

Can Active Management Outperform a Benchmark: Let's Stop the Madness - The Benchmark is an Unattractive Investment

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Research tends to treat investable benchmarks as investment options, but tends not to subject them to the same evaluative criteria that other investment options are subject to. This paper takes the S&P 500 and treats it as an investment fund for the purpose of evaluation based on annual quartile rank over 11 years (2001 – 2011). The index fares poorly. Even after imputing a 60 bps fee on the returns of the active managers there is no discernible change in how the S&P 500 ranks in annual quartile. The conclusion is that the index is not a desirable investment option.

INTRODUCTION AND LITERATURE REVIEW

There are recent papers that deal with the issue of whether active management can outperform a benchmark, with no conclusive results. This is an interesting area because investors have long said that active management cannot beat a relevant benchmark, whereas active managers say they can and do. In this context I use the term “benchmark” and “index” interchangeably and synonymously.

The papers are a developing story, where at each turn a new conclusion is reached. The papers (as well as this one) deal with a common data set. This data set comprises 1,551 institutional-quality funds (those having at least \$1 billion in assets under management) spread across 9 strategies¹ over 11 years (2001 – 2011). The distribution across the strategies is shown in Figure 1.

FIGURE 1
SAMPLE SIZE BY STRATEGY

	Large Cap			Medium Cap			Small Cap		
	<u>Core</u>	<u>Growth</u>	<u>Value</u>	<u>Core</u>	<u>Growth</u>	<u>Value</u>	<u>Core</u>	<u>Growth</u>	<u>Value</u>
Total sample size	258	235	285	67	129	128	118	148	183

¹ PSN Monitor database

The first paper looked at whether active managers could outperform the relevant benchmark on an annual basis. The paper found that managers failed significantly. Over the 11 years, only 2 managers beat the benchmark each year. This is shown in Figure 2.

FIGURE 2
MANAGERS BEATING THE INDEX ALL 11 YEARS

	Large Cap			Medium Cap			Small Cap		
	<u>Core</u>	<u>Growth</u>	<u>Value</u>	<u>Core</u>	<u>Growth</u>	<u>Value</u>	<u>Core</u>	<u>Growth</u>	<u>Value</u>
Number with 11 years of history	152	155	182	34	78	74	65	101	123
Number beating the index all 11 years	2	0	0	0	0	0	0	0	0

In total there were 964 managers that had 11 years of history in the database. Of these, only 2 beat the benchmark each year, providing support for the investor view that active management fails to be at a relevant benchmark². The difference between the total number of managers represented in the data set (1,551) and the 964 managers that had 11 years of history are the number of managers who are in the data set but whose fund launched after 2001.

Using a cutoff of a minimum of 6 years of history, there were 6 managers who beat the benchmark each year for as long as they had history in the data set (see Figure 3³). This added 386 managers to the 964, and 4 managers who beat the benchmark each year, bringing the totals to 6 funds that beat the index each year out of 1,350.

² “The Failure of Equity Managers to Beat Their Benchmark: Lord, is it I (or is it the Benchmark)?” Haber, Jeffrey, *Journal of International Business Management & Research – JIBMR*, Volume 4, Issue 11 (Spring 2013).

³ Ibid.

FIGURE 3
MANAGERS BEATING THE INDEX IN 10, 9, 8, 7, 6 CONSECUTIVE YEARS

	<u>Large Cap</u>			<u>Medium Cap</u>			<u>Small Cap</u>		
	<u>Core</u>	<u>Growth</u>	<u>Value</u>	<u>Core</u>	<u>Growth</u>	<u>Value</u>	<u>Core</u>	<u>Growth</u>	<u>Value</u>
<u>10 Years</u> Number with 10 years of history Number beating the index all 10 years	20 0	8 0	12 0	3 0	4 0	3 0	9 0	3 0	5 0
<u>9 Years</u> Number with 9 years of history Number beating the index all 9 years	13 0	10 0	15 0	4 0	6 0	11 0	7 0	4 0	12 0
<u>8 Years</u> Number with 8 years of history Number beating the index all 8 years	8 0	10 0	22 0	0 0	10 1	6 0	4 0	2 0	10 0
<u>7 Years</u> Number with 7 years of history Number beating the index all 7 years	13 0	11 1	11 0	6 0	5 0	4 0	7 1	8 0	4 0
<u>6 Years</u> Number with 6 years of history Number beating the index all 6 years	16 0	12 0	12 0	6 0	15 0	8 1	8 0	12 0	7 0

The paper went on to consider the concept that beating a benchmark on an annual basis might not be the best test of the success of a particular investment thesis. Wouldn't an investor care more about cumulative returns? Hypothetically, a fund that failed to be beat the benchmark in any particular year still might have had "success," depending on how much they exceeded the benchmark each year versus how much they failed to exceed in a particular year.

Consider the following hypothetical annual returns of a fund (Fund X) and the relevant benchmark:

<u>Year</u>	<u>Fund X</u>	<u>Benchmark</u>
2011	65%	11%
2010	28%	14%
2009	17%	2%
2008	21%	1%
2007	14%	9%
2006	11%	8%
2005	21%	10%
2004	45%	8%
2003	21%	7%
2002	16%	6%
2001	2%	3%

I propose that most investors would be quite happy with the performance of Fund X versus the benchmark, but that same performance would be considered a “failure” since it did not outperform the benchmark in every year. Perhaps a more reasoned way of considering manager performance would be to compare cumulative returns against the cumulative returns of the benchmark.

So the next step was to look at cumulative returns. Using the funds that reported 11 years of history it looked like a substantial number exceeded the benchmark (see Figure 4⁴).

**FIGURE 4
MANAGERS THAT PROVIDED A COMPOUNDED RETURN GREATER THAN THE INDEX**

	<u>Large Cap</u>			<u>Medium Cap</u>			<u>Small Cap</u>		
	<u>Core</u>	<u>Growth</u>	<u>Value</u>	<u>Core</u>	<u>Growth</u>	<u>Value</u>	<u>Core</u>	<u>Growth</u>	<u>Value</u>
Total number of managers	152	155	182	34	78	74	65	101	123
Number of managers exceeding the index	128	121	145	27	54	57	61	80	111
Percentage	84%	78%	80%	79%	69%	77%	94%	79%	90%
Number of managers not exceeding the index	24	34	37	7	24	17	4	21	12
Percentage	16%	22%	20%	21%	31%	23%	6%	21%	10%

⁴ Ibid.

Now this was a game-changer. Clearly this provides strong evidence of the manager's claims that they can and do outperform a relevant benchmark. Enter the next paper in the series. The second paper⁵ considered that investors had the information above, namely that on a cumulative basis managers do seem to outperform the benchmark. Yet investors persist in the claim that managers fail to do exactly what it looks like they have succeeded in doing. Something seemed to be missing.

Perhaps timing was the issue – a strong, cumulative return could be heavily influenced by the presence of one massive year of outperformance. If the investor was not in the fund during that spectacular year (or had exited the fund prior to that year), then their experience would not reflect the cumulative return. So the paper looked at the cumulative return based on entry year. On this basis it was clear that experience depended on when you became an investor in the fund (see Figure 5⁶).

FIGURE 5
SUCCESS RATE WITH VARYING FUND ENTRY DATES

	Year of entry into the fund:									
	2009	2008	2007	2006	2005	2004	2003	2002	2001	
Number of funds beating index	63	95	107	102	114	120	116	127	128	
Number of funds not beating index	89	57	45	50	38	32	36	25	24	
Success rate	41%	63%	70%	67%	75%	79%	76%	84%	84%	
Failure rate	59%	38%	30%	33%	25%	21%	24%	16%	16%	

Now it became clearer that when you entered the fund did have an impact on what your experience was going to be. The later you entered the fund, the lower the success rate (hence the higher the failure rate).

THEORY AND SET-UP

With the first two papers as the backdrop, this paper looks at the issue a little differently. All prior research considers the benchmark, usually in the form of an investable index, as a true investment alternative. In doing so, however, the prior research has not treated the index as an investment alternative subject to the same evaluative criteria as potential funds are subject.

This paper will evaluate an index as a potential investment for the purpose of coming to a conclusion as to whether any investor would actually invest in it. This paper uses the Large Cap Core strategy, which is comprised of 258 funds. The index (the S&P 500) will be treated as a fund, bringing the total population to 259 funds. The funds will then be ranked into quartile order for each year.

The first iteration will use the returns from the data set, which are gross of fees. A further iteration will impute a fee to arrive a net of fee return.

⁵ “Resolving the Dichotomy Between Investors and Managers About Whether Active Management Beats the Index,” *Journal of Business and Economics*, Volume 4, Number 10, October 2013, pp 1033-1037

⁶ *Ibid.*

The Desirability of the Index as an Investment

Managers and their funds are often ranked by quartile. Treating the S&P 500 as an investment fund and ranking the funds in the data set according to quartile order gives the S&P 500 the following quartile ranks (Figure 6):

**FIGURE 6
S&P 500 INDEX AGAINST LARGE CAP CORE MANAGERS
INSTITUTIONAL QUALITY (> \$1 BILLION AUM)
S&P 500 QUARTILE, WHERE MANAGERS ARE GROSS OF FEES**

<u>2011</u>	<u>2010</u>	<u>2009</u>	<u>2008</u>	<u>2007</u>	<u>2006</u>	<u>2005</u>	<u>2004</u>	<u>2003</u>	<u>2002</u>	<u>2001</u>
2	2	2	3	3	3	4	3	3	3	3

The question is whether an investor would find the S&P 500 an attractive investment based on quartile sorting. For the first eight years the index was a consistent third quartile fund, and only in the last three years did it break into the second quartile. See Figure 7 for a listing of all the Large Cap Core funds that had 11 years of history. They are sorted based on average quartile ranking (ascending order). To make it easier to find the S&P 500 I have placed it in bold and boxed it.

**FIGURE 7
S&P 500 INDEX AGAINST LARGE CAP CORE MANAGERS
INSTITUTIONAL QUALITY (> \$1 BILLION AUM)**

<u>2011</u>	<u>2010</u>	<u>2009</u>	<u>2008</u>	<u>2007</u>	<u>2006</u>	<u>2005</u>	<u>2004</u>	<u>2003</u>	<u>2002</u>	<u>2001</u>
4	1	1	1	2	1	1	1	1	1	1
2	1	1	2	2	1	2	1	1	2	2
2	4	2	1	4	1	1	1	1	1	1
3	1	2	3	2	3	1	1	1	1	1
3	1	3	3	2	1	2	1	1	1	1
1	2	4	2	1	4	1	1	1	1	2
3	1	4	1	2	1	1	1	2	1	3
1	2	4	3	1	3	1	1	2	2	1
2	3	1	3	1	4	1	1	2	2	1
2	1	3	1	2	4	2	2	2	1	1
1	3	4	1	2	1	3	2	2	2	1
1	3	3	1	2	2	2	2	2	2	2
2	1	4	2	3	3	1	2	1	2	1
2	3	2	2	4	1	3	1	2	1	1
2	3	3	1	2	1	3	2	3	1	1
3	2	2	1	3	1	4	3	1	1	1
4	3	1	1	1	2	3	1	1	2	3
1	2	3	1	4	1	4	2	3	1	1
1	4	3	4	1	4	1	1	1	2	1
2	4	2	1	4	2	3	1	1	1	2
4	1	4	4	1	4	1	1	1	1	1
1	4	4	1	3	1	3	1	2	1	3

1	4	1	4	3	3	1	1	1	1	4
1	4	3	3	4	1	2	2	1	2	1
1	2	3	3	2	3	2	1	3	2	2
4	3	1	4	4	3	1	1	1	1	1
1	4	1	3	4	2	3	1	2	3	1
1	1	2	2	4	2	2	2	3	2	4
1	2	4	2	4	3	2	1	1	2	3
2	2	4	2	4	1	3	2	1	2	2
2	3	1	1	4	4	2	1	4	1	2
2	1	4	2	1	2	1	3	4	2	3
3	4	4	4	2	3	1	1	1	1	1
4	4	2	1	2	4	1	2	2	2	1
4	3	1	2	1	1	4	2	1	4	2
4	4	2	1	1	4	1	3	1	2	2
4	1	2	3	2	2	2	3	2	2	2
4	3	2	3	1	3	1	3	1	3	1
1	4	4	1	2	4	3	2	3	1	1
2	3	3	2	3	1	2	2	3	2	3
2	2	3	2	3	3	2	2	3	2	2
2	4	2	1	2	1	4	3	2	4	1
2	2	3	4	2	3	1	2	1	2	4
2	3	2	3	3	2	3	2	1	3	2
3	1	4	2	1	2	1	3	4	2	3
3	3	3	2	3	2	3	2	1	2	2
3	3	4	2	2	4	3	1	2	1	1
3	4	1	4	4	1	4	1	1	2	1
4	3	1	4	4	3	2	1	2	1	1
4	1	1	4	1	4	1	3	1	4	2
4	1	1	4	4	3	1	2	1	3	2
4	2	1	3	1	1	1	4	4	4	1
4	1	1	4	1	4	1	1	1	4	4
1	4	4	1	1	3	4	2	4	1	2
1	4	2	2	4	4	2	2	3	2	1
1	4	1	4	3	3	3	1	2	1	4
1	1	2	4	2	4	3	3	2	2	3
2	4	1	4	4	4	1	4	1	1	1
2	1	4	2	1	4	1	2	3	3	4
2	2	2	3	2	2	2	3	2	4	3
3	1	4	1	1	4	4	2	4	1	2
3	4	1	1	4	2	4	2	4	1	1
3	2	3	3	2	1	2	2	2	4	3
3	3	1	4	1	3	1	2	3	4	2
4	2	1	2	2	2	4	3	1	4	2
4	3	3	2	1	4	2	3	2	1	2
4	1	3	2	3	1	2	2	4	2	3
1	2	4	2	4	2	2	2	3	3	3
1	3	3	2	4	2	2	1	4	2	4
2	3	4	1	2	3	3	4	4	1	1
2	3	4	3	2	2	2	3	2	2	3
3	3	4	3	3	2	2	2	2	2	2

3	1	3	2	1	4	2	4	4	2	2
3	3	1	4	3	4	2	2	1	3	2
3	4	2	1	1	1	4	4	4	2	2
4	1	3	2	2	3	1	4	2	2	4
4	3	3	3	1	2	2	4	3	1	2
4	4	1	4	2	1	1	4	1	4	2
1	3	4	4	4	1	2	3	2	3	2
1	1	2	4	2	4	3	3	4	2	3
1	4	3	2	2	1	3	4	2	3	4
1	3	3	3	4	2	2	4	2	3	2
1	4	4	1	3	4	3	3	4	1	1
2	4	4	2	4	2	2	3	3	1	2
2	3	4	3	4	2	2	1	2	3	3
2	1	1	4	4	3	4	3	1	3	3
3	2	1	4	2	4	2	4	1	4	2
3	1	2	3	3	3	3	2	2	3	4
3	2	1	4	4	3	1	2	3	2	4
3	4	1	4	1	4	3	2	2	4	1
3	2	3	2	1	4	1	2	4	3	4
3	3	1	4	1	4	1	2	2	4	4
2	3	3	2	4	1	3	3	3	3	3
2	4	4	1	4	1	1	4	3	2	4
3	3	3	3	3	2	3	2	1	3	4
3	2	1	3	3	2	4	3	2	4	3
3	1	1	4	3	3	4	3	2	3	3
3	2	2	3	1	4	2	1	4	4	4
3	4	4	1	1	4	1	4	4	2	2
3	4	4	1	4	2	4	3	3	1	1
4	4	2	1	1	3	2	2	4	3	4
4	1	4	2	3	3	1	2	4	4	2
4	4	1	4	1	4	1	3	1	4	3
4	3	4	1	1	2	4	4	4	1	2
4	4	1	4	2	4	1	2	2	4	2
1	4	4	3	4	2	2	1	4	2	4
1	3	3	3	2	2	4	4	4	1	4
2	4	3	2	4	1	3	3	3	3	3
2	2	2	3	3	3	4	3	3	3	3
2	2	2	3	3	3	4	3	3	3	3
2	2	2	3	3	3	4	3	3	3	3
2	2	2	3	3	3	4	3	3	3	3
2	2	2	3	3	3	4	3	3	3	3
2	2	2	3	3	3	4	3	3	3	3
3	2	2	4	4	2	4	4	1	4	1
3	2	2	3	3	2	4	3	2	4	3
3	4	1	2	2	2	4	4	4	2	3
3	1	2	4	1	4	2	4	2	4	4
4	4	1	2	2	2	4	4	4	2	2
4	2	3	4	1	3	2	4	1	3	4
2	2	3	2	3	3	3	3	3	4	4

2	2	3	3	3	3	4	3	3	3	3
3	2	2	3	3	2	3	3	3	4	4
3	2	2	3	3	3	3	3	3	3	4
3	3	3	2	3	4	3	2	2	4	3
3	3	2	3	3	2	3	4	1	4	4
4	3	2	4	2	3	4	4	1	4	1
4	2	4	1	2	4	4	2	4	3	2
1	4	4	1	4	4	4	4	3	2	2
1	4	3	2	4	2	4	4	3	4	2
1	3	3	4	4	3	3	4	2	3	3
2	4	3	3	4	2	3	2	3	3	4
2	2	3	3	3	3	4	3	3	3	4
2	2	3	3	3	3	4	4	3	3	3
3	2	4	1	3	4	2	2	4	4	4
4	2	2	4	4	4	3	4	1	4	1
4	1	2	1	4	4	2	4	4	3	4
4	4	2	2	2	4	4	4	1	3	3
4	3	2	4	1	3	1	4	3	4	4
3	3	2	2	2	3	4	4	3	4	4
3	3	3	3	3	2	3	3	4	3	4
4	4	3	3	2	4	4	4	3	2	1
1	4	4	2	3	2	4	4	4	4	4
2	4	4	2	3	1	4	4	4	4	4
2	4	4	3	2	4	1	4	4	4	4
2	4	4	2	3	1	4	4	4	4	4
4	3	1	4	1	3	4	4	4	4	4
4	4	3	2	2	2	4	4	4	4	3
4	1	4	4	1	4	2	4	4	4	4
2	4	3	3	3	4	4	4	3	3	4
4	2	4	2	3	3	4	3	4	4	4
4	4	1	2	4	4	4	4	4	4	2

Given the choices, would anyone give the S&P 500 consideration over the other funds?

To be fair, this is based on returns reported gross of fees and the index has a disadvantage in this regard. To level the return playing field I imputed a 60 bps fee and re-did the quartile ranks (see Figure 8):

FIGURE 8
S&P 500 INDEX AGAINST LARGE CAP CORE MANAGERS
INSTITUTIONAL QUALITY (> \$1 BILLION AUM)
S&P 500 QUARTILE, WHERE MANAGERS ARE NET OF A 60 BPS FEE

<u>2011</u>	<u>2010</u>	<u>2009</u>	<u>2008</u>	<u>2007</u>	<u>2006</u>	<u>2005</u>	<u>2004</u>	<u>2003</u>	<u>2002</u>	<u>2001</u>
2	2	2	3	3	2	3	3	2	3	3

I would contend that the ranking does not change significantly. Anyone who thought the S&P 500 was a viable investment in the first instance (gross of fees) will certainly still maintain the same conclusion, and anyone who thinks that the S&P 500 was not a particularly compelling investment based on the gross of fee quartile sorting may not have had their minds changed by looking at the quartiles net of fees. Figure 9 shows the S&P 500 quartile ranking gross and net of fees:

FIGURE 9
S&P 500 INDEX AGAINST LARGE CAP CORE MANAGERS
INSTITUTIONAL QUALITY (> \$1 BILLION AUM)
QUARTILE RANKING, GROSS AND NET OF FEES

	<u>2011</u>	<u>2010</u>	<u>2009</u>	<u>2008</u>	<u>2007</u>	<u>2006</u>	<u>2005</u>	<u>2004</u>	<u>2003</u>	<u>2002</u>	<u>2001</u>
Gross of fees	2	2	2	3	3	3	4	3	3	3	3
Net of fees	2	2	2	3	3	2	3	3	2	3	3

Clearly the S&P 500 has improved its quartile ranking, but I would offer not significantly. I do not think anyone's position about the desirability of the index as an investment would be changed because of the imputing of a 60 bps fee.

CONCLUSION

Research tends to consider investable benchmarks (usually in the form of indices) as investment alternatives without applying the same decision framework that a typical actively managed fund would be subject to. This paper treats the returns of the S&P 500 as a fund, and evaluates those returns against the returns of similar funds (large cap core active managers). The quartile rankings place the S&P 500 well down the list, and even after imparting a 60 bps fee the S&P 500 never rises to the level of "attractive investment option."