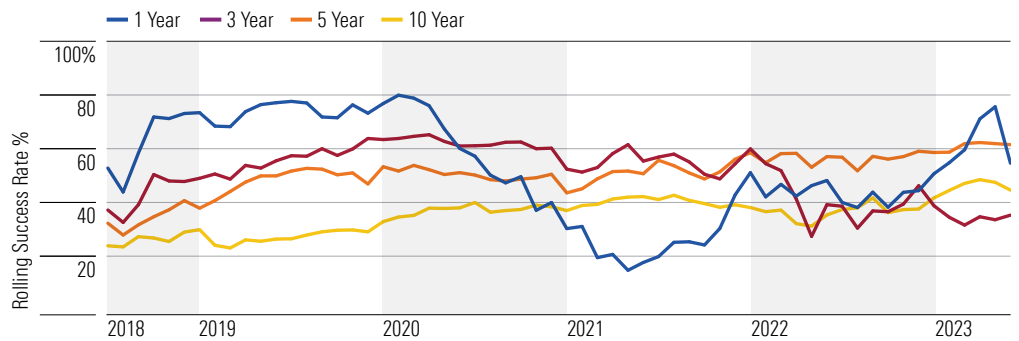
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 20** 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>Trailing Total Return</b>									
1-Year	155	96.8	37	91.9	17.5	16.4	17.4	16.8	56.1
3-Year	171	89.5	30	100.0	6.9	8.3	8.1	8.9	36.8
5-Year	173	82.1	30	83.3	8.7	8.4	8.9	7.2	63.0
10-Year	206	68.4	19	73.7	10.7	10.6	10.5	10.0	46.1
15-Year	275	44.0	14	71.4	9.1	9.6	8.7	8.8	27.3
<b>Performance by Fee Quintile</b> (Trailing 10 Years)									
20th Percentile	41	65.9	2	100.0	11.0	10.9	10.6	10.5	46.3
40th Percentile	41	75.6	6	100.0	10.8	10.5	10.4	10.6	56.1
60th Percentile	41	73.2	3	0.0	11.5	8.5	11.4	8.4	61.0
80th Percentile	41	61.0	4	100.0	10.0	10.5	9.9	10.9	31.7
100th Percentile	42	66.7	4	50.0	10.8	5.9	10.0	6.4	35.7

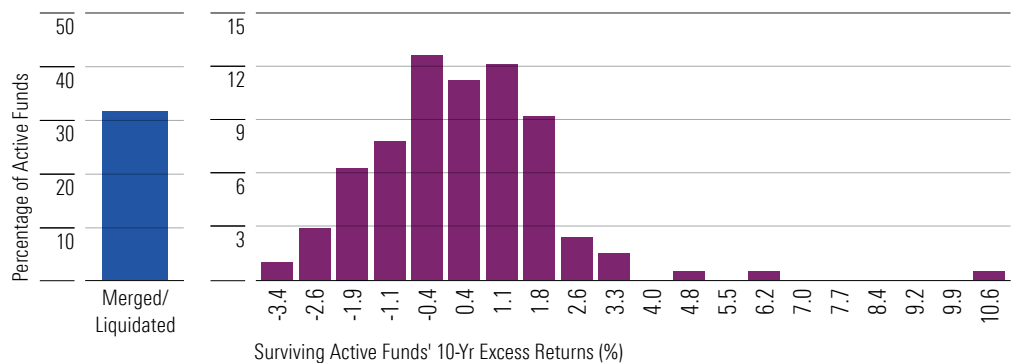
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 21** Rolling Success Rates for Surviving Active U.S. Mid-Growth Funds



Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 22** Mortality and Distribution of 10-Year Annualized Excess Returns for Surviving Active Mid-Growth Funds



Source: Morningstar. Data and calculations as of June 30, 2023.

### U.S. Small-Cap Funds

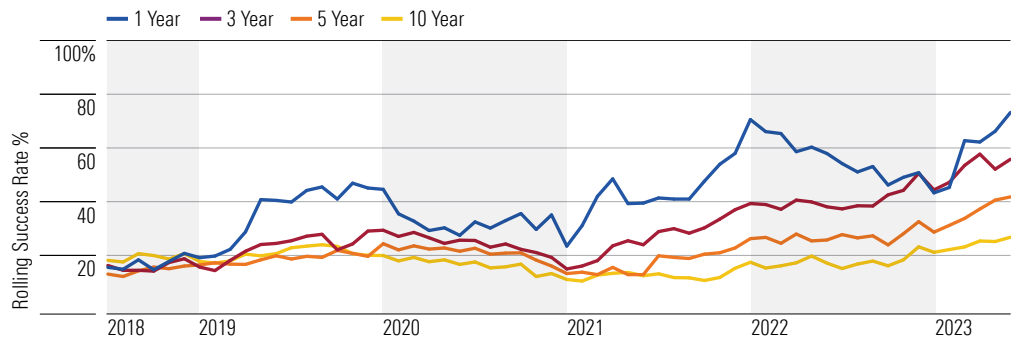
- ▶ More than 65% of active small-cap strategies survived and outpaced their average passive rival from July 2022 through June 2023, a better clip than active mid-cap (56%) or large-cap funds (53%).
- ▶ Long-term active success rates have generally been higher in the small-cap arena than those among large-cap funds. That may be because the small-cap market is relatively less liquid and efficiently priced.
- ▶ Small-growth territory has been relatively kind to active managers. Their 27.9% success rate there over the past 15 years is highest among all U.S. stock categories, and the long right tail in their excess returns distribution indicates that success can sometimes mean winning big.

**Exhibit 23** 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>Trailing Total Return</b>									
1-Year	170	97.6	70	91.4	13.2	12.5	13.0	10.5	74.7
3-Year	178	87.1	67	86.6	14.9	12.7	14.8	13.3	57.3
5-Year	215	72.1	63	84.1	5.7	5.4	5.1	4.9	43.3
10-Year	191	66.0	42	76.2	8.1	9.0	7.8	8.6	28.3
15-Year	185	51.4	42	61.9	8.1	9.1	7.9	8.6	19.5
20-Year	124	50.8	23	52.2	9.4	9.6	8.5	9.0	23.4
<b>Performance by Fee Quintile</b>									
(Trailing 10 Years)									
20th Percentile	37	78.4	8	100.0	8.9	9.3	8.5	8.8	45.9
40th Percentile	38	71.1	9	77.8	7.7	8.3	8.0	8.6	21.1
60th Percentile	38	63.2	8	62.5	7.7	9.1	7.8	8.5	28.9
80th Percentile	37	59.5	8	75.0	7.5	8.5	7.4	9.0	18.9
100th Percentile	40	62.5	9	66.7	7.5	8.1	7.4	7.6	27.5

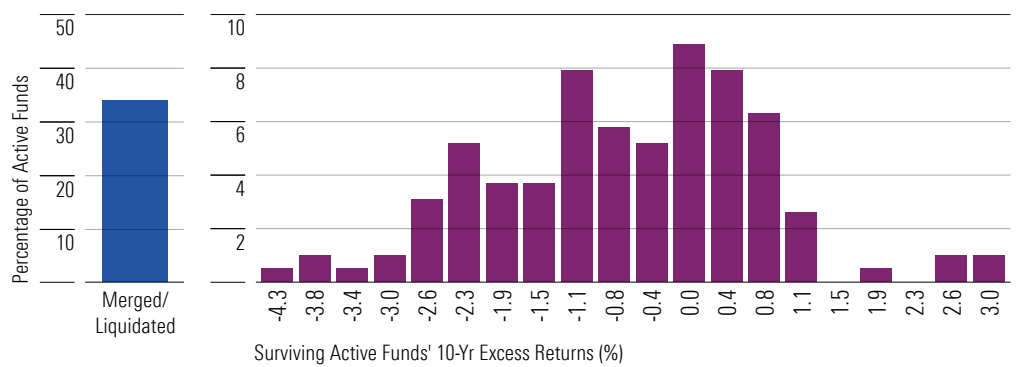
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 24** Rolling Success Rates for Surviving Active U.S. Small-Blend Funds



Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 25** Mortality and Distribution of 10-Year Annualized Excess Returns for Surviving Active Small-Blend Funds



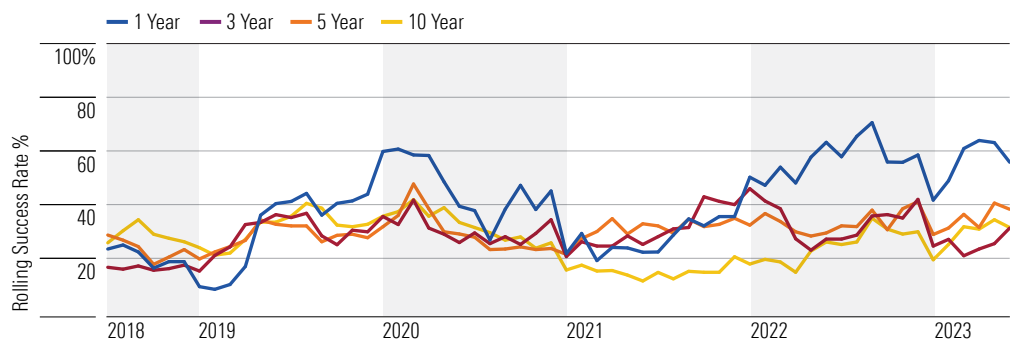
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 26** 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>Trailing Total Return</b>									
1-Year	131	93.9	27	96.3	12.5	10.9	11.5	9.9	57.3
3-Year	122	80.3	24	95.8	19.8	17.6	18.7	19.3	32.8
5-Year	113	72.6	26	92.3	5.7	5.1	5.0	4.8	39.8
10-Year	103	68.9	17	94.1	8.1	8.6	7.3	7.8	33.0
15-Year	128	53.9	12	83.3	8.3	8.8	8.0	8.5	21.9
20-Year	110	50.9	5	100.0	8.9	9.0	8.6	8.9	23.6
<b>Performance by Fee Quintile</b> (Trailing 10 Years)									
20th Percentile	21	61.9	3	100.0	8.3	9.2	7.7	8.5	28.6
40th Percentile	20	70.0	4	100.0	7.3	7.9	6.9	8.1	40.0
60th Percentile	21	71.4	3	100.0	8.3	7.3	7.7	8.6	38.1
80th Percentile	21	66.7	1	100.0	8.6	5.8	7.4	5.9	33.3
100th Percentile	21	71.4	6	83.3	8.0	7.0	7.0	7.1	23.8

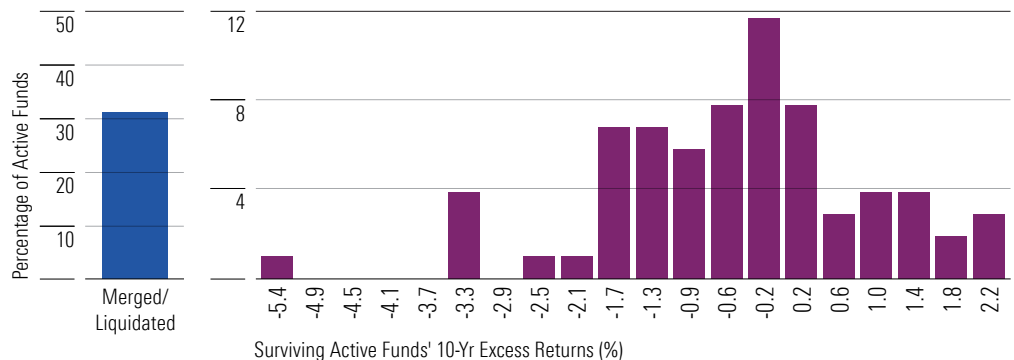
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 27** Rolling Success Rates for Surviving Active U.S. Small-Value Funds



Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 28** Mortality and Distribution of 10-Year Annualized Excess Returns for Surviving Active Small-Value Funds



Source: Morningstar. Data and calculations as of June 30, 2023.

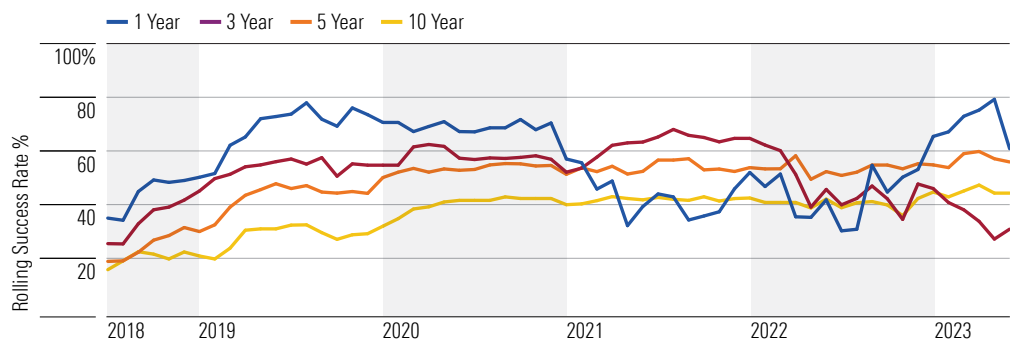


**Exhibit 29** U.S. Small Growth

	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>Trailing Total Return</b>									
1-Year	175	94.9	19	84.2	15.2	16.4	15.1	13.0	62.3
3-Year	179	89.4	16	100.0	6.3	6.5	7.8	9.5	32.4
5-Year	209	79.9	15	100.0	6.6	5.3	6.3	4.9	57.4
10-Year	201	68.2	13	100.0	9.8	9.1	9.4	8.8	45.8
15-Year	258	43.8	11	90.9	9.7	9.3	8.9	8.8	27.9
20-Year	202	41.6	3	100.0	9.5	10.2	8.4	9.9	5.9
<b>Performance by Fee Quintile</b> (Trailing 10 Years)									
20th Percentile	36	72.2	3	100.0	11.0	9.2	9.7	9.4	47.2
40th Percentile	43	69.8	0	0.0	9.3	0.0	9.6	0.0	53.5
60th Percentile	40	72.5	5	100.0	9.1	9.3	9.4	9.3	50.0
80th Percentile	40	60.0	2	100.0	8.1	9.5	8.7	9.9	30.0
100th Percentile	41	65.9	3	100.0	10.1	7.1	9.7	6.6	46.3

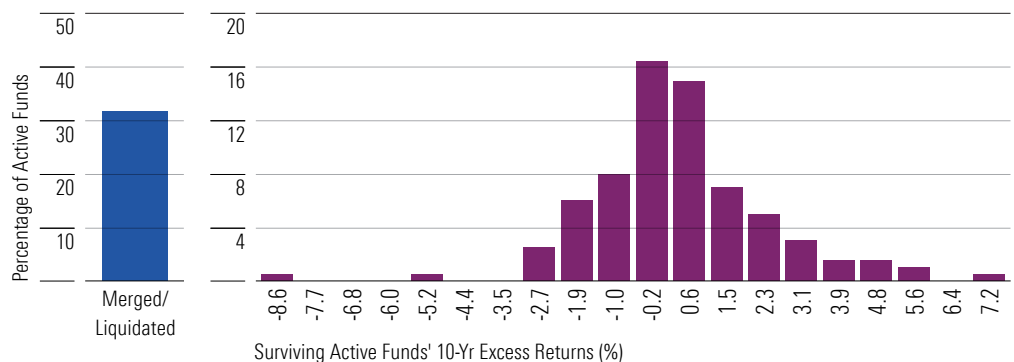
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 30** Rolling Success Rates for Surviving Active U.S. Small-Growth Funds



Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 31** Mortality and Distribution of 10-Year Annualized Excess Returns for Surviving Active Small-Growth Funds



Source: Morningstar. Data and calculations as of June 30, 2023.

### Foreign Stock

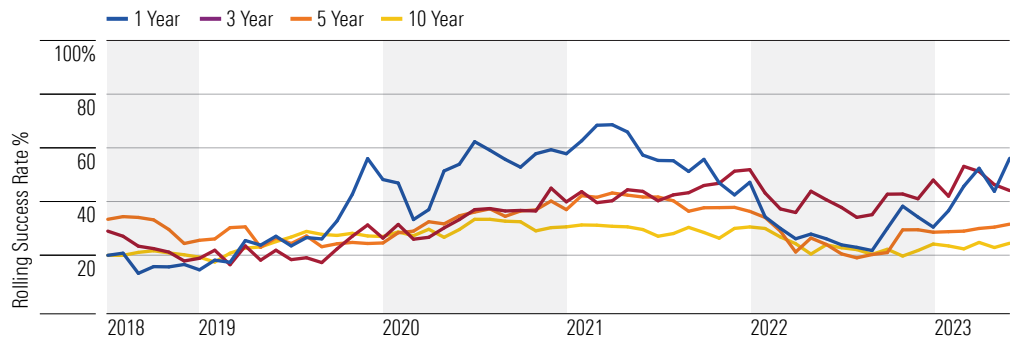
- ▶ Active managers who weave global- or foreign-stock portfolios succeeded at a 57.4% clip over the 12 months through June 2023, one year after posting a meager 25.7% success rate. Active success rates climbed or held steady across all six Morningstar Categories in the cohort.
- ▶ Global- and foreign-stock categories have been kinder to active managers than U.S. market segments. At 29.3%, foreign-stock funds' 10-year active success rate measured up better than the 20.6% rate for active U.S stock funds.
- ▶ The difference between 10-year asset-weighted returns for passive and active funds in three of these six Morningstar Categories was negative. This indicates that investors generally achieved better outcomes with active funds within those segments.
- ▶ Just as in the U.S., active foreign-stock managers have been more successful in smaller market-cap segments. The 53.8% active success rate in the foreign small/mid-blend category over the past 15 years more than doubled the 23.9% clip for active foreign large-blend managers.

#### Exhibit 32 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>Trailing Total Return</b>									
1-Year	191	95.8	91	95.6	16.6	14.8	15.9	15.3	57.6
3-Year	182	82.4	98	84.7	9.2	8.2	8.0	8.0	45.6
5-Year	181	73.5	87	83.9	4.3	4.1	3.6	4.0	33.1
10-Year	177	65.5	36	72.2	5.4	5.3	4.8	5.2	26.0
15-Year	176	44.9	30	60.0	3.7	3.2	2.7	3.1	23.9
20-Year	170	32.9	21	38.1	6.9	6.4	5.9	6.3	17.6
<b>Performance by Fee Quintile</b>									
(Trailing 10 Years)									
20th Percentile	32	62.5	7	85.7	5.3	5.2	5.5	5.3	40.6
40th Percentile	35	65.7	7	85.7	5.8	5.4	5.2	5.4	31.4
60th Percentile	34	76.5	7	71.4	4.7	6.2	4.7	5.8	17.6
80th Percentile	36	69.4	7	85.7	5.5	4.8	4.8	5.2	25.0
100th Percentile	36	55.6	8	50.0	4.6	4.5	4.2	4.2	22.2

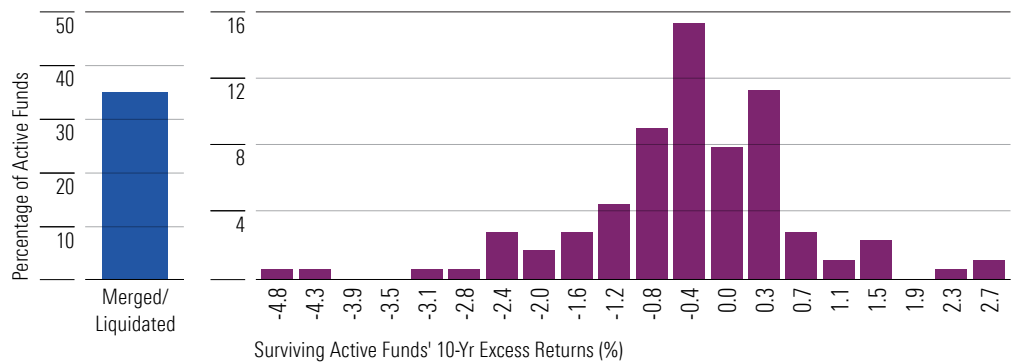
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 33** Rolling Success Rates for Surviving Active Foreign Large-Blend Funds



Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 34** Mortality and Distribution of 10-Year Annualized Excess Returns for Surviving Active Foreign Large-Blend Funds



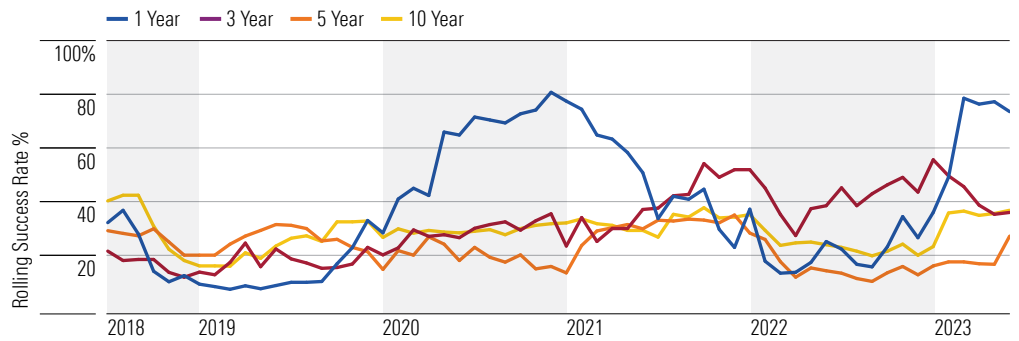
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 35 Foreign 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>Trailing Total Return</b>									
1-Year	88	95.5	40	95.0	17.6	15.0	16.6	13.0	75.0
3-Year	88	81.8	35	94.3	12.3	11.7	10.7	10.7	37.5
5-Year	87	73.6	29	82.8	4.1	3.9	3.5	3.8	28.7
10-Year	94	60.6	14	71.4	5.3	4.0	4.4	4.1	38.3
15-Year	93	51.6	4	50.0	3.4	2.3	2.7	2.9	23.7
<b>Performance by Fee Quintile</b> (Trailing 10 Years)									
20th Percentile	17	52.9	3	66.7	5.3	4.5	5.0	3.4	47.1
40th Percentile	19	68.4	3	100.0	4.3	4.0	4.4	4.2	47.4
60th Percentile	18	66.7	2	100.0	4.0	4.6	4.3	4.5	44.4
80th Percentile	19	63.2	2	50.0	6.1	3.7	4.5	3.6	31.6
100th Percentile	20	55.0	4	50.0	4.0	5.1	3.8	4.1	25.0

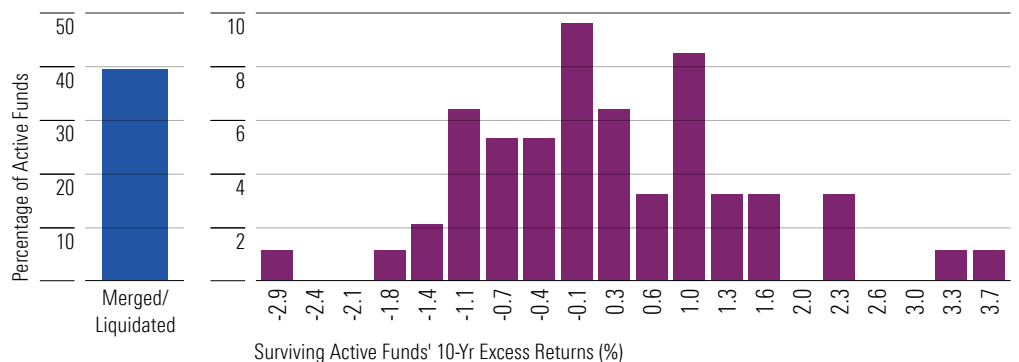
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 36 Rolling Success Rates for Surviving Active Foreign Large-Value Funds**



Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 37 Mortality and Distribution of 10-Year Annualized Excess Returns for Surviving Active Foreign Large-Value Funds**



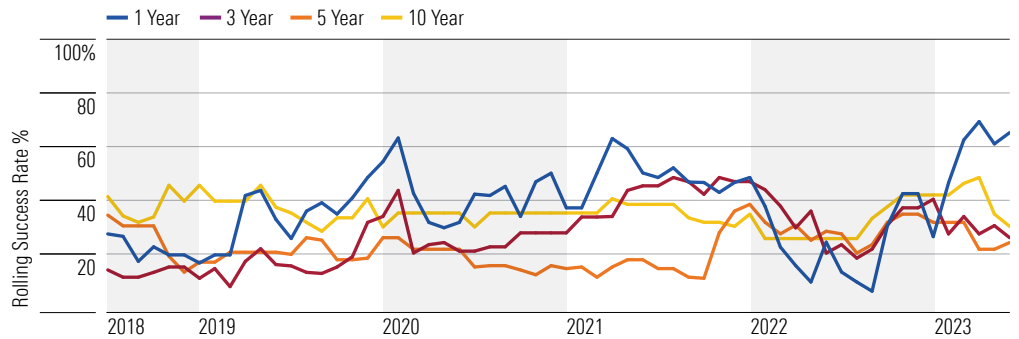
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 38** Foreign Small/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>Trailing Total Return</b>									
1-Year	24	91.7	7	100.0	12.4	10.2	12.4	10.7	66.7
3-Year	29	65.5	9	88.9	8.5	6.7	7.2	7.7	27.6
5-Year	31	51.6	8	100.0	1.8	1.4	1.2	2.0	25.8
10-Year	22	54.5	6	83.3	5.2	5.5	4.9	5.5	31.8
15-Year	13	61.5	3	66.7	4.7	3.7	4.5	3.7	53.8
<b>Performance by Fee Quintile</b> (Trailing 10 Years)									
20th Percentile	5	80.0	1	100.0	6.0	5.0	5.2	4.9	40.0
40th Percentile	4	25.0	1	100.0	3.8	6.1	4.0	6.1	0.0
60th Percentile	4	25.0	1	100.0	3.4	5.0	3.9	5.0	0.0
80th Percentile	4	100.0	1	0.0	5.4	2.2	6.0	2.2	75.0
100th Percentile	5	40.0	2	100.0	6.1	5.0	5.0	5.7	40.0

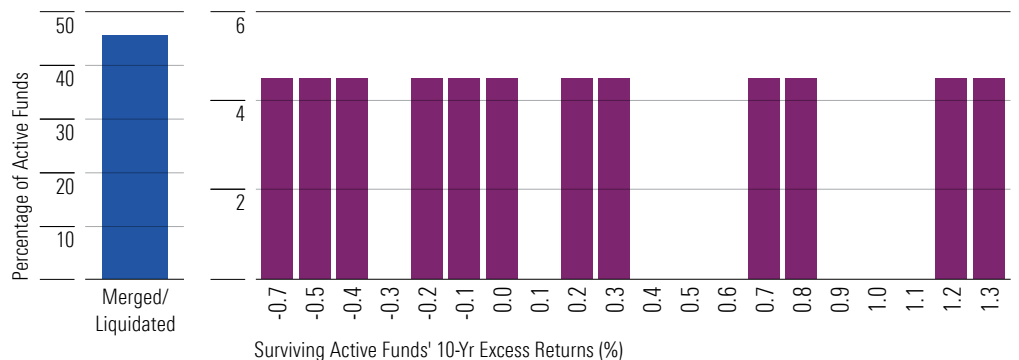
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 39** Rolling Success Rates for Surviving Active Foreign Small/Mid-Blend Funds



Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 40** Mortality and Distribution of 10-Year Annualized Excess Returns for Surviving Active Foreign Small/Mid-Blend Funds



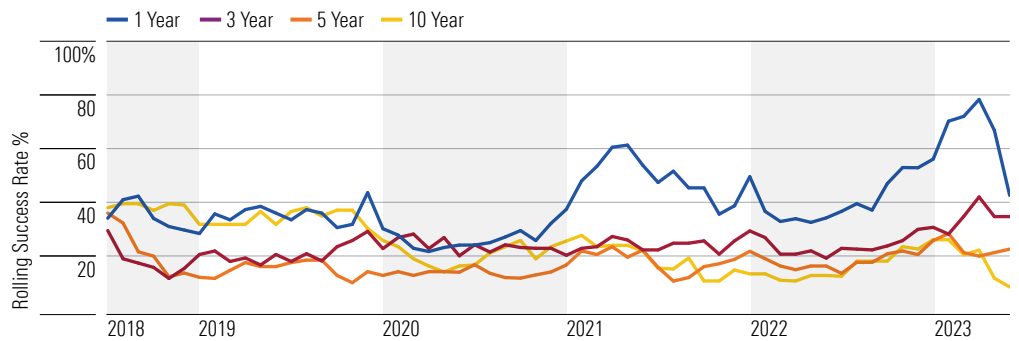
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 41** World 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>Trailing Total Return</b>									
1-Year	102	96.1	25	88.0	16.9	15.9	14.8	15.6	44.1
3-Year	94	85.1	21	95.2	10.0	10.7	10.6	10.8	36.2
5-Year	79	84.8	19	94.7	6.8	8.0	7.0	8.3	24.1
10-Year	60	83.3	9	100.0	8.1	8.8	8.1	9.3	10.0
15-Year	35	85.7	3	100.0	6.0	7.6	6.0	7.3	11.4
<b>Performance by Fee Quintile</b> (Trailing 10 Years)									
20th Percentile	12	91.7	2	100.0	7.9	8.5	8.0	8.2	8.3
40th Percentile	12	66.7	1	100.0	8.1	9.7	8.1	9.7	0.0
60th Percentile	11	81.8	2	100.0	8.7	9.6	8.3	9.7	27.3
80th Percentile	13	92.3	2	100.0	8.2	9.0	8.6	9.3	7.7
100th Percentile	12	83.3	2	100.0	8.1	10.6	7.3	9.7	8.3

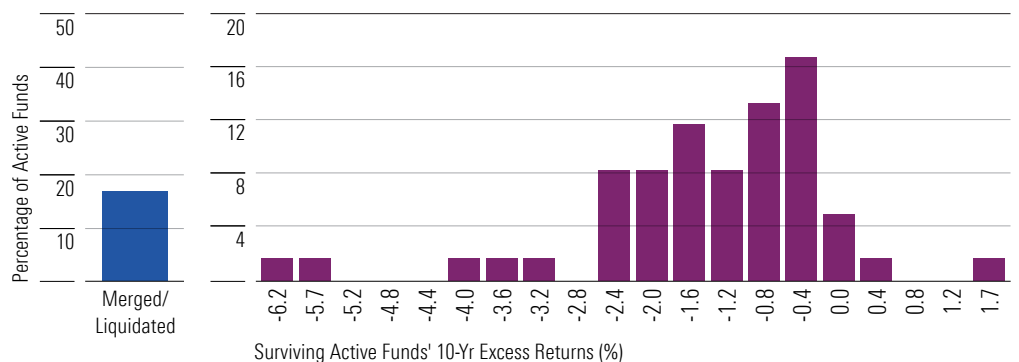
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 42** Rolling Success Rates for Surviving Active World Large-Blend Funds



Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 43** Mortality and Distribution of 10-Year Annualized Excess Returns for Surviving Active World Large-Blend Fund



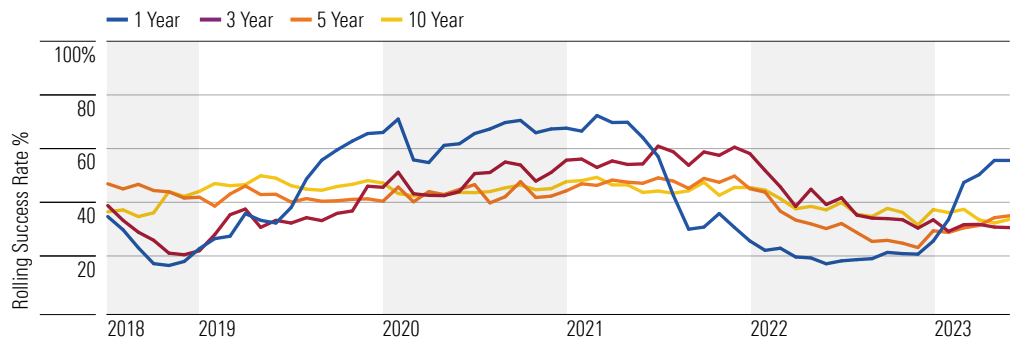
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 44** 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>Trailing Total Return</b>									
1-Year	224	93.3	76	94.7	7.4	2.2	5.7	4.2	57.1
3-Year	224	80.4	74	87.8	2.8	3.3	3.1	4.0	32.1
5-Year	233	69.1	71	76.1	1.8	1.5	1.4	1.3	36.5
10-Year	162	62.3	48	58.3	3.3	2.8	2.6	2.5	35.2
15-Year	90	65.6	10	70.0	2.2	1.6	1.5	1.9	25.6
<b>Performance by Fee Quintile</b> (Trailing 10 Years)									
20th Percentile	33	72.7	9	88.9	3.4	3.1	3.0	2.6	45.5
40th Percentile	31	71.0	10	40.0	4.6	2.2	3.1	2.3	51.6
60th Percentile	33	57.6	8	75.0	2.5	2.5	2.2	3.7	27.3
80th Percentile	32	56.3	11	63.6	2.1	2.7	2.2	2.5	31.3
100th Percentile	33	54.5	10	30.0	2.2	1.3	2.5	1.2	27.3

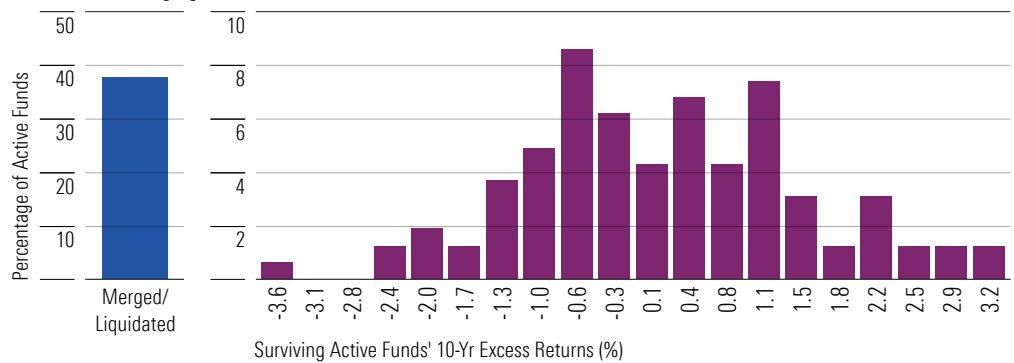
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 45** Rolling Success Rates for Surviving Active Diversified Emerging-Markets Funds



Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 46** Mortality and Distribution of 10-Year Annualized Excess Returns for Surviving Active Diversified Emerging-Markets Funds



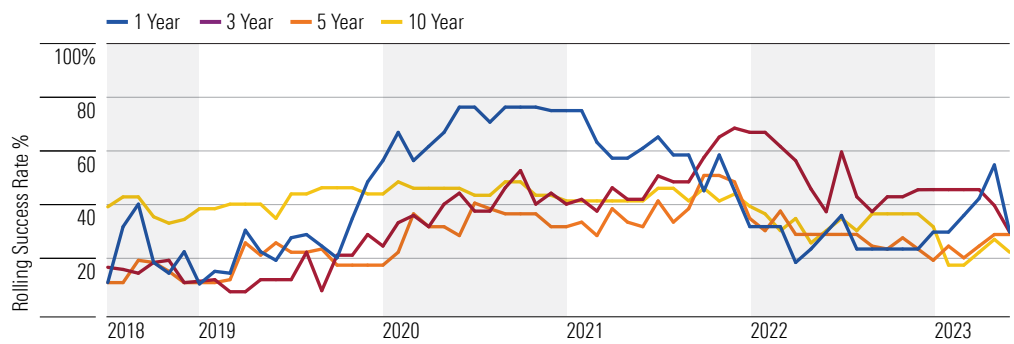
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 47** Europe Stock

	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>Trailing Total Return</b>									
1-Year	16	100.0	26	100.0	21.5	22.9	19.8	20.2	31.3
3-Year	16	93.8	31	80.6	9.0	10.9	9.2	10.8	31.3
5-Year	23	69.6	38	63.2	4.0	5.2	4.9	5.1	30.4
10-Year	21	57.1	13	76.9	4.7	6.2	5.5	5.7	23.8
15-Year	22	45.5	13	61.5	3.5	3.4	3.7	2.7	40.9
20-Year	46	21.7	7	57.1	6.8	6.6	6.9	5.8	19.6
<b>Performance by Fee Quintile</b> (Trailing 10 Years)									
20th Percentile	4	75.0	3	100.0	5.5	5.9	6.3	5.8	25.0
40th Percentile	4	75.0	2	50.0	4.9	6.2	5.1	5.5	0.0
60th Percentile	4	50.0	2	100.0	4.7	8.6	5.3	8.1	25.0
80th Percentile	4	50.0	3	66.7	3.7	5.3	4.6	4.9	25.0
100th Percentile	5	40.0	3	66.7	5.9	4.6	6.2	4.6	40.0

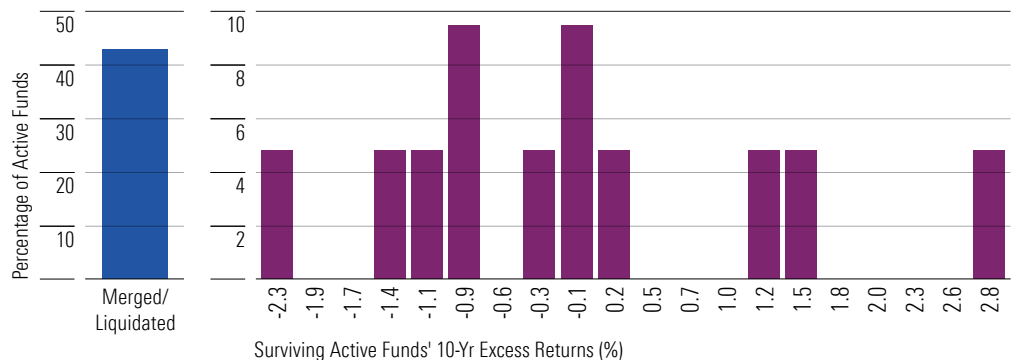
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 48** Rolling Success Rates for Surviving Active Europe-Stock Funds



Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 49** Mortality and Distribution of 10-Year Annualized Excess Returns for Surviving Active Europe-Stock Funds



Source: Morningstar. Data and calculations as of June 30, 2023.



## Real Estate

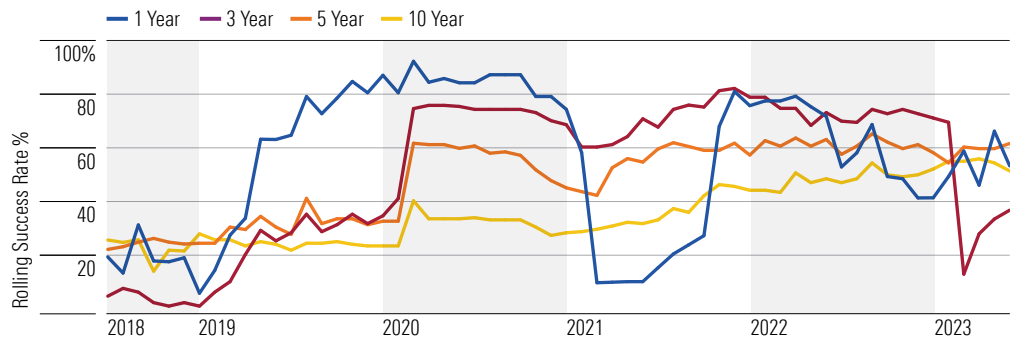
- ▶ Over the decade through June 2023, 52.5% of actively managed real estate funds lived and beat the composite indexed peer, making it the only category group whose 10-year success ratio exceeded 50%.
- ▶ Success rates in the global real estate category fluctuate dramatically over shorter time horizons. This owes to the diversity of funds within the category. Some invest exclusively outside the United States, while others are more truly global. Thus, differences in performance between U.S. and ex-U.S. real estate securities will cause active managers' success rates to ebb and flow.

### Exhibit 50 U.S. Real Estate

	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>Trailing Total Return</b>									
1-Year	62	96.8	32	100.0	-2.4	-3.9	-2.6	-3.7	54.8
3-Year	60	86.7	33	93.9	6.9	6.0	6.7	7.3	38.3
5-Year	65	75.4	27	88.9	4.9	4.0	4.3	2.6	63.1
10-Year	68	66.2	19	73.7	6.5	5.9	5.9	5.1	52.9
15-Year	76	53.9	13	61.5	6.4	6.5	5.8	6.1	30.3
20-Year	58	46.6	5	80.0	8.6	8.2	8.0	8.1	24.1
<b>Performance by Fee Quintile</b>									
(Trailing 10 Years)									
20th Percentile	14	57.1	4	100.0	6.5	6.0	6.1	5.3	50.0
40th Percentile	12	41.7	4	75.0	7.5	5.5	6.1	4.0	33.3
60th Percentile	15	73.3	1	100.0	6.0	6.2	6.2	6.2	60.0
80th Percentile	13	84.6	6	50.0	6.8	5.0	5.9	5.9	76.9
100th Percentile	14	71.4	4	75.0	5.7	5.0	5.2	4.4	42.9

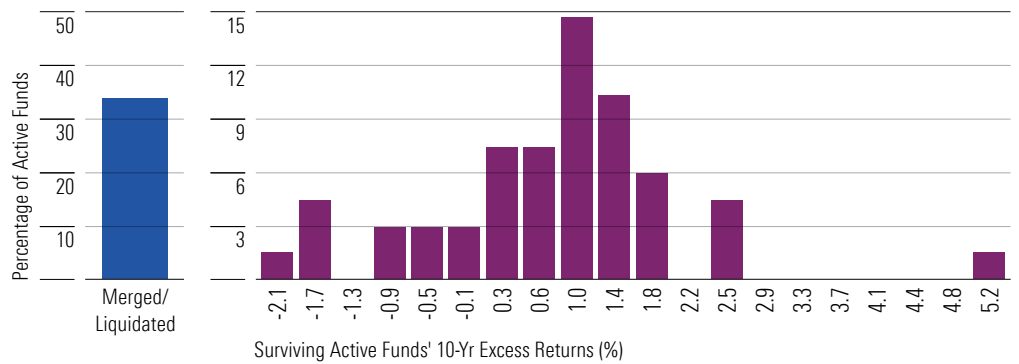
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 51** Rolling Success Rates for Surviving Active U.S. Real Estate Funds



Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 52** Mortality and Distribution of 10-Year Annualized Excess Returns for Surviving Active U.S. Real Estate Funds



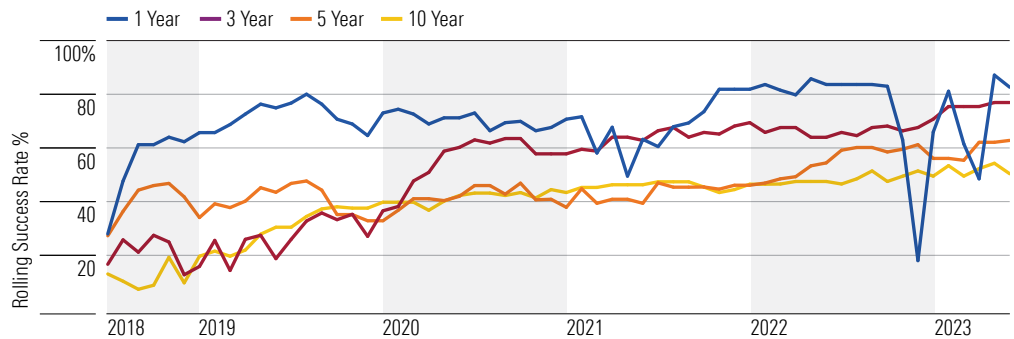
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 53** Global Real Estate

	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>Trailing Total Return</b>									
1-Year	44	97.7	13	100.0	-4.6	-6.2	-4.1	-6.3	84.1
3-Year	51	84.3	12	91.7	3.1	0.6	3.3	0.7	78.4
5-Year	56	71.4	13	92.3	0.9	-1.9	0.8	-1.7	64.3
10-Year	52	59.6	11	81.8	3.3	1.3	2.9	1.9	51.9
15-Year	36	44.4	9	66.7	2.7	1.8	2.7	2.1	33.3
<b>Performance by Fee Quintile</b> (Trailing 10 Years)									
20th Percentile	11	45.5	1	100.0	3.3	1.0	3.1	1.0	36.4
40th Percentile	10	80.0	0	0.0	3.6	0.0	3.2	0.0	70.0
60th Percentile	9	55.6	4	50.0	3.3	0.6	3.2	1.1	55.6
80th Percentile	11	54.5	3	100.0	3.3	3.1	3.2	3.1	54.5
100th Percentile	11	63.6	3	100.0	3.7	0.2	2.3	1.2	45.5

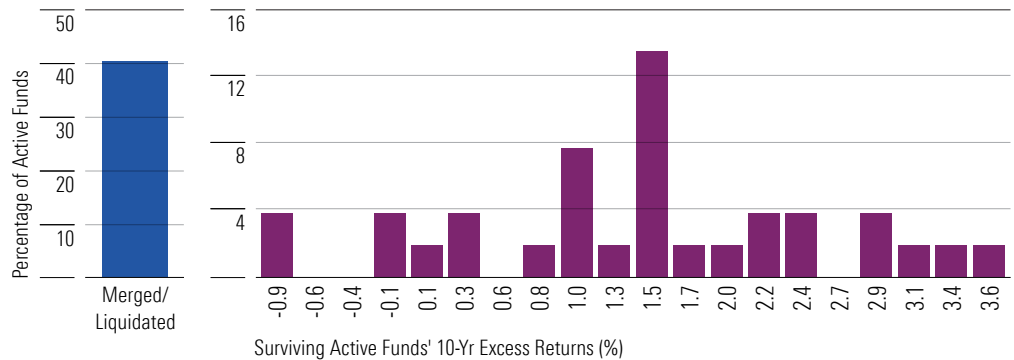
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 54** Rolling Success Rates for Surviving Active Global Real Estate Funds



Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 55** Mortality and Distribution of 10-Year Annualized Excess Returns for Surviving Active Global Real Estate Funds



Source: Morningstar. Data and calculations as of June 30, 2023.

### Fixed Income

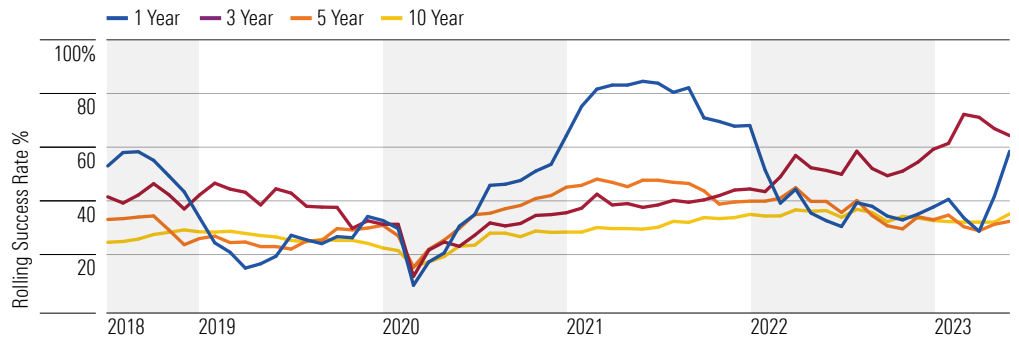
- ▶ Active bond managers turned in a 55.3% success rate over the 12 months through June 2023 in a swift rebound from last year's 32.1% figure.
- ▶ Actively managed funds in the intermediate core bond category tend to take more credit risk than indexed peers (even after significantly riskier strategies seceded to form the intermediate core-plus category in 2019). That extra dose of risk likely aided active intermediate-core funds in 2023 after hurting them in 2022, as markets rewarded credit risk after punishing it the year prior.
- ▶ Long-term, survival has meant success for most active bond strategies. Among those in existence 15 years ago, roughly one in three went on to beat its composite indexed peer through June 2023, though just 48.2% of them survived the full period. In other words, 68.8% of active bond funds that survived the 15-year stretch outperformed the passive composite during it.

#### Exhibit 56 Intermediate Core 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>Trailing Total Return</b>									
1-Year	125	96.8	33	97.0	-0.6	-0.9	-1.0	-1.0	60.0
3-Year	114	86.0	32	93.8	-3.3	-4.0	-3.6	-4.1	65.8
5-Year	115	71.3	29	86.2	1.1	0.8	0.5	0.6	33.9
10-Year	147	55.8	25	88.0	1.7	1.5	1.4	1.2	36.7
15-Year	205	34.6	20	60.0	2.6	2.7	2.4	2.5	22.0
20-Year	236	23.7	19	31.6	2.7	3.0	2.4	2.7	13.1
<b>Performance by Fee Quintile</b>									
(Trailing 10 Years)									
20th Percentile	27	55.6	5	100.0	1.9	1.5	1.7	1.6	48.1
40th Percentile	30	60.0	4	100.0	1.6	1.4	1.5	1.3	40.0
60th Percentile	29	62.1	6	100.0	1.6	1.0	1.3	1.2	37.9
80th Percentile	29	55.2	5	40.0	1.6	1.4	1.2	1.3	31.0
100th Percentile	30	43.3	5	100.0	1.5	1.1	1.1	0.9	20.0

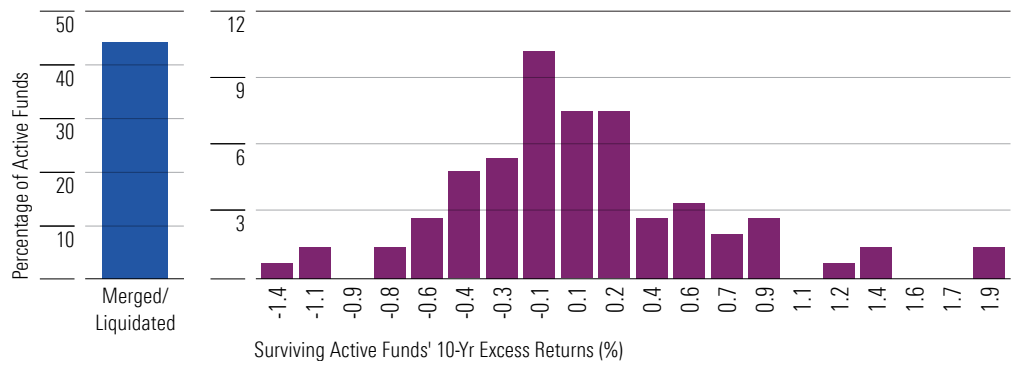
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 57** Rolling Success Rates for Surviving Active Intermediate Core Bond Funds



Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 58** Mortality and Distribution of 10-Year Annualized Excess Returns for Surviving Active Intermediate Core Bond Funds



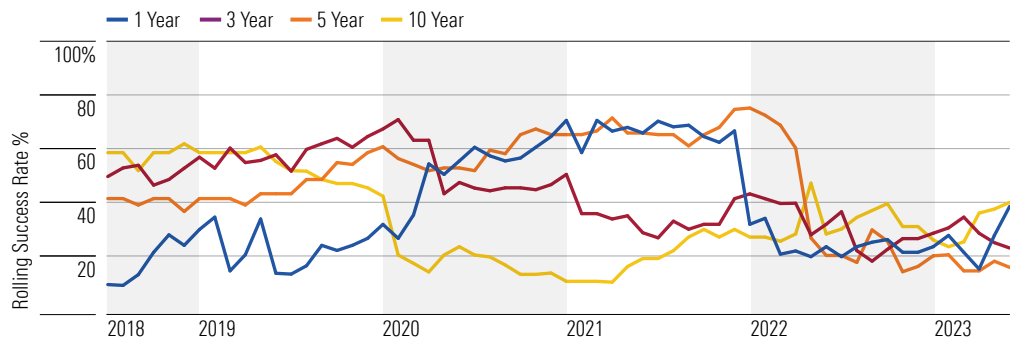
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 59 Corporate 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>Trailing Total Return</b>									
1-Year	50	100.0	33	90.9	2.0	1.8	1.6	1.7	40.0
3-Year	49	91.8	24	91.7	-3.2	-3.4	-2.8	-2.6	24.5
5-Year	52	86.5	28	82.1	1.7	2.0	1.7	2.0	17.3
10-Year	41	70.7	19	63.2	2.8	2.6	2.5	2.3	41.5
15-Year	28	75.0	3	100.0	4.4	4.1	4.0	3.8	53.6
<b>Performance by Fee Quintile</b> (Trailing 10 Years)									
20th Percentile	6	66.7	2	100.0	2.9	2.9	2.5	3.2	33.3
40th Percentile	8	62.5	5	100.0	3.4	2.8	3.0	2.6	37.5
60th Percentile	8	62.5	4	100.0	2.3	2.2	2.2	2.7	12.5
80th Percentile	8	75.0	1	100.0	2.6	2.0	2.3	2.0	62.5
100th Percentile	9	77.8	7	0.0	2.6	1.6	2.2	1.8	44.4

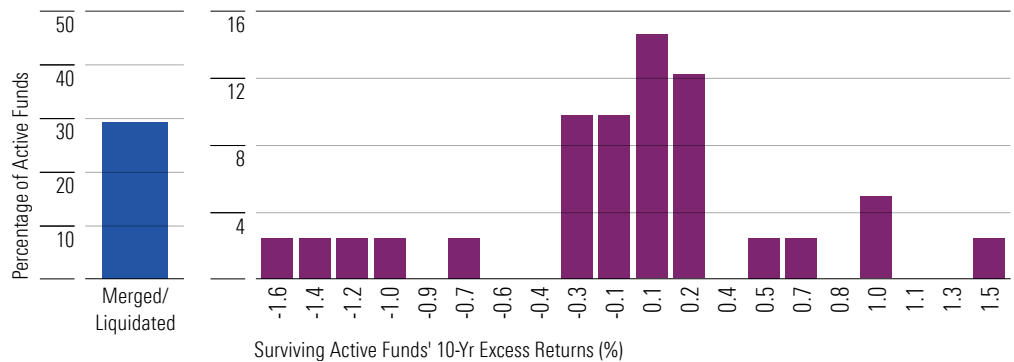
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 60 Rolling Success Rates for Surviving Active Corporate Bond Funds**



Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 61 Mortality and Distribution of 10-Year Annualized Excess Returns for Surviving Active Corporate Bond Funds**



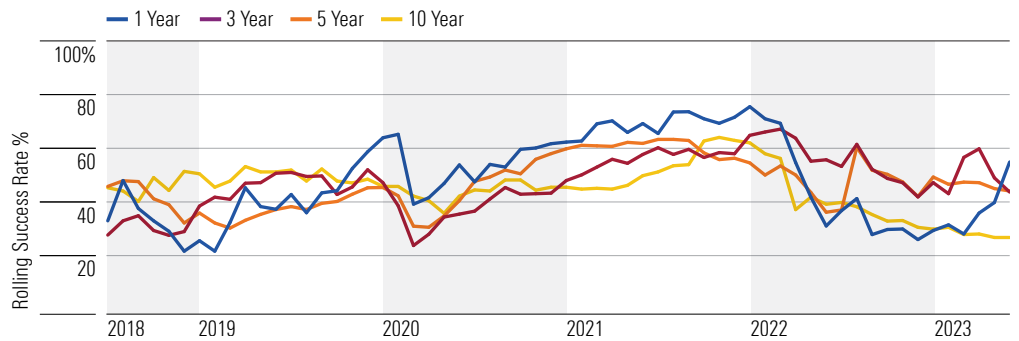
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 62 High-Yield 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>Trailing Total Return</b>									
1-Year	181	97.2	49	91.8	8.4	8.1	7.9	8.0	56.4
3-Year	186	87.6	43	79.1	3.5	2.5	3.0	2.8	45.2
5-Year	182	83.0	33	69.7	3.2	2.6	2.5	2.6	45.6
10-Year	159	74.2	15	46.7	3.9	3.3	3.4	3.7	28.3
<b>Performance by Fee Quintile</b> (Trailing 10 Years)									
20th Percentile	28	78.6	2	50.0	4.3	4.0	3.9	4.0	46.4
40th Percentile	33	78.8	3	100.0	3.8	3.3	3.7	4.2	33.3
60th Percentile	31	67.7	0	0.0	3.5	0.0	2.7	0.0	22.6
80th Percentile	33	81.8	6	0.0	3.9	1.7	3.4	1.7	30.3
100th Percentile	31	67.7	4	75.0	3.3	3.3	2.7	3.5	6.5

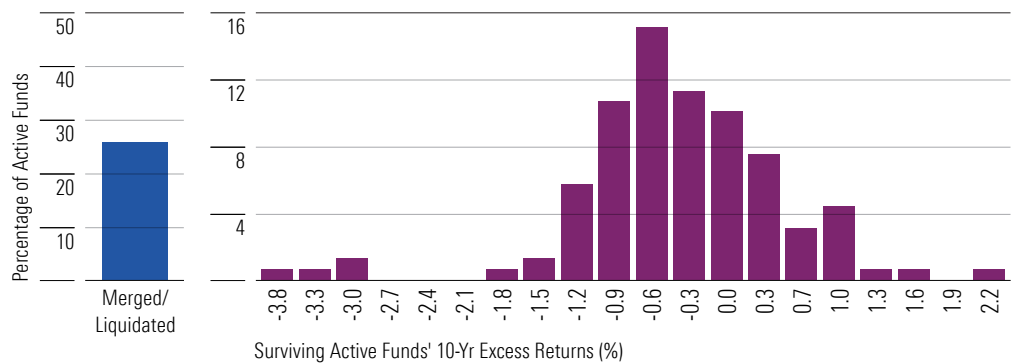
Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 63 Rolling Success Rates for Surviving Active High-Yield Bond Funds**



Source: Morningstar. Data and calculations as of June 30, 2023.

**Exhibit 64 Mortality and Distribution of 10-Year Annualized Excess Returns for Surviving Active High-Yield Bond Funds**



Source: Morningstar. Data and calculations as of June 30, 2023.

**Appendix A****Summary of Results for the Periods Ended Dec. 31, 2022, and June 30, 2022.****Exhibit 65** Summary Results for the Period Ended Dec. 31, 2022

Category	Active Funds' Success Rates by Category (%)							10-Year	10-Year
	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year	(Lowest Cost)	(Highest Cost)	
U.S. Large Blend	53.0	37.3	30.0	13.1	9.9	8.3	22.2	6.7	
U.S. Large Value	46.9	41.2	30.8	11.8	11.0	17.4	20.0	3.3	
U.S. Large Growth	36.8	23.0	21.2	7.0	2.8	4.8	13.8	1.1	
U.S. Mid Blend	50.0	44.7	31.0	18.8	11.8	8.3	34.8	0.0	
U.S. Mid Value	39.3	50.5	30.7	3.6	18.5	17.9	4.8	0.0	
U.S. Mid Growth	45.9	47.7	60.6	39.1	23.2	—	46.5	27.9	
U.S. Small Blend	52.3	52.1	34.1	24.7	23.8	20.9	41.7	21.1	
U.S. Small Value	60.0	43.5	42.6	31.4	15.4	21.8	35.0	14.3	
U.S. Small Growth	54.6	49.2	56.7	43.8	25.1	—	46.3	45.2	
Foreign Large Blend	35.8	42.5	31.0	23.3	22.7	18.2	43.8	13.9	
Foreign Large Value	28.1	45.1	14.3	21.6	16.5	—	33.3	0.0	
Foreign Small-Mid Blend	44.0	38.7	36.4	43.5	69.2	—	60.0	33.3	
World Large Blend	54.4	31.5	22.1	24.1	—	—	25.0	16.7	
Diversified Emerging Markets	22.2	31.9	24.7	33.1	37.5	—	48.4	37.1	
Europe Stock	25.0	47.1	25.0	38.1	40.9	15.7	75.0	20.0	
U.S. Real Estate	42.9	74.2	62.7	51.5	28.2	24.1	50.0	33.3	
Global Real Estate	19.6	69.1	62.7	52.9	26.5	—	42.9	54.5	
Intermediate Core Bond	36.6	55.9	35.6	35.1	22.2	14.4	57.1	19.4	
Corporate Bond	22.9	28.0	17.6	32.5	53.8	—	20.0	37.5	
High-Yield Bond	27.5	43.4	43.5	32.1	—	—	41.4	9.7	

Source: Morningstar. Data and calculations as of Dec. 31, 2022.



**Exhibit 66** Summary Results for the Period Ended June 30, 2022

Category	Active Funds' Success Rates by Category (%)						10-Year	10-Year
	1-Year	3-Year	5-Year	10-Year	15-Year	20-Year	(Lowest Cost)	(Highest Cost)
U.S. Large Blend	45.3	33.0	23.5	9.8	11.0	8.6	16.5	1.3
U.S. Large Value	33.9	32.4	25.9	15.2	12.4	13.8	25.4	6.7
U.S. Large Growth	39.0	23.0	17.0	5.3	3.8	3.8	11.5	1.1
U.S. Mid Blend	67.3	55.5	30.4	18.7	12.7	7.4	54.2	4.0
U.S. Mid Value	29.6	46.8	32.4	3.7	18.9	—	5.0	0.0
U.S. Mid Growth	49.7	40.7	58.6	36.9	23.1	—	45.5	27.3
U.S. Small Blend	59.4	39.6	27.3	18.7	20.9	15.5	33.3	19.4
U.S. Small Value	64.7	28.7	31.0	27.6	22.0	15.9	30.0	4.8
U.S. Small Growth	43.3	47.2	53.8	43.6	26.5	—	51.2	38.6
Foreign Large Blend	27.7	42.2	25.6	25.4	26.0	21.4	39.4	16.2
Foreign Large Value	26.7	40.0	15.8	25.5	12.9	—	26.3	9.1
Foreign Small-Mid Blend	25.9	21.9	30.0	27.3	—	—	60.0	20.0
World Large Stock	35.7	20.7	17.8	14.3	—	—	20.0	20.0
Diversified Emerging Markets	18.6	40.7	31.7	38.7	30.7	—	51.6	37.1
Europe Stock	31.3	38.9	30.4	31.8	39.1	14.6	75.0	20.0
U.S. Real Estate	73.2	74.6	64.6	50.0	25.7	26.3	50.0	33.3
Global Real Estate	85.1	65.5	55.9	49.0	—	—	30.0	45.5
Intermediate Core Bond	34.1	52.8	41.3	37.9	19.8	11.2	57.1	18.2
Corporate Bond	25.0	33.3	21.7	29.7	—	—	20.0	37.5
High-Yield Bond	32.6	57.2	37.7	40.7	—	—	59.3	16.7

Source: Morningstar. Data and calculations as of June 30, 2022.

## Appendix B — 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-, 10-, 15-, or 20-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-, 10-, 15-, or 20-year period).

### Asset-Weighted Returns

We calculate the asset-weighted returns for each cohort using each share class' 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 quintiles. We then apply the same steps described above to calculate the success rates for funds in each quintile. 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.

### **Excess Returns**

We measure surviving active funds' excess returns relative to the equal-weighted average passive fund return in each category.

## Appendix C—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 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 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 this is a better benchmark because it reflects the performance of actual investable options and not an index. One cannot directly invest in indexes. 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 fund managers may vary depending on whether one uses the S&P 500 or the Russell 1000 Index as the 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, as well as others) and we mitigate the effects that might stem from cherry-picking a single index as a benchmark. The net result is a much fairer 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 with returns exceeding 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 the 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 quintiles to highlight this relationship. ■■