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Research Paper

The Next Chapter in the Active versus Passive Debate

An Update to our Analysis of Performance, Consistency and Persistency

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We have completed the sixth iteration of our research study titled "The Next Chapter in the Active versus Passive Management Debate" where we evaluate the persistency of top quartile mutual funds[1] in 17 different categories during the ten-year period ended December 2020. Despite the different market environments captured in each of the time periods since the first edition of the paper in 2007, our primary observations have remained consistent over time.

As a reminder from our last edition, this analysis is for all actively-managed strategies as defined by Morningstar. All passively-managed funds that have achieved ten-year track records are independently analyzed at the end of the paper.

Key Observations:

- *85 percent of ten-year top quartile mutual funds were unable to avoid at least one three-year stretch in the bottom half of their peer groups. This result is modestly lower than the median of the historical range of 83 to 92 in our past five editions, but up modestly from the 83 percent we observed in our last edition. As in the previous edition, we continue to attribute the lower percentage compared to the historical range to be a function of more consistent results in Intermediate Bonds and Large Cap Core equities, which represent a high percentage of the funds analyzed.*
- *57 percent of ten-year top quartile mutual funds were unable to avoid the bottom half during a five-year period. This result is modestly lower than the median of the historical range of 54 to 63 in our past five editions, but up modestly from the 54 percent we observed in our last edition.*

- *Top quartile mutual funds with three-year stretches in the bottom half of their peer group spent, on average, five to six consecutive quarters below the median. Top quartile funds spent an average of 21 percent of rolling three-year periods in the bottom half of their peer groups.*
- *Owning the 39th percentile mutual fund in all 17 categories would have matched the weighted index return for a 70 percent equity and 30 percent fixed income portfolio during the ten-year period. This result is modestly lower than the median of the historical range of 36 to 52 in our past five editions, and up modestly from the 37 percent we observed in our last edition. The trend that more effective manager selection is required to match the weighted index return continues to be persist in general, including in the recent ten-year period.*
- *Recent data suggests that actively-managed strategies tend to struggle in strong up markets compared to passive strategies, especially in domestic equity asset classes. Many asset classes generate outperformance in the top quartile of their peer group and to a lesser extent the median manager more often in down markets.*
- *Investing passively does not completely insulate investors from volatility in relative performance compared to active peers and in some asset classes has guaranteed sub-par results over the most recent ten-year period.*
- *Falling prey to natural human behavioral tendencies during the manager selection and termination process generally leads to failure. Investors need to make a concerted effort to understand a manager's investment process, sub-style and investment philosophy before investing to develop the confidence and patience required for long-term success.*

Introduction

While volatility spikes occurred sporadically during the last two years, risk-assets such as equities, real estate and high yield bonds continued to add to already strong absolute performance as a result of continued stimulative practices from global central banks, especially from the U.S. Federal Reserve. Despite including an unprecedented year like 2020 in the analysis, our current findings are consistent with our previous ones and support our previous conclusion that nearly all of the best managers over long periods periodically struggle over shorter periods.

[1] Distinct portfolio share classes (only) from Morningstar mutual fund database. Not corrected for survivorship bias. All data in all exhibits is sourced as Morningstar and Fiducient Advisors analysis unless stated otherwise.

Exhibit 1

Ten-year top quartile funds[2,3,4] that fell below median during one or more three- and five-year periods

Category	Number of Funds with 10-Year Track Records[1,2]	Number of 10-Year Top Quartile Active Managers	Number of 10-Year Top Quartile Active Managers Below Median For a 3-Year Period	Percent of 10-Year Top Quartile Active Managers Below Median For a 3-Year Period	Average Number of Consecutive Quarters Spent In Bottom Half of Peer Group	Number of 10-Year Top Quartile Funds Below Median For a 5-Year Period	Percent of 10-Year Top Quartile Active Managers Below Median For a 5-Year Period
Intermediate Bond	96	23	13	57%	4.2	8	35%
High Yield Bond	118	31	23	74%	5.0	16	52%
International/Global Bond	37	9	8	89%	3.8	5	56%
Large Cap Value	236	57	54	95%	4.8	38	67%
Large Cap Core	287	41	31	76%	5.2	23	56%
Large Cap Growth	280	62	42	68%	4.3	18	29%
Mid Cap Value	77	20	19	95%	5.3	11	55%
Mid Cap Core	82	14	13	93%	6.2	11	79%
Mid Cap Growth	131	33	30	91%	8.2	23	70%
Small Cap Value	92	22	21	95%	5.2	12	55%
Small Cap Core	141	24	21	88%	6.0	14	58%
Small Cap Growth	135	34	33	97%	7.5	28	82%
International Value	66	17	15	88%	4.1	10	59%
International Core	127	32	29	91%	6.5	21	66%
International Growth	72	18	13	72%	5.4	8	44%
Emerging Markets	102	26	23	88%	6.1	14	54%
Real Estate	47	12	9	75%	4.4	7	58%
Total	**2126**	**475**	**397**				
Weighted Average				**84%**	**5.5**	**267**	**56%**

Source: Morningstar, Fiducient Advisors Analysis for all exhibits in this paper unless specified otherwise.

Duration of Manager Underperformance

The duration of below peer group median performance can test the patience of even the most sophisticated investors. We believe many accept the premise that strong long-term performing managers can produce poor results from time to time. However, the length of these poor-performing stretches is often surprisingly long. **Exhibit 2** shows that ten-year top quartile funds spent about 21 percent of three-year periods (or about six out of 29) in the bottom half of their peer group. Therefore, had one possessed enough skill (or luck) to have selected top quartile funds in every single category, one would still have suffered through many quarterly performance reviews where approximately one in four of the selected managers underwent three-year below median performance. Over rolling five-year periods, top quartile funds spent 14 percent of the time (or about three out of 21) in the bottom half of their peer groups. The

[2] *Many fund families offer multiple versions of the same fund, but with variations of the fees that are charged and investor qualifications. Morningstar's "distinct portfolio only" feature removes all duplicate options. Morningstar normally designates the oldest share class as the distinct portfolio.*
[3] *Morningstar data is not immune to survivorship bias. Each mutual fund that survived the ten-year stretch was captured regardless of performance. In addition, the Morningstar data generates returns net of expenses.*
[4] *All ten-year calculations across the paper reflect the period from December 31, 2010-December 31, 2020.*

ranges are relatively tight and consistent across all 17 analyzed asset classes.

Exhibit 2

Average percent of three- and five-year periods spent in the bottom half by ten-year top quartile funds

Category	Number of 10 year Top Quartile Active Managers	Average Percent of 3-Year Periods Spent in Bottom Half	Average Percent of 5-Year Periods Spent in Bottom Half
Intermediate Bond	23	9%	6%
High Yield Bond	30	17%	8%
International/Global Bond	9	16%	8%
Large Cap Value	57	20%	13%
Large Cap Core	40	16%	12%
Large Cap Growth	61	13%	10%
Mid Cap Value	19	24%	11%
Mid Cap Core	13	25%	20%
Mid Cap Growth	33	30%	22%
Small Cap Value	22	25%	16%
Small Cap Core	23	23%	16%
Small Cap Growth	34	30%	27%
International Value	17	19%	12%
International Core	32	28%	21%
International Growth	18	15%	8%
Emerging Markets	26	22%	14%
Real Estate	12	17%	12%
Weighted Average		**21%**	**14%**

Source: Morningstar, Fiducient Advisors Analysis.

Once a manager is hired, it is very unlikely that performance will always be strong when revisiting trailing performance on a quarterly basis, even if the next ten-year period is strong enough to place the manager in the top quartile of their peer group. In fact, the only way to ensure your portfolio will always consist of managers with strong performance over trailing periods is to constantly replace your recent underperforming managers with recent more favorable performers. We advise against this because it will likely lead to long-term underperformance as shorter-term relative performance mean-reverts. As behavioral finance suggests, we should often hold when it seems obvious we should sell. Such restraint is often easier said than done, as it requires discipline and patience. Since even the best performing managers periodically struggle, what are the legitimate reasons to consider termination? We believe the answers to the following questions are the most instructive:

1. Has the portfolio manager or team changed the process, investment constraints or style?
2. Does the underperformance align with the historical context of the manager's track record in similar market cycles?
3. Have there been any personnel or organizational changes recently that explain the underperformance?
4. Does the process remain consistent despite near-term struggles?
5. Are alignment of incentives in place to retain strong portfolio managers and supporting analysts?
6. Has the manager's competitive advantage changed as a result of changing market dynamics?

While it may be easier to avoid these difficult questions by simply terminating (and hiring a recent strong-performing manager), we believe doing so is likely to sacrifice long-term performance.

Style Analysis

It is important to know both when and by how much active managers are expected to both outperform and underperform. Stylistically, many asset classes exhibit a negative relationship with alpha generation and the level of benchmark return. That is, the greater the benchmark return, the more difficult it is for active managers to keep pace with the benchmark. Index performance rankings are also cyclical and often fluctuate as much as active strategies in the same asset class. In some cycles, indices can be extremely difficult to beat not only by the median manager, but even by a top quartile manager. **Exhibit 3** illustrates this concept:

Exhibit 3

Index[5] returns compared to median and top quartile funds

Category	10 year index return	10-Year Index Peer Group Rank	Median Fund Return	Median Fund Excess Return	Top Quartile Fund Return	Top Quartile Fund Excess Return
Intermediate Bond	3.8%	52	3.9%	0.0%	4.2%	0.3%
High Yield Bond	6.8%	9	5.8%	-1.0%	6.1%	-0.7%
International/Global Bond	2.0%	83	3.1%	1.1%	3.5%	1.5%
Large Cap Value	10.5%	31	9.9%	-0.6%	10.7%	0.2%
Large Cap Core	13.9%	10	12.6%	-1.3%	13.6%	-0.3%
Large Cap Growth	17.2%	18	15.3%	-1.9%	16.5%	-0.7%
Mid Cap Value	10.5%	12	9.3%	-1.2%	10.0%	-0.4%
Mid Cap Core	12.4%	13	10.4%	-2.0%	11.3%	-1.1%
Mid Cap Growth	15.0%	32	14.1%	-0.9%	15.3%	0.2%
Small Cap Value	8.7%	31	7.9%	-0.7%	8.8%	0.2%
Small Cap Core	11.2%	20	10.0%	-1.2%	11.0%	-0.2%
Small Cap Growth	13.5%	57	14.1%	0.6%	15.5%	2.1%
International Value	3.4%	66	3.7%	0.3%	4.6%	1.3%
International Core	5.4%	55	5.5%	0.1%	6.1%	0.7%
International Growth	7.3%	66	7.8%	0.5%	8.8%	1.5%
Emerging Markets	4.0%	44	3.7%	-0.3%	5.4%	1.4%
Real Estate	8.3%	52	8.3%	0.0%	9.0%	0.7%

Source: Morningstar, Fiducient Advisors Analysis

In the case of Small Cap Growth, the median manager outperformed its index by approximately 60 basis points and the top quartile manager outperformed by 210 basis points. This outperformance supports active management in the asset class. For other asset classes such as High Yield, outperforming the benchmark was extremely difficult as only seven percent of all strategies outperformed. Even selecting a top-decile manager would not have been enough to generate excess return. It is worth noting that not all indices can be efficiently tracked by a passive portfolio. Despite the headwind for active managers in High Yield for example, there are two well-known passive ETFs in the space and both underperformed the index by 1.4 percent and 1.1 percent on an annual basis over the last ten years.

Expanding the analysis further, **Exhibit 4** displays a scatterplot of the benchmark return (on a rolling three-year basis) on the horizontal X-axis and multiple peer group returns on the vertical Y-axis. The diagonal line represents the benchmark return and icons above the line indicate outperformance whereas icons below the line indicate

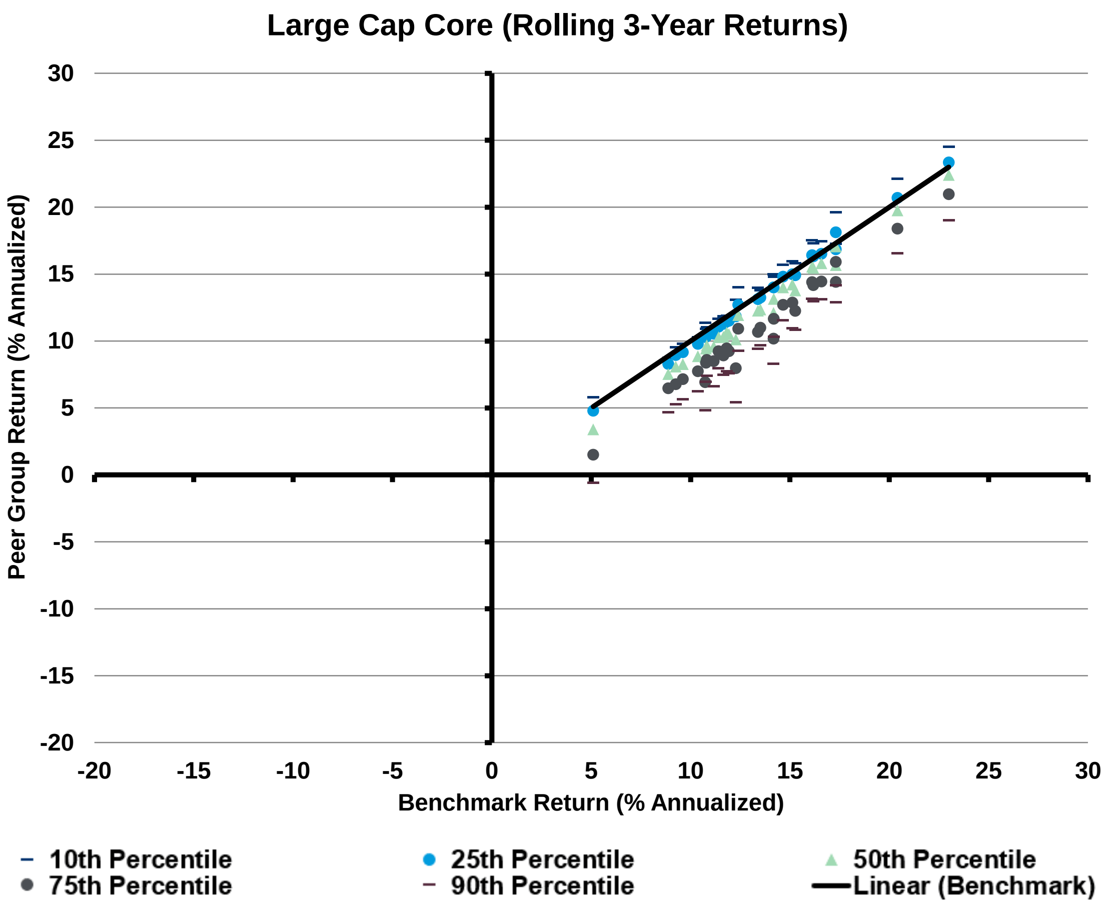
[5] *Indices: Barclays Aggregate Bond, Barclays U.S. Corporate High Yield, Barclays Global Aggregate ex U.S., Russell 1000 Value, S&P 500, Russell 1000 Growth, Russell Mid Cap Value, Russell Mid Cap, Russell Mid Cap Growth, Russell 2000 Value, Russell 2000, Russell 2000 Growth, FTSE NAREIT Equity REITs, MSCI EAFE Value, MSCI EAFE, MSCI EAFE Growth, MSCI Emerging Markets.*

underperformance. The Large Cap Core space shows very strong and consistent absolute returns on a rolling three-year basis and benchmark performance around the top quartile of peers in each instance. It is also noteworthy that for the current ten-year period, every rolling three-year period had positive absolute performance, with the majority of observations being 10 percent annualized returns or greater.

It has been especially difficult for active Large Cap Core managers to outperform the S&P 500 index since the financial crisis.

Exhibit 4

Rolling three-year peer group returns vs. S&P 500

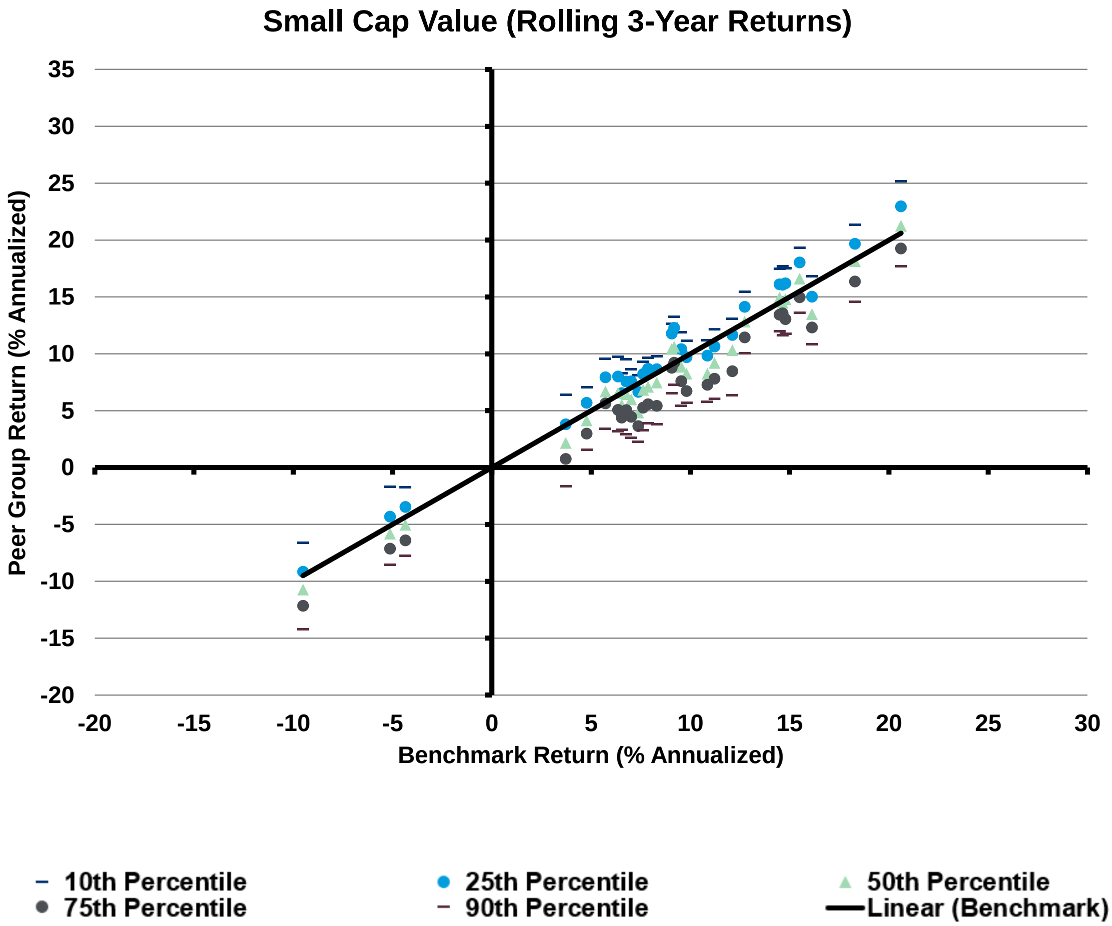


Source: Morningstar, Fiducient Advisors Analysis

This relationship generally held for large cap and mid cap equities regardless of growth, value or core styles. However, **Exhibit 5** shows outperformance of the top quartile far more often across most levels of benchmark returns for Small Cap Value. Since the light blue dots were usually above the line, a top quartile Small Cap Value manager consistently outperformed the benchmark regardless of the level of benchmark return.

Exhibit 5

Rolling three-year peer group returns vs. Russell 2000 Value

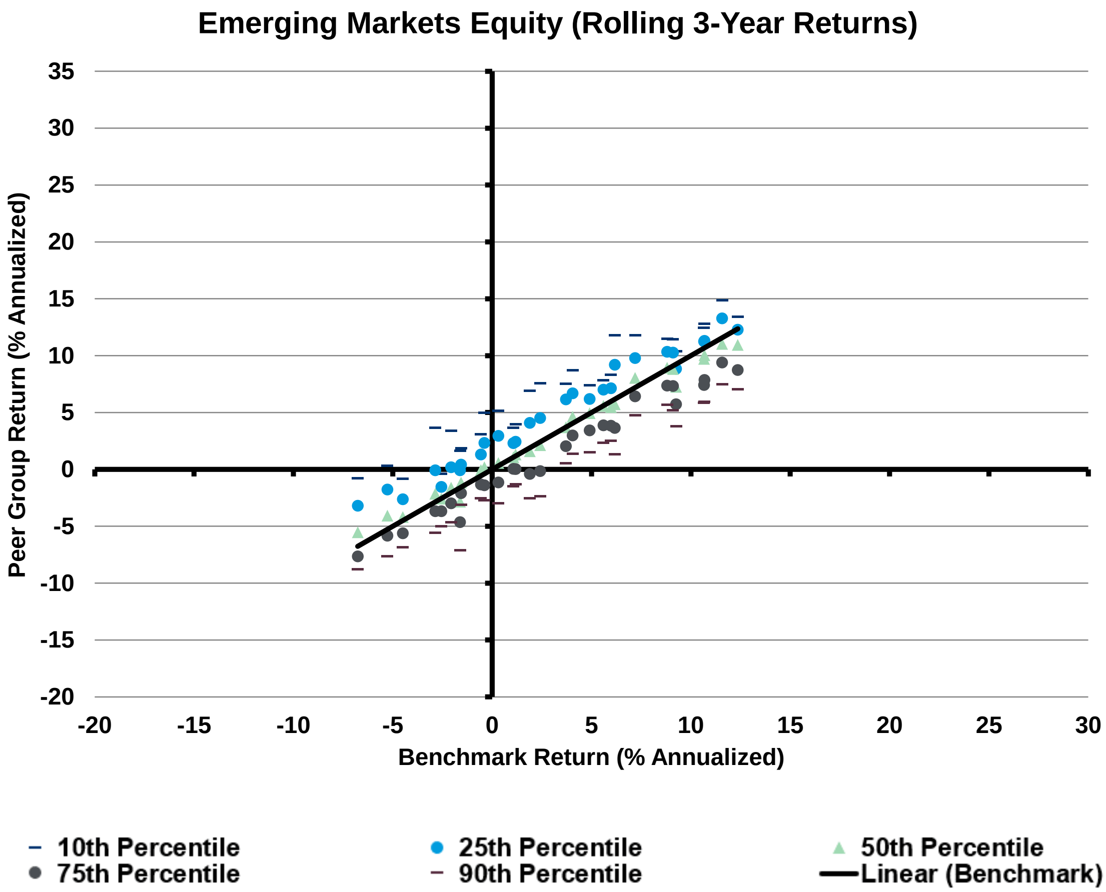


Source: Morningstar, Fiducient Advisors Analysis

The same concept holds true for emerging markets equities to some degree as **Exhibit 6** shows the top quartile of the Emerging Markets peer group outperformed the benchmark for nearly all levels of the benchmark's absolute return.

Exhibit 6

Rolling three-year peer group returns vs. MSCI Emerging Markets

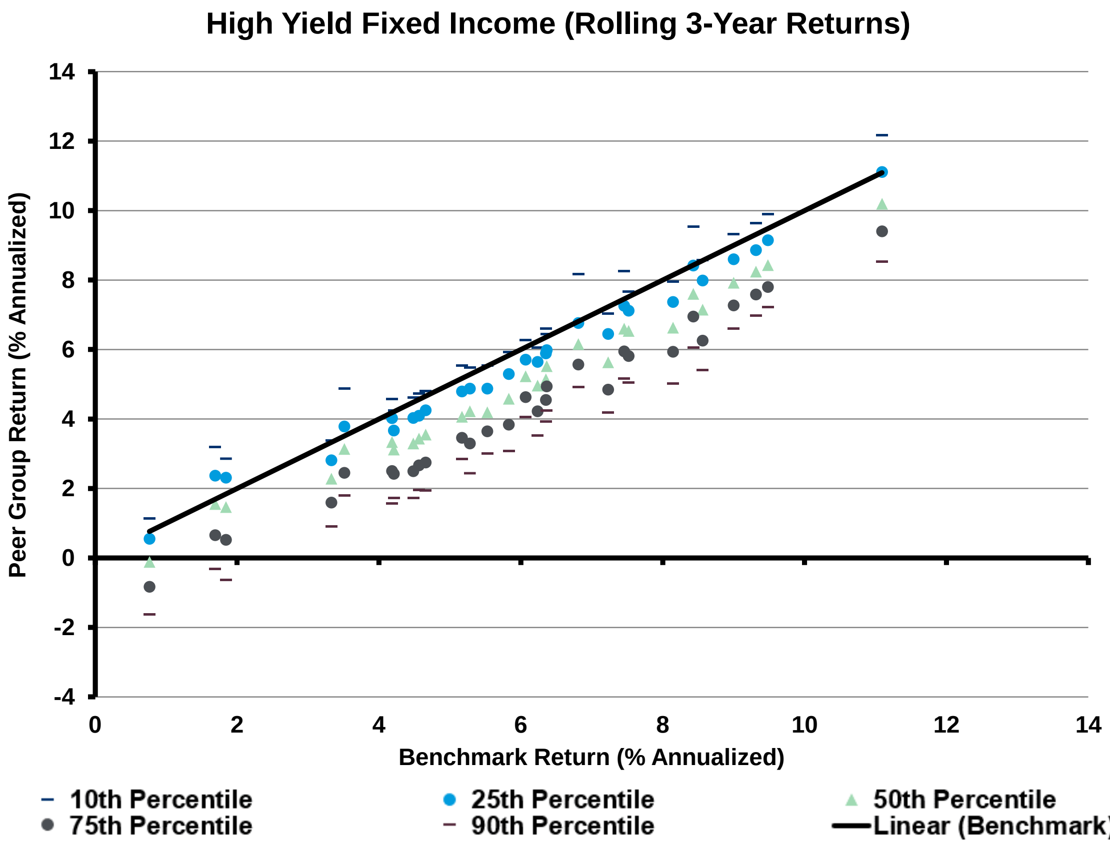


Source: Morningstar, Fiducient Advisors Analysis

High Yield, Mid Cap Core and Real Estate all displayed persistent historical underperformance for the top quartile at various periods and even occasionally show in-line or underperformance of the top decile relative to the benchmark. **Exhibit 7** displays High Yield's results as a prime example of just how difficult it has been for active managers in select asset classes to outperform their benchmarks.

Exhibit 7

Rolling three-year peer group returns vs. Barclays U.S. Corporate High Yield



Source: Morningstar, Fiducient Advisors Analysis

For the remaining asset classes not explored here, please refer to the Appendix for the scatterplots of all 17 asset classes.

Interpreting these results yields an obvious question: *with many active managers seeking to outperform their benchmarks, why do an overwhelming number fail in a particular asset class?* On the equity side, since many benchmarks are market capitalization weighted, the largest companies in each benchmark greatly influence the benchmark's returns. Domestic equity indices have continued to have some very large and concentrated positions and a manager unwilling to hold such concentrated positions will be at a disadvantage if those stocks happen to perform well. As a recent example, the FAANMG names (Facebook, Amazon, Apple, Alphabet [Google], Netflix and Microsoft) continue to represent a large portion of U.S. Large Cap Growth universe. This concentrated group has contributed a majority of the gains of the index in recent years, which we have detailed here[6].

[6] https://www.fiducientadvisors.com/research/is-big-tech-all-you-need

Moreover, active managers generally keep some cash on hand to meet redemptions in their funds, so "cash drag" hurts in momentum-driven markets like the recent domestic equity market run.

Exhibit 8 displays each asset class' rolling three-year batting average over the last decade to measure the relationship between relative performance versus the benchmark and peer group rankings. In the example of High Yield, the top quartile active manager generated an excess return of 0 percent to -2 percent during 86 percent of the 29 three-year periods over the last ten years. Large Cap Core was similar as 76 percent of rolling three-year periods produced an excess return of 0 percent to -2 percent. Both serve as reminders that benchmark outperformance is not always guaranteed for strategies that achieve competitive rankings relative to their peers.

Exhibit 8

Batting averages of rolling three-year periods over the last ten years

	% of Rolling 3-year periods:					
	Below -4% excess return	Between -2% and -4% excess return	Between 0% and -2% excess return	Between 0% and +2% excess return	Between +2% and +4% excess return	Above +4% excess return
Small Cap Value						
25% percentile			21%	62%	17%	
50% percentile		14%	55%	31%		
75% percentile		48%	48%	3%		
Small Cap Core						
25% percentile			24%	69%	7%	
50% percentile		14%	41%	45%		
75% percentile	10%	28%	62%			
Small Cap Growth						
25% percentile			7%	55%	10%	28%
50% percentile			55%	21%	24%	
75% percentile		52%	48%			
International Value						
25% percentile		3%	14%	34%	38%	10%
50% percentile		14%	24%	45%	17%	
75% percentile	10%	7%	55%	28%		
International Core						
25% percentile			24%	45%	31%	
50% percentile		3%	48%	41%	7%	
75% percentile		34%	41%	24%		
International Growth						
25% percentile				66%	28%	7%
50% percentile			59%	34%	7%	
75% percentile		21%	62%	17%		
Emerging Markets						
25% percentile			7%	52%	41%	
50% percentile			52%	48%		
75% percentile		34%	66%			
Real Estate						
25% percentile			48%	38%	14%	
50% percentile			**76%**	21%	3%	
75% percentile			**90%**	10%		

Source: Morningstar, Fiducient Advisors Analysis

Exhibit 8 continued

	% of Rolling 3-year periods:					
	Below -4% excess return	Between -2% and -4% excess return	Between 0% and -2% excess return	Between 0% and +2% excess return	Between +2% and +4% excess return	Above +4% excess return
Intermediate Bond						
25% percentile			14%	**86%**		
50% percentile			**79%**	21%		
75% percentile			**100%**			
High Yield Bond						
25% percentile			**86%**	14%		
50% percentile			**100%**			
75% percentile		14%	**86%**			
International/Global Bond						
25% percentile			17%	69%	14%	
50% percentile			55%	45%		
75% percentile		14%	**83%**	3%		
Large Cap Value						
25% percentile			31%	62%	7%	
50% percentile		3%	69%	28%		
75% percentile		45%	55%			
Large Cap Core						
25% percentile			**76%**	24%		
50% percentile		7%	**93%**			
75% percentile	3%	**83%**	14%			
Large Cap Growth						
25% percentile			45%	55%		
50% percentile		31%	66%	3%		
75% percentile	24%	59%	17%			
Mid Cap Value						
25% percentile			34%	66%		
50% percentile		10%	**86%**	3%		
75% percentile		72%	28%			
Mid Cap Core						
25% percentile			62%	38%		
50% percentile		24%	**76%**			
75% percentile	21%	**79%**				
Mid Cap Growth						
25% percentile			17%	72%	10%	
50% percentile			**100%**			
75% percentile		**90%**	10%			

Source: Morningstar, Fiducient Advisors Analysis

Color Key: Dark Green: >=75%

Light Green: 50-74%

Yellow: 25-49%

Peer Group Rank Required to Match the Benchmark Return

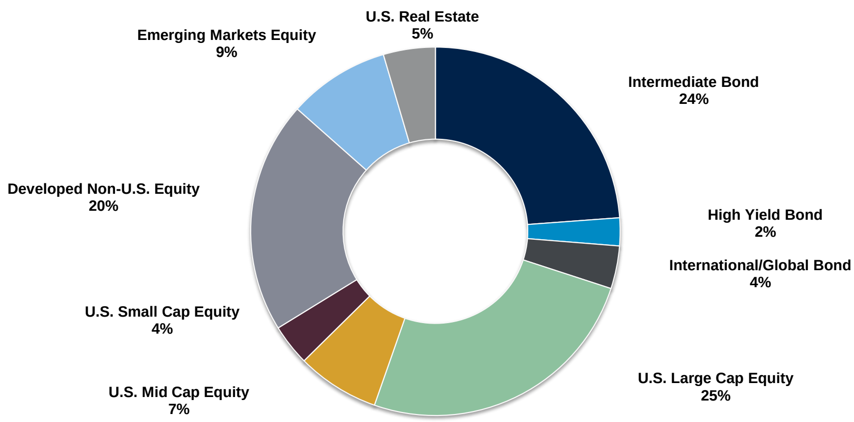
For a hypothetical 70 percent equity and 30 percent fixed income portfolio highlighted in **Exhibit 9**, the required peer group ranking of each of the 17 asset classes to match the weighted index return[7] is the 39th percentile. One can

[7] This analysis does not incorporate rebalancing and does not adjust for survivorship bias.

see in **Exhibit 10** that simply matching the median return in each asset class was not good enough to beat the weighted benchmark return.

Exhibit 9

Hypothetical 70/30 Portfolio



Source: Fiducient Advisors Frontier Engineer®

Exhibit 10

Fund return and excess return by asset class and ranking

Category	Asset Mix	10-Year Index Return	Index Peer Group Rank	Absolute Top Funds		Top Quartile Funds		39th Percentile Funds *(Required to Match Indices)*		Median Funds		Bottom Quartile Funds		Absolute Bottom Funds	
				Return	Excess Return	Return	Excess Return	Return	Excess Return	Return	Excess Return	Return	Excess Return	Return	Excess Return
Intermediate Bond	24%	3.8%	52	4.9%	1.1%	4.2%	0.3%	4.0%	0.2%	3.9%	0.0%	3.5%	-0.3%	1.7%	-2.1%
High Yield Bond	2%	6.8%	9	7.3%	0.5%	6.1%	-0.7%	6.0%	-0.8%	5.8%	-1.0%	5.5%	-1.3%	1.4%	-5.4%
International/Global Bond	4%	2.0%	83	4.9%	2.9%	3.5%	1.5%	3.2%	1.2%	3.1%	1.1%	2.2%	0.2%	-1.2%	-3.2%
Large Cap Value	8%	10.5%	31	12.4%	1.9%	10.7%	0.2%	10.3%	-0.2%	9.9%	-0.6%	8.9%	-1.6%	0.7%	-9.8%
Large Cap Core	8%	13.9%	10	15.0%	1.1%	13.6%	-0.3%	13.0%	-0.8%	12.6%	-1.3%	11.7%	-2.2%	-0.4%	-14.3%
Large Cap Growth	8%	17.2%	18	21.9%	4.7%	16.5%	-0.7%	15.7%	-1.5%	15.3%	-1.9%	13.5%	-3.7%	6.9%	-10.4%
Mid Cap Value	2%	10.5%	12	11.7%	1.2%	10.0%	-0.4%	9.7%	-0.8%	9.3%	-1.2%	8.4%	-2.1%	5.9%	-4.6%
Mid Cap Core	2%	12.4%	13	13.5%	1.1%	11.3%	-1.1%	11.0%	-1.4%	10.4%	-2.0%	9.4%	-3.0%	5.4%	-7.0%
Mid Cap Growth	2%	15.0%	32	20.5%	5.5%	15.3%	0.2%	14.8%	-0.3%	14.1%	-0.9%	12.3%	-2.7%	7.8%	-7.2%
Small Cap Value	1%	8.7%	31	10.5%	1.8%	8.8%	0.2%	8.3%	-0.4%	7.9%	-0.7%	6.8%	-1.8%	4.1%	-4.5%
Small Cap Core	1%	11.2%	20	12.7%	1.5%	11.0%	-0.2%	10.4%	-0.8%	10.0%	-1.2%	9.2%	-2.0%	2.1%	-9.1%
Small Cap Growth	1%	13.5%	57	19.9%	6.5%	15.5%	2.1%	14.6%	1.2%	14.1%	0.6%	12.1%	-1.3%	0.2%	-13.3%
International Value	7%	3.4%	66	6.3%	2.9%	4.6%	1.3%	4.4%	1.0%	3.7%	0.3%	3.0%	-0.3%	-1.9%	-5.3%
International Core	7%	5.4%	55	9.4%	4.0%	6.1%	0.7%	5.8%	0.4%	5.5%	0.1%	4.9%	-0.5%	0.3%	-5.1%
International Growth	7%	7.3%	66	14.3%	7.0%	8.8%	1.5%	8.3%	1.0%	7.8%	0.5%	6.7%	-0.6%	5.1%	-2.2%
Emerging Markets	9%	4.0%	44	7.3%	3.3%	5.4%	1.4%	4.5%	0.5%	3.7%	-0.3%	2.6%	-1.4%	-0.9%	-4.9%
Real Estate	5%	8.3%	52	13.5%	5.2%	9.0%	0.7%	8.5%	0.2%	8.3%	0.0%	7.7%	-0.6%	5.1%	-3.2%
Aggregate Excess Return of Managers					2.80%		0.43%		0.00%		-0.39%		-1.25%		-5.89%

Source: Morningstar, Fiducient Advisors Analysis

In **Exhibit 11**, we calculate a "fee bogey" for active managers (on a weighted basis) by estimating the expense drag of employing all the most competitively priced passive funds for each asset class. The active managers in this example would have to generate approximately 0.72 percent more in annual return to make active management advantageous. Otherwise, an investor would be better off by simply hiring a passive strategy for each portfolio allocation.

Exhibit 11

Difference in fees for an all active vs. all passive portfolio[8]

Category	Allocation	Adjusted Peer Group Median Expense Ratio[5]	Applicable Index Fund Expense Ratio	Δ Expenses
Intermediate Bond	24%	0.48	0.05	0.43
High Yield Bond	2%	0.74	0.13	0.61
International/Global Bond	4%	0.68	0.11	0.57
Large Cap Value	8%	0.76	0.04	0.73
Large Cap Core	8%	0.76	0.02	0.75
Large Cap Growth	8%	0.80	0.04	0.77
Mid Cap Value	2%	0.95	0.05	0.90
Mid Cap Core	2%	0.95	0.03	0.93
Mid Cap Growth	2%	0.89	0.05	0.84
Small Cap Value	1%	1.02	0.05	0.97
Small Cap Core	1%	0.98	0.03	0.96
Small Cap Growth	1%	1.02	0.05	0.97
International Value	7%	0.93	0.11	0.82
International Core	7%	0.90	0.11	0.79
International Growth	7%	0.91	0.11	0.80
Emerging Markets	9%	1.13	0.08	1.06
Real Estate	5%	0.91	0.07	0.84
Total	**100%**			
Weighted Average		**0.79**	**0.06**	**0.72**

Source: Morningstar, Fiducient Advisors Analysis

Passive Fund Options

Based solely on fees, passive strategies have their advantages. However, **Exhibit 12** displays the characteristics of all passively-managed funds with ten-year track records in the same manner as **Exhibit 1** does for actively-managed strategies. If we define success as achieving the top quartile over the last ten years, **Exhibit 12** paints a far less rosy picture for passive investing. For example, there are 12 Intermediate-Term Bond passive funds that have achieved ten-year track records and only one of them finished in the top quartile over the last ten-year period. International Core, Emerging Markets and Real Estate have 15, 4 and 1 passive funds with ten-year track records, respectively, yet

[8] The fees for the "Example Portfolio" are those of our recommended managers in each asset class utilized for a $150 million nonprofit portfolio with a Discretionary mandate. The applicable passive fund expenses are shown as the lowest cost passive option in each applicable asset class.

each failed to have a single passive fund achieve the top quartile as well. Small Cap Value and Small Cap Core had some winning passive funds, but they had slightly higher rates of below median performance than their actively-managed peers. In fact, the only asset class that is the exception is Large Cap Core, which had a median rank achieve the 23rd percentile across 52 observations. This also came with reasonable persistency too as only 11 percent of the total rolling three-year periods for the group was below the median. In retrospect, hiring a low-cost passive strategy in Large Cap Core was a clear winning strategy over the last ten years, but passively-managed strategies in all other asset classes have been significantly less effective to varying degrees. This supports our "pragmatic rather than dogmatic" thesis that the active vs. passive decision ought to be made asset class by asset class.

Exhibit 12

Passive Strategies (Open-Ended Mutual Funds Only)[9]

		Peer Rank Relative to Respective Morningstar Category			% of Rolling 3-Year Periods			
Asset Class	# of Index Funds with 10 Year Track Records	Best 10-Year Peer Rank	Worst 10-Year Peer Rank	Mean 10-Year Peer Rank	% Top Quartile	% Second Quartile	% Third Quartile	% Bottom Quartile
Intermediate Bond	12	5	83	63	9%	22%	48%	22%
High Yield Bond	-	-	-	-	-	-	-	-
International/Global Bond	-	-	-	-	-	-	-	-
Large Cap Value	10	1	99	45	27%	30%	22%	22%
Large Cap Core	52	0	73	23	36%	53%	9%	2%
Large Cap Growth	16	3	95	33	49%	21%	16%	14%
Mid Cap Value	1	76	76	76	0%	14%	48%	38%
Mid Cap Core	16	3	76	28	32%	42%	25%	2%
Mid Cap Growth	3	41	97	77	1%	34%	18%	46%
Small Cap Value	5	6	98	58	24%	27%	25%	24%
Small Cap Core	18	7	88	30	28%	38%	24%	11%
Small Cap Growth	3	54	94	78	6%	39%	34%	21%
International Value	1	27	27	27	48%	41%	10%	0%
International Core	15	35	84	60	3%	43%	46%	8%
International Growth	-	-	-	-	-	-	-	-
Emerging Markets	4	56	95	69	6%	27%	48%	19%
Real Estate	1	38	38	38	14%	48%	38%	0%

Source: Morningstar, Fiducient Advisors Analysis

When further analyzing the performance of passively-managed strategies, we would expect the gross of fee return of a strategy to exactly match the underlying index and therefore, the fund should underperform the index on a net basis solely by its fee. **Exhibit 13** takes all open-ended passively-managed mutual funds tracking mainstream benchmarks

[9] The underlying portfolios included in this exhibit are open-ended mutual funds with ten-year track records that are classified as passive strategies based on Morningstar's definition.

(e.g. Standard & Poor's, Bloomberg Barclays, Russell, MSCI, CRSP, FTSE, etc.) and calculates the excess return over the last ten years of each strategy over our preferred benchmark in each space[10]. If we then back out each fund's expense ratio, we can determine which asset classes performed in line with the theoretical expectation of passively-managed funds. In some examples such as Large Cap Core equities and intermediate bonds, the average passive fund underperformed its benchmark by almost exactly its fee. However, High Yield was the opposite where the three applicable passive strategies underperformed their stated benchmarks by more than 0.85 percent after deducting fees, which is evidence of a difficult to replicate index. Further, Emerging Markets underperformed by far more than the average fee, which ought to underwhelm investors favoring passive strategies across the board.

Exhibit 13

Passive Performance[11]

Category	Number of Index Funds with 10-Year Track Records	Average Index Fund Fee Last Ten Years	Average Excess Return Last 10 Years	Average Excess Return less 10 Year Avg Fee
Short Term Bond	2	0.12%	0.97%	1.09%
Intermediate Bond	12	0.25%	-0.17%	0.08%
TIPS	2	0.16%	-0.65%	-0.49%
Intermediate Muni	1	0.57%	1.02%	1.59%
Long Term Bond	2	0.06%	0.05%	0.12%
High Yield Bond	3	0.47%	-1.31%	-0.85%
Large Cap Value	10	0.77%	-0.78%	0.00%
Large Cap Core	52	0.30%	-0.30%	0.00%
Large Cap Growth	16	0.86%	-0.52%	0.34%
Mid Cap Value	1	1.77%	-2.19%	-0.42%
Mid Cap Core	16	0.46%	-0.94%	-0.48%
Mid Cap Growth	3	1.25%	-3.59%	-2.34%
Small Cap Value	5	1.10%	-1.46%	-0.35%
Small Cap Core	18	0.53%	-0.39%	0.14%
Small Cap Growth	3	1.17%	-1.70%	-0.53%
International Value	1	0.31%	1.18%	1.49%
International Core	15	0.34%	-0.14%	0.20%
International Small Cap	2	0.31%	-2.49%	-2.19%
Global Equity	2	0.52%	-0.55%	-0.03%
Emerging Markets	4	0.35%	-1.33%	-0.99%
Real Estate	1	0.25%	0.23%	0.48%
Global Real Estate	1	0.53%	-1.44%	-0.92%
Commodities	2	1.13%	-0.85%	0.28%
Total / Average	**174**	**0.61%**	**-0.83%**	**-0.22%**

Source: Morningstar, Fiducient Advisors Analysis

[10] Since no open-ended mutual funds exist for Corporate High Yield, the data above reference three well-known ETFs in the space.
[11] Open-ended mutual funds that Morningstar classified as passively managed were included in the analysis, as well as the three previously mentioned Corporate High Yield ETFs. Given the theoretical construct that a passively-managed fund ought to underperform its benchmark by its fees, we calculate each fund's excess return over the last ten years relative to our preferred benchmark for the asset class and subtract the expense ratio to determine whether a passive strategy achieved its theoretical expectation.

Conclusion

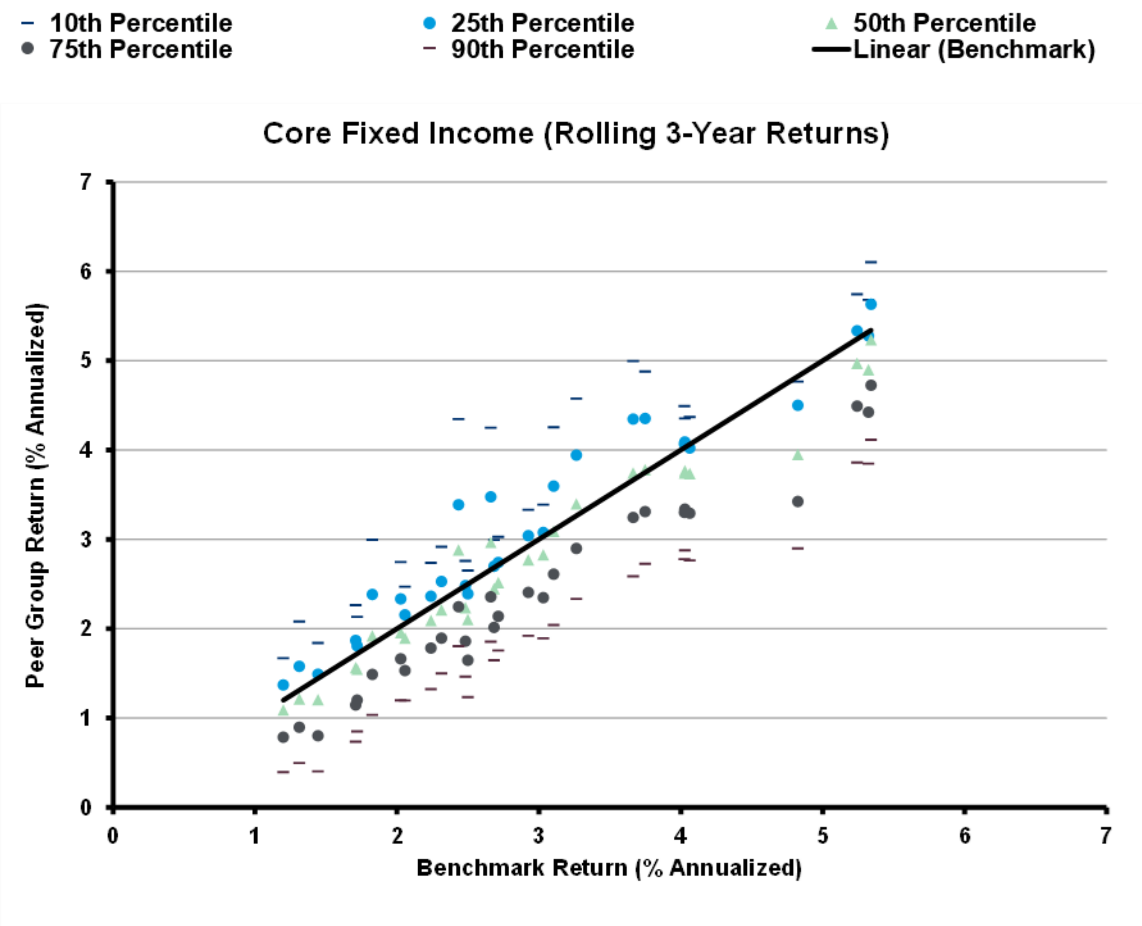
Regardless of whether an active or passive strategy is selected, an investor should understand that poor results are not an if, but rather a when. Performance lulls are inevitable. Patience will eventually be tested whether an active or passive strategy is employed. Simply choosing a passive strategy does not insulate from poor peer group rankings and might even guarantee exclusion from top quartile performance over longer periods. In due course, great long-term performing managers will fall to the bottom half of peer groups over multiple three- and five-year periods. To generate strong long-term results, investors must stay invested through the lulls. Moving to a passively managed strategy during difficult periods often does not work either and switching between the two based on trailing returns can be counterproductive. No matter what path an investor takes, patience continues to be a prerequisite for success.

For more information, please contact any of the professionals at Fiducient Advisors.

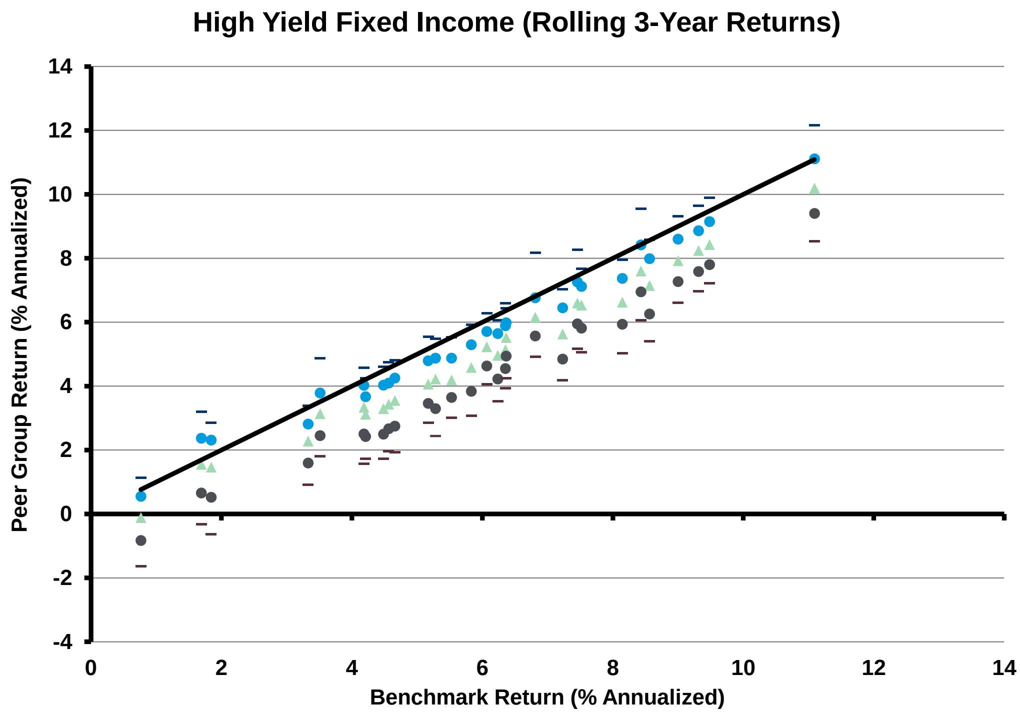
Appendix

Rolling three-year percentile ranks for all 17 asset classes[5]

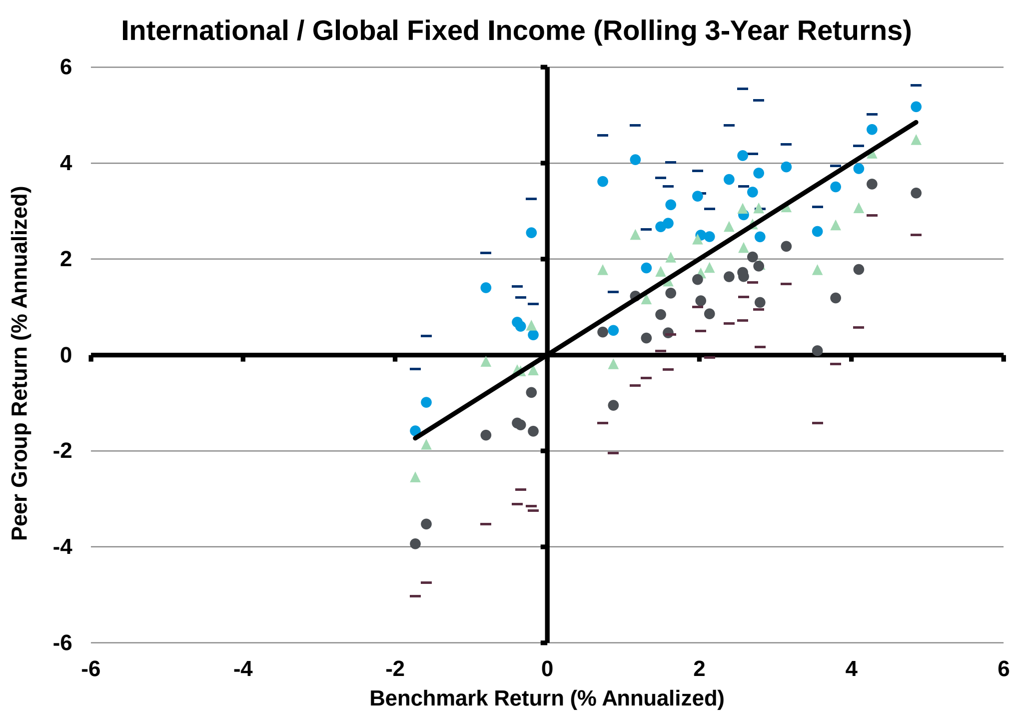
(10 years ending December 31, 2020)



Source: Morningstar, Fiducient Advisors Analysis



Source: Morningstar, Fiducient Advisors Analysis



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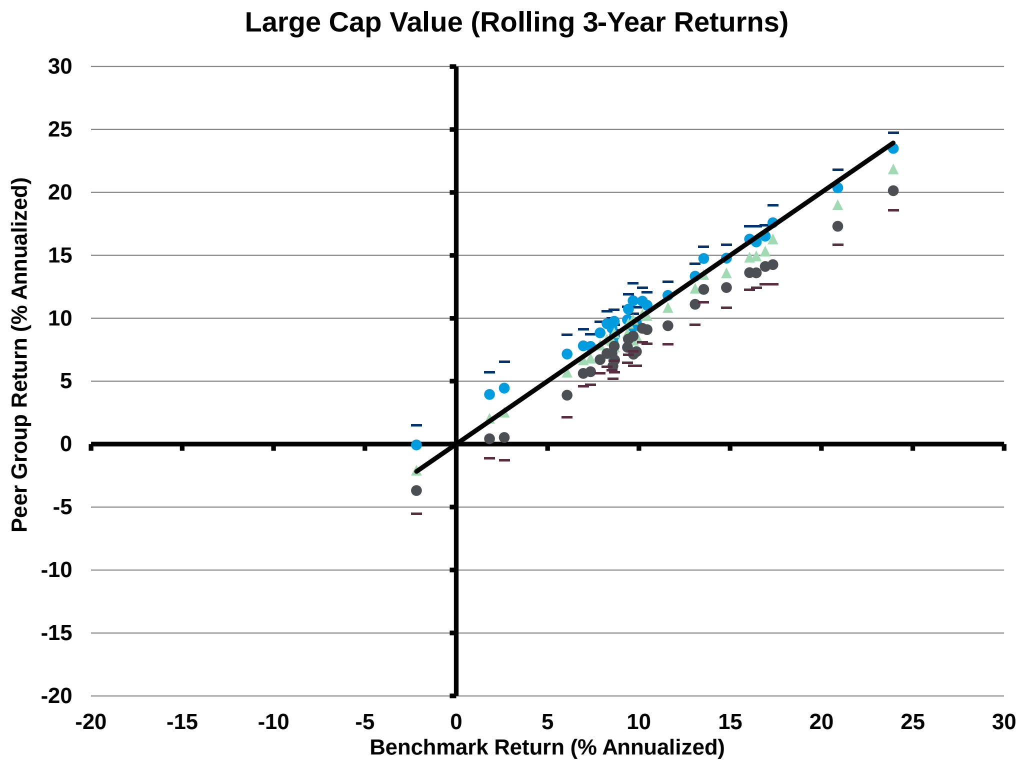

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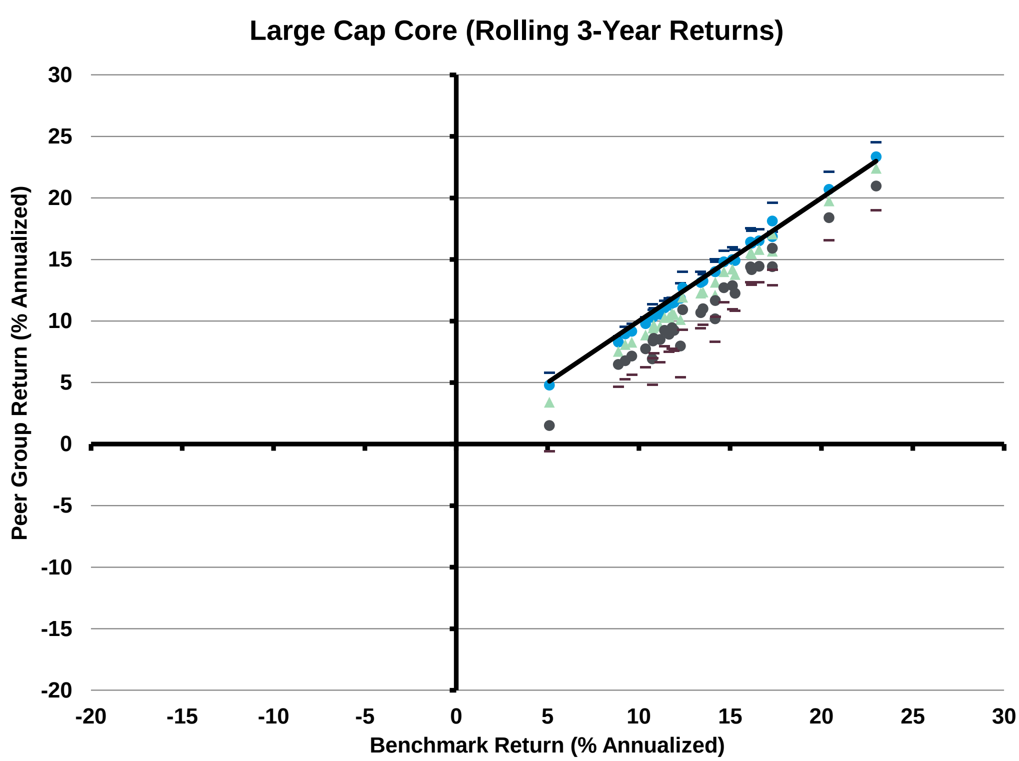

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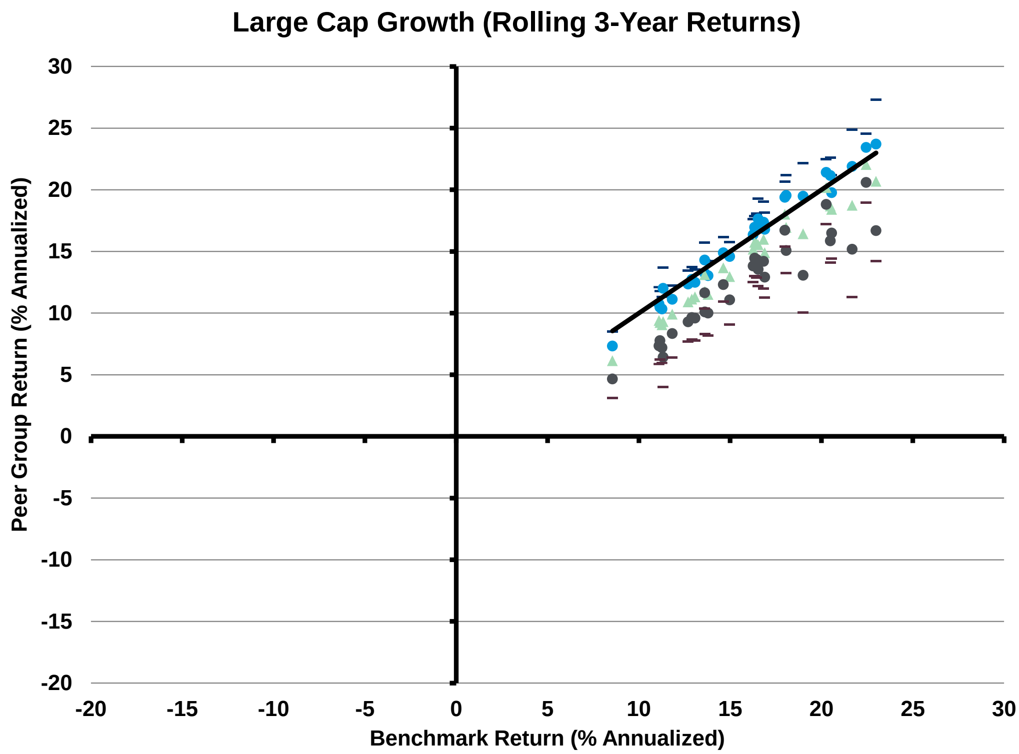

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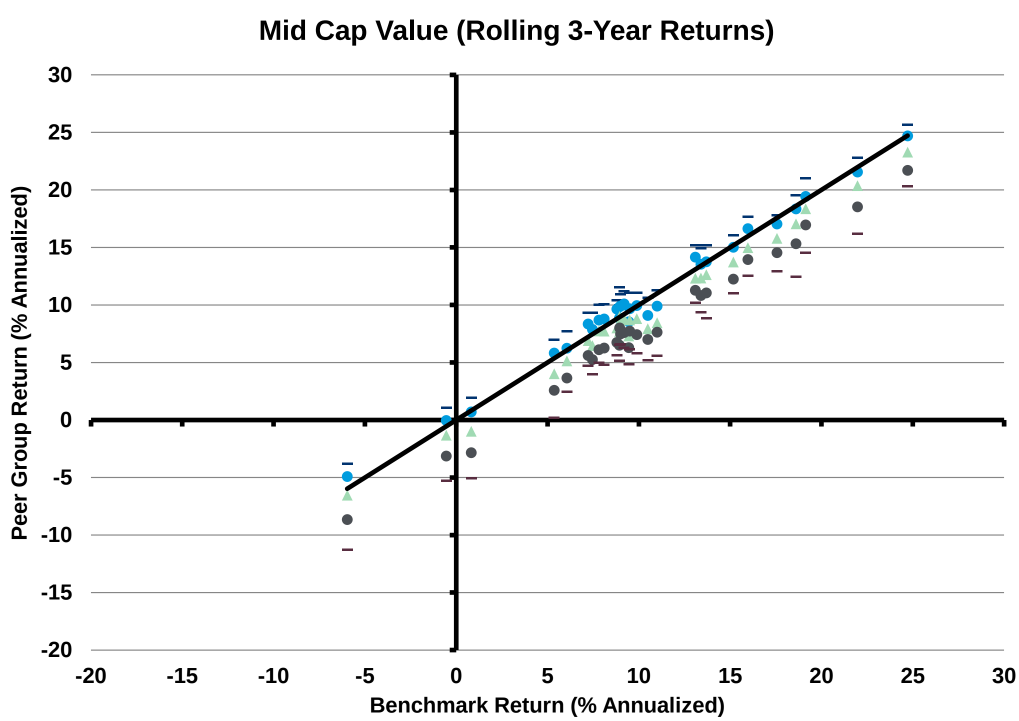
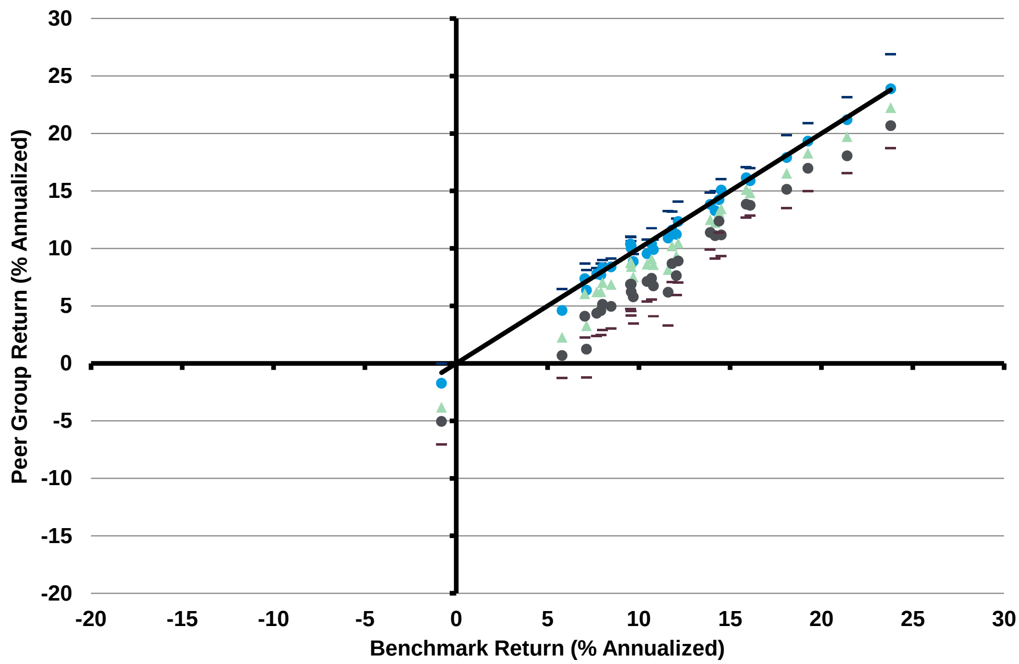


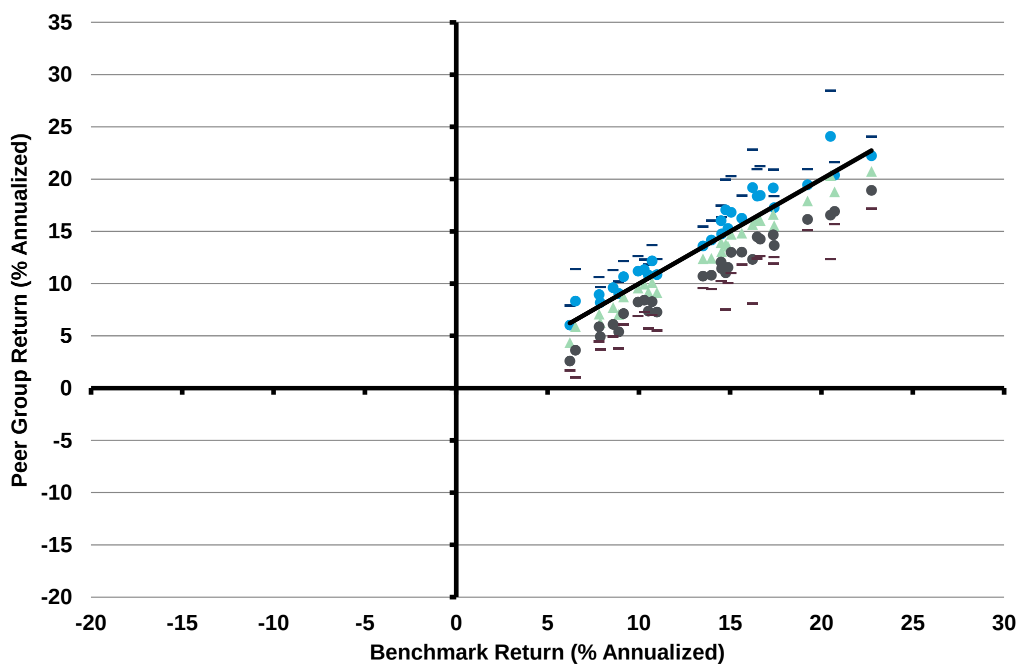
Source: Morningstar, Fiducient Advisors Analysis

Mid Cap Core (Rolling 3-Year Returns)



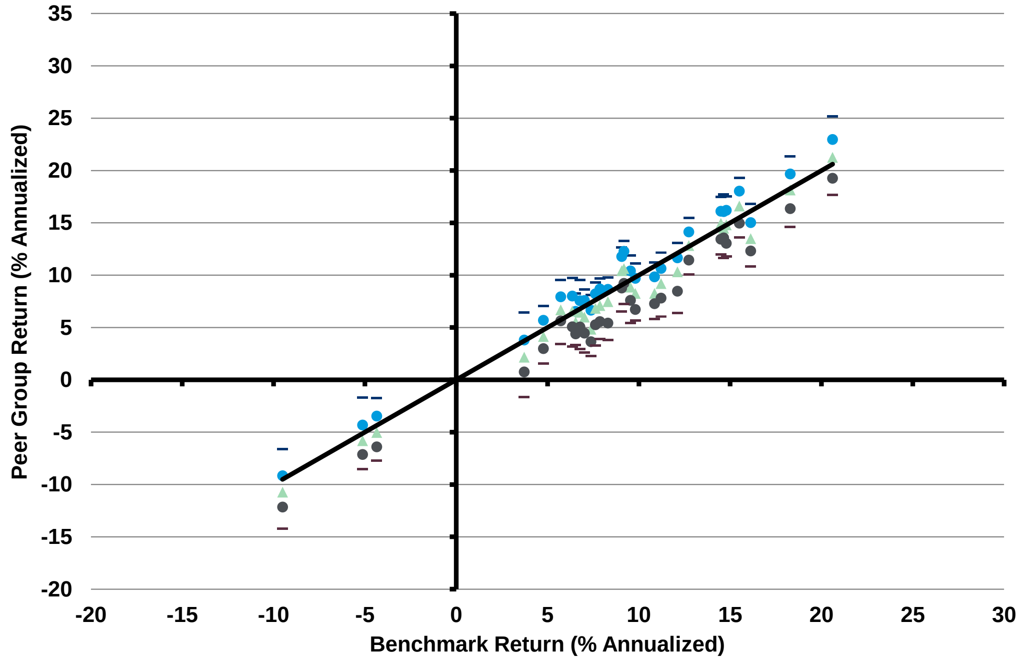
Source: Morningstar, Fiducient Advisors Analysis

Mid Cap Growth (Rolling 3-Year Returns)



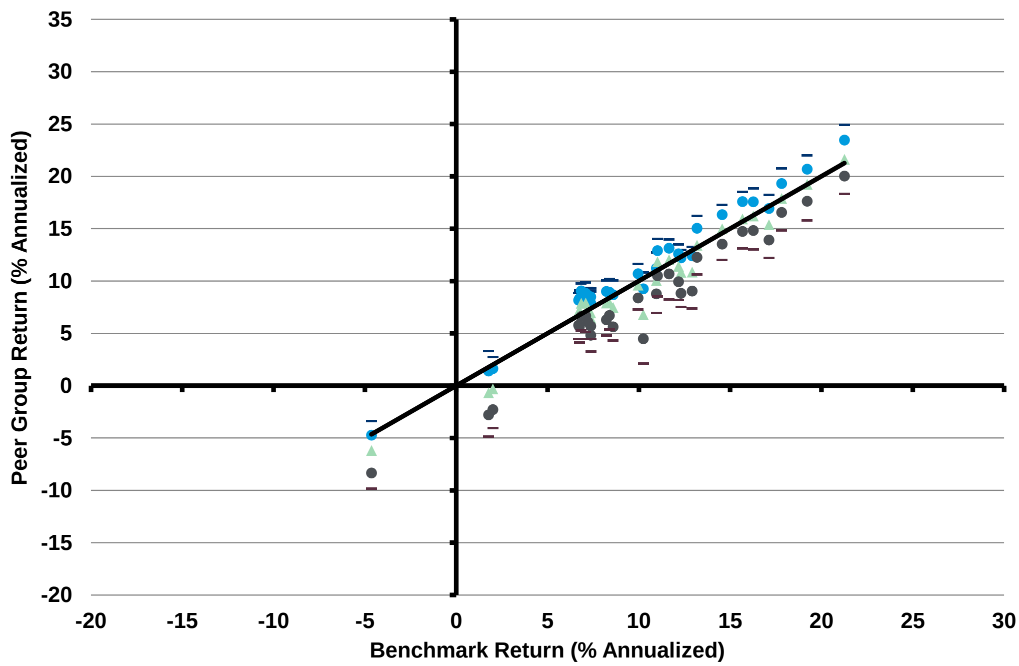
Source: Morningstar, Fiducient Advisors Analysis

Small Cap Value (Rolling 3-Year Returns)



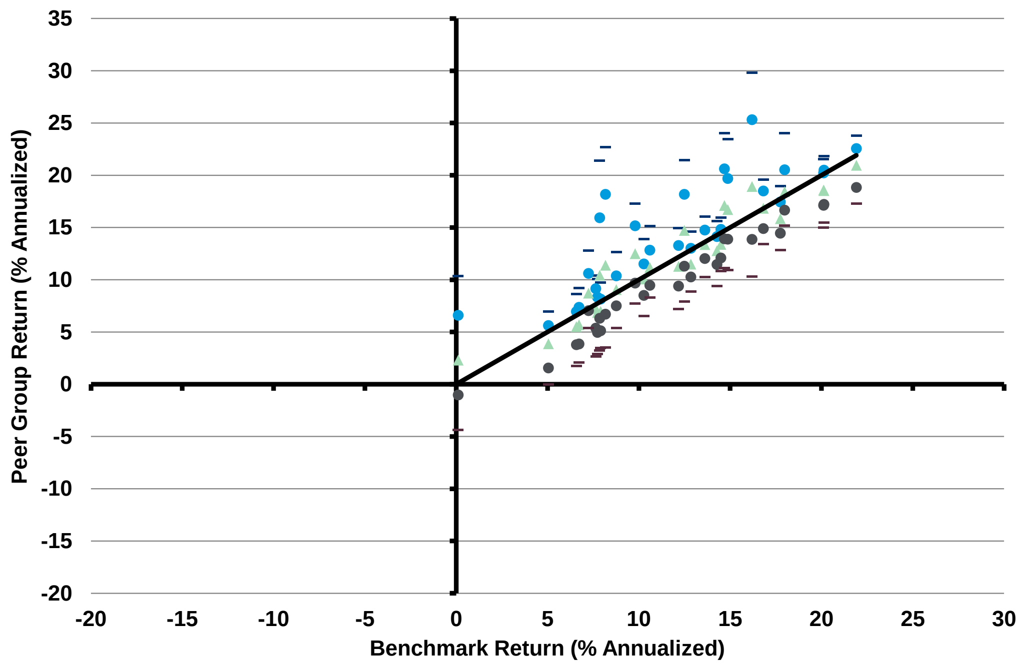
Source: Morningstar, Fiducient Advisors Analysis

Small Cap Core (Rolling 3-Year Returns)



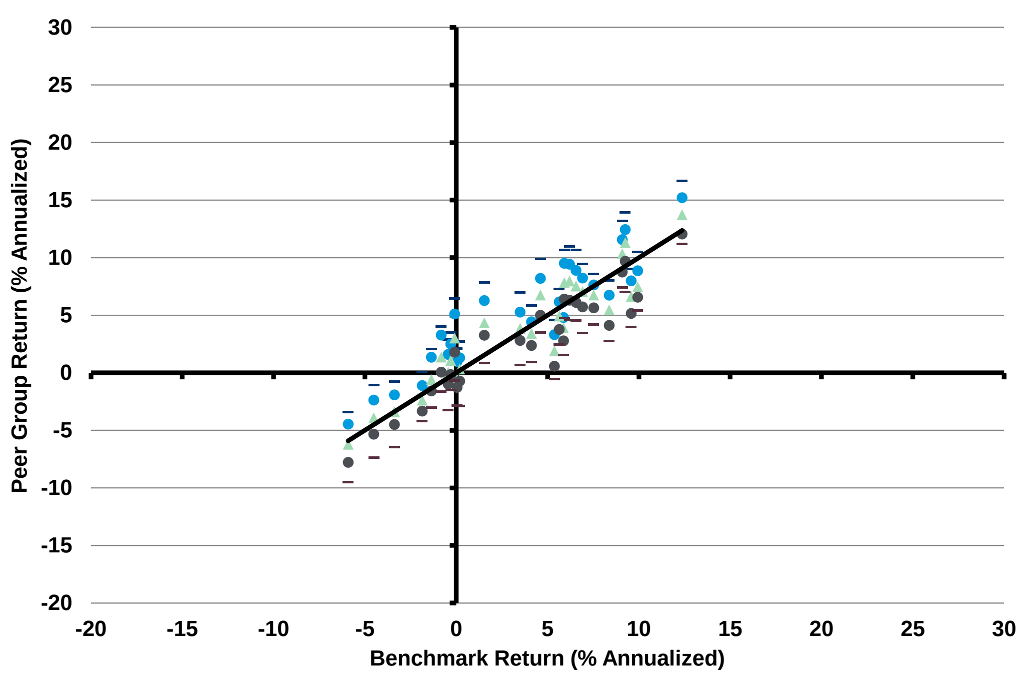
Source: Morningstar, Fiducient Advisors Analysis

Small Cap Growth (Rolling 3-Year Returns)



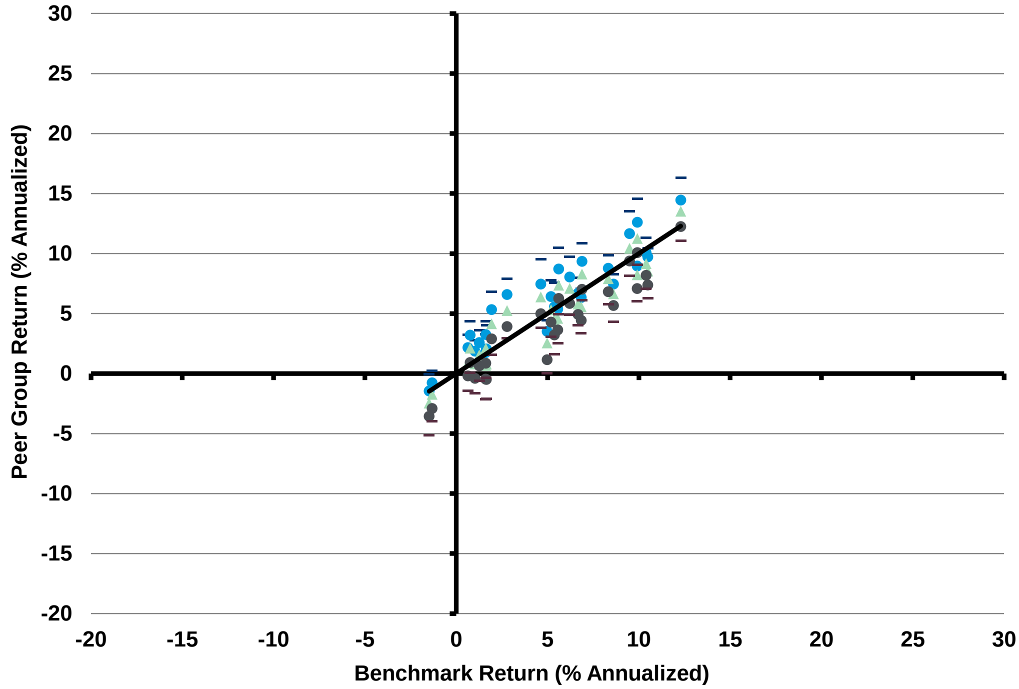
Source: Morningstar, Fiducient Advisors Analysis

International Large Cap Value (Rolling 3-Year Returns)



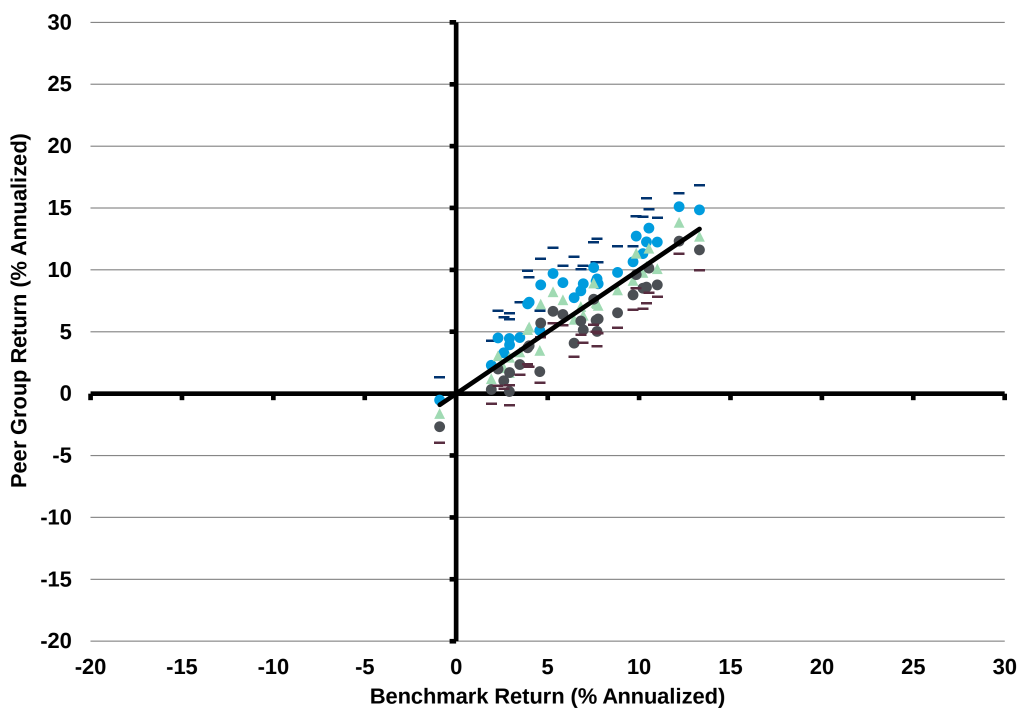
Source: Morningstar, Fiducient Advisors Analysis

International Large Cap Core (Rolling 3-Year Returns)



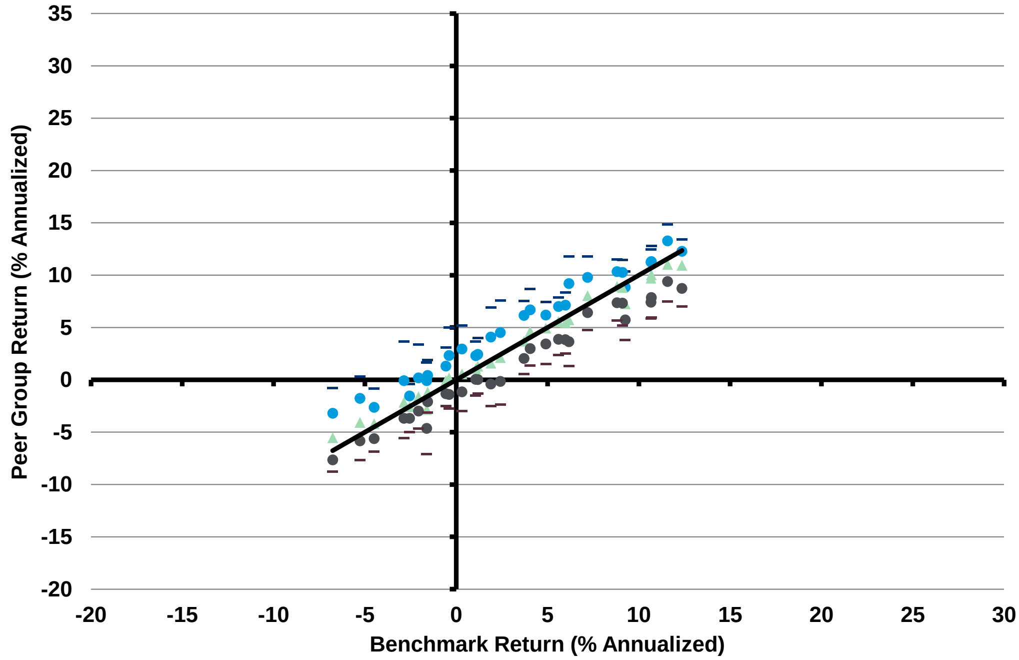
Source: Morningstar, Fiducient Advisors Analysis

International Large Cap Growth (Rolling 3-Year Returns)



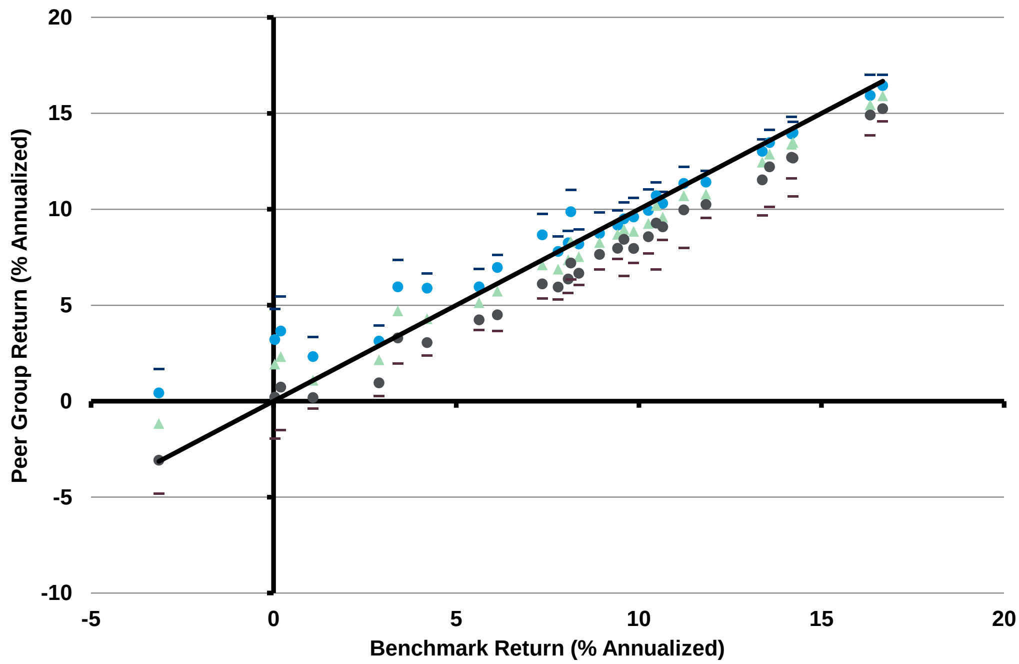
Source: Morningstar, Fiducient Advisors Analysis

Emerging Markets Equity (Rolling 3-Year Returns)



Source: Morningstar, Fiducient Advisors Analysis

Domestic Real Estate (Rolling 3-Year Returns)



Source: Morningstar, Fiducient Advisors Analysis

About the Authors

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Anthony joined Fiducient Advisors in 2011. Anthony directs the firm's Hedge Fund research effort and chairs the firm's Capital Markets Team. He is a voting member of the firm's Investment Committee and a member of the firm's Discretionary Committee, Research Forum and Global Hedge Fund Strategies Group. Prior to joining the firm, Anthony held various roles at National City, Conversus Asset Management and William Blair & Company. Anthony received a BA in Finance from the Eli Broad College of Business at Michigan State University and an MBA from the University of Chicago Booth School of Business with concentrations in Analytic Finance, Economics & Entrepreneurship. He is a CFA® charterholder and member of the CFA Society Chicago and CFA Institute. Anthony is actively involved with YearUp, a nonprofit providing urban young adults with the skills, experience and support to pursue professional careers and higher education. He is also on the Advisory Board for the Michigan State University Financial Markets Institute and serves as Midwest Regional Director of the Hedge Fund Association. In his free time, Anthony enjoys playing guitar, golf, running after his two young sons and all things Michigan State Spartans.

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Matt joined Fiducient Advisors in 2001. As Fiducient Advisors' Chief Investment Officer, Matt directs the firm's capital markets, investment strategy, asset allocation modeling and alternative investments efforts. He also advises a number of the firm's corporate and nonprofit clients. Matt is the Chair of the firm's Research Forum and a voting member of the firm's Investment Committee. He is also a member of the firm's Discretionary Committee and Capital Markets Team. Matt has co-authored two books, including Nonprofit Asset Management (John Wiley & Sons), which was published in 2012 and The Practical Guide to Managing Nonprofit Assets (John Wiley & Sons), published in 2005. Matt is a CFA® charterholder and member of the CFA Society Chicago and a Chartered Alternative Investment Analyst (CAIA℠). Matt received a BA in Economics from Northwestern University, where he also played on the 1995 and 1996 Big Ten championship football teams. Matt now leads an easier lifestyle chasing after his two young children.