

# HOW TO BEAT THE MARKET IN 3 EASY STEPS

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**M**uch time, effort, and capital is spent in attempts to “beat” the market. Professor Ken French estimates that investors collectively spend \$100 billion per year in attempts to outperform the market rate of return.<sup>1</sup> (The market rate of return is the rate obtained by investing in so-called “passive” investments such as index funds.)

Fear not, help is here – and you don’t even need \$100 billion. This article will discuss in broad terms what any investor – individual or institutional – must do to outperform the market. Those who attempt to beat the market are called *active* investors, because of their efforts (directly or through mutual fund managers) to pick stocks or time markets. Those who simply purchase “the market” (through index funds or similar instruments) are referred to as *passive* investors. First, what is meant by outperform the market? Active mutual fund managers are typically compared to a benchmark index. For example, a large cap mutual fund is compared to the S&P 500 index, whereas an international stock fund’s performance will be sized up against the EAFE index of international companies.

Investing in index funds is a form of *passive* investing, though not the only one. Since the index contains all of the companies in a particular category (e.g., the Dow Jones Industrial Index is the 30 largest industrial companies in the U.S.), to beat the index an active mutual fund must perform better than the weighted average return of those companies in the index.

**Passive investors have a head start in this battle of investment performance, because active investors *always* have additional costs.**

## The Arithmetic of Active Management

Before launching into our 3 Easy Steps, let us review what William Sharp, Nobel Laureate in Economics (1990) stated in his fundamental theorem on “The Arithmetic of Active Management”<sup>2</sup>:

*If active and passive management styles are defined in sensible ways, it must be the case that:*

1. *Before costs, the return on the average actively managed dollar will equal the return on the average passively managed dollar; and*
2. *After costs, the return on the average actively managed dollar will be less than the return on the average passively managed dollar.*

*These assertions hold for any time period. Moreover, they depend only on the laws of addition, subtraction, multiplication and division. Nothing else is required.*

This theorem is rooted in common sense and requires almost no proof. However, its implications are very powerful. By definition, passive investing provides the return of the average dollar invested

in the market. Before costs are imposed, some active investors will do better than this average and some will do worse.

However, and importantly: the average active investment will underperform passive investments because of costs; and the higher the costs the poorer will be the average active performance.

The Sharp theorem does not require market efficiency. It is true even if the market is inefficient. It holds over any time period, and over all types of market conditions. It means that passive investors have a head start in this battle of investment performance, because active investors always have additional costs.

### 3 Easy Steps

These are the 3 Easy Steps to beat the market<sup>3</sup> :

1. Identify inefficiencies in the market.
2. Identify managers who have consistent skill in exploiting these inefficiencies.
3. Ensure that the benefits derived from exploiting these inefficiencies will exceed the costs.

If you can accomplish all three of these steps, then you should invest in active mutual funds. If you can't solve all three (one or two isn't enough) then your investments should be passive.

#### 1. Identify Inefficiency

Professor Eugene Fama is the founder of the Efficient Market Hypothesis, and perhaps the most cited economist in the world. This theory states that current stock prices incorporate all available information and are the best approximation of intrinsic value; any price changes are due to unforeseen events; stock mispricings do occur, but not in a predictable pattern.

Most students of the market believe that the market is highly efficient,<sup>4</sup> but perhaps not totally efficient. The prices of stocks encapsulate the wisdom, information and expectations of a vast amount of market intelligence. In this way, passive investors exploit the prices that are set by active investors. If the price of GE stock is trading at \$35, then to buy or sell GE the active investor must believe that the quoted price does not accurately reflect all information about GE. Yet,

this is the price that thousands of traders (and millions of market participants) have agreed upon for this moment in time.

Passive investors don't argue for "perfect" markets, just highly efficient ones. Certainly the trading price of GE isn't "perfect" in the absolute sense – it is probably too high or too low. But which?

Ah, that's the rub – is it too high or too low? And if you think you know which direction, then why do thousands of market traders of GE stock (some of which are dedicated analysts for the stock) disagree with you?

**...to be an active investor, you must say, 'I am right, and most of you are wrong.'**

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Evidence indicates that the market reflects "news" (new information that affects a publicly traded company) within 80-120 seconds. Very few market participants can (legally) implement trades fast enough to take advantage of this information. So market inefficiency — to the extent it exists — can only be exploited by skillful evaluation of all publicly available data, and then reaching a conclusion different than the consensus view of the market. In other words, to be an active investor, you must say, "I am right, and most of you are wrong."

If you believe markets are efficient (or even highly efficient), then you stop. There is no need to go onto steps 2 and 3. If markets are highly efficient, then passive investments are the only logical alternative, and your next question becomes which passive investments to choose, and how to construct your passive investment portfolio.



## 2. Identify Managers Who Have Skill in Exploiting These Inefficiencies

Active investing sounds so promising. We may mentally compare investing to medicine, sports, or other areas of life, and assume that superior talent will deliver superior performance. Because Tiger Woods is the best golfer, he will – on average – perform better than other golfers. Because my doctor went to Harvard Medical School and practices at a prestigious hospital, she is better than other doctors and will deliver a better result.

And this analogy holds true for companies. Wal-Mart is a stronger, better company than Sears. As a company, Wal-Mart is expected to *perform* better. But, that doesn't make Wal-Mart *stock* a better buy than Sears stock. All of

those Wal-Mart advantages are already built into the price of the stock. And the difficulty for mutual fund managers is not to pick good companies, but to pick companies (good or bad) whose stock price does not properly reflect the “true” value of the company.<sup>5</sup> And in a very liquid market with millions of participants, this is more difficult than it at first seems.

One huge challenge is separating talent from luck. Wall Street is filled (and overflowing) with bright, capable fund managers, with gold-plated MBAs and Ph.Ds in economics, mathematics, computer science and physics. IQ tests and education resumes will not be enough to distinguish the true geniuses from the merely intelligent. Most of these funds are advertised by top-flight marketing companies. How do we distinguish the sheep from the goats?

Can past performance help us? This is the misconception upon which many investors stumble. It turns out that [surprise!] past performance is not indicative of future performance. A recent large study (3,700 public and corporate plans, representing \$737 billion invested) found that manager hiring and firing

**The study found that manager hiring decisions was a complete waste: the fund managers performed better than the market *before* being hired, but underperformed the market *after* hiring. Their market-beating performance was luck, not skill.**

decisions made by retirement plans, endowments and foundations was a complete waste of money and time: the fund managers performed better than the market *before* being hired, but underperformed the market *after* hiring.<sup>6</sup> In other words, their market-beating performance was luck, not skill.

Given there are about 20,000 mutual funds, statistical chance alone indicates that some of these funds will exhibit excellent performance over longer periods (5-10 years) of time. But this could easily be an indication of luck, not skill.<sup>6</sup>

What you need is a logical reason why your chosen mutual fund's approach to active investing is better than that of other funds. It's possible that your chosen fund manager has better ideas than other funds, and may be able

to exploit these to your advantage. But alas, given that there are so many funds, it is more likely that dozens of other funds have the same approach, perhaps even with more powerful computers or brighter analysts. And even if you have a unique idea, it won't last for long. There are supercomputers analyzing the trades of all mutual funds all the time, and your secret will be out soon enough, and then reflected in market prices. Advantage over.

But, we can't stop now. For discussion purposes, let's assume that the market is inefficient – at least to a degree that can be exploited. And let's assume that we have found a mutual fund manager who is brighter and more talented than other managers. Now we move into costs.



**Which Stock is Better?**

### 3. Ensure that the Benefits Exceed the Costs

Even if you can identify superior mutual fund talent, it doesn't make sense to invest actively unless the mutual fund's superior picks can not only beat the market average, but beat it by enough to cover the additional costs of active management.

And the costs of active management are high, probably higher than you suppose. A thorough breakdown is beyond the scope of this article, but in brief: there are trading costs (brokerage and bid-ask spreads<sup>7</sup>), mutual fund expenses, taxes, and cash drag, to name a few. And this doesn't include the expenses (time, money, emotion) of monitoring an active manager and replacing him when necessary.

**When all costs are added, active mutual funds often have a 4% marginal hurdle to overcome, just to “break even” with their passive counterparts.**

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Most investors focus on mutual fund expenses. The average active mutual fund fee is about 1.5% per year, whereas the average passive fee is less than 0.5% per year. That difference alone is startling and a huge hurdle to overcome – an excessive fee of 1% can reduce investment returns 15%-25% over 30 years. But in many cases the mutual fund fee is only the third largest expense associated with the fund (though the most visible.) In addition to the mutual fund fee, taxes,<sup>8</sup> and trading costs can each cost the active fund participant 1%-3% per year more than what the passive mutual fund would cost. When all costs are added, active mutual funds often have at least a 4% marginal hurdle to overcome, just to “break even” with their passive counterparts.

So, can your skilled broker or mutual fund manager deliver a return that is consistently 4% higher than the market rate of return – when all costs (including taxes) are considered?

**“When you look at the results over reasonably long periods of time, there’s almost no chance that you end up beating an index fund...The odds...are 100 to 1.” - David Swenson, Yale Endowment**



- DAVID SWENSON

David Swenson is the manager of the Yale University Endowment, which is the highest performing endowment fund over the past 20 years. To many he is considered the greatest current institutional investor – a modern mastermind. As an endowment fund manager, he operates in a tax-free environment, yet he still buys many passive investments for the Yale endowment. He stated the following:

“When you look at the results on an after-tax, after-fee basis over reasonably long periods of time, there’s almost no chance that you end up beating an index fund. The odds...are 100 to 1.”<sup>10</sup>

Mr. Swenson – the best in the business – isn't very confident about beating the market rate of return, as reflected in an index fund. How confident are you that you or your advisor can identify those active funds that will – taking all costs into consideration – outperform the passive alternatives?

#### What Does the Research Say?

Well, what about the data? It turns out that David Swenson is just about right. In a 2008 published study<sup>11</sup>, Professors Laurent Barras, Olivier Scaillet, and Russ Wermers used the most advanced statistical testing in science (using tests from computational biology and astronomy), to drill down into the performance of active mutual funds for a 32-year period, from 1975-2006. The researchers found that, on a pre-expense basis, 9.6% of mutual fund managers showed genuine market-beating ability. **But after expenses were deducted only 0.6% of fund managers outperformed the market.**

This extremely low number (less than one fund in 160) “can’t eliminate the possibility that the few [funds] that did were merely false positives” – just lucky, in other words, according to Professor Wermers. So, fewer than one in 160 mutual funds outperformed the broad stock market averages. Maybe you can find that needle in a haystack, but the odds are heavily stacked against you. And by the way, this study didn’t take into account taxes. If taxes were included, the active mutual funds would have performed even worse.

**The researchers found that only 0.6% — one in 160 — active mutual funds beat the stock market indices.**

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### Shooting Par for the Course



“Passive” investing is a term, which has connotes settling for the average. In a diversified portfolio, a better term is “structured” investing. Let me propose that you view passive or structured investing as shooting par in golf. Studies have suggested that the average 18-hole score on a full-size course is 97 for men and 114 for women. Only 5% of golfers say they break 80 regularly. Considering that par for the average course is around 72, that would suggest that the percentage of rounds under par is far less than 1%.

When you commit to structured investing, you lock in your score at par. You can’t score better than par, but then again, you can’t score worse. You guarantee a performance that 99.4% of mutual fund managers cannot deliver.

### A Fundamental Paradox

To ask how passive investing has performed is to ask how the global market has performed. The answer: impressively well.

#### Market Annualized Rates of Return (%)<sup>12</sup>

All Periods ended 12/31/2007


Index \ Year	5 Years	10 Years	20 Years
US S&P 500	12.8	5.9	11.8
US Small Cap	17.8	8.9	12.7
US Large Value	13.5	3.7	10.7
International Value	29.3	16.1	13.1
Emerging Markets	37.5	14.5	16.3

While the Tribeca philosophy is rooted in a passive approach, we do not use simple index funds, because of their trading inefficiencies. Instead, we favor a methodology that is more cost and tax efficient, and that focuses on distinct asset classes in the global market.

**Fundamental Investing Paradox:  
When we aim at the average, we perform better than the average.**

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At first, passive investing is a difficult concept for some investors to accept because of its fundamental investing paradox: *when we aim at the average we perform better than the average.* As explained above, we do not need to believe in perfectly efficient markets to go passive. The key drivers arguing for passive investing are a belief in reasonably efficient markets, the difficulty in finding a skilled manager, and the high expenses of active investing.

As the title says, “3 easy steps.” 

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1. Kenneth R. French, "The Cost of Active Investing" (April 2008). ) <<http://ssrn.com/abstract=1105775>>
2. The Financial Analysts' Journal Vol. 47, No. 1, January/February 1991. p. 7-9.
3. By "market" we are referring generally to the stock market, but this same analysis would hold for the bond market as well.
4. To be clear: the difference of opinion between active and passive investors is not great. Almost all investors believe the market is highly efficient. Active investors believe there are some inefficiencies that can be identified and exploited. Passive investors believe in greater market efficiency, and that it is difficult to consistently identify and exploit those inefficiencies.
5. And of course, for stock picking to work you must also assume that in the future, other market participants will recognize that the "true" value of the company is not reflected in its stock price, and bid up the stock, thereby making your early recognition of this fact profitable. Identifying a market inefficiency doesn't make you any money unless other market participants also identify the market inefficiency.
6. Amit Goyal and Sunil Wahal, "The Selection and Termination of Investment Managers by Plan Sponsors," 2007; pp. 35-36. <[http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=994304](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=994304)>
7. Imagine 50,000 people are invited into a football stadium, each with a quarter to flip a series of times on command. At the first flip, those with heads stay, and the remainder (about 25,000) leave the stadium. This continues until there is only one person left — after 15 or so coin flips. Would we say that the last man standing has more skill in flipping a coin than the other 49,999? Would we call the last 500 remaining stadium the most skilled 1%?
8. Bid-ask spread: the amount by which the ask price (what you can buy a stock for) exceeds the bid (what you can sell a stock for). For example, if the bid price is \$20 and the ask price is \$21 then the "bid-ask spread" is \$1. Implication: with active funds, frequent trading means the fund is constantly buying high and selling low.
9. Theodore Aronson, who manages billions of institutional money, stated: "None of my clients are taxable... Once you introduce taxes, active management probably has an insurmountable hurdle. We've been asked to manage taxable money — and declined."
10. David F. Swensen; Chief Investment Officer, Yale University Endowment, Economics Professor and author of Unconventional Success: A Fundamental Approach to Personal Investment, as quoted in: NPR, "Yale Money Whiz Shares Tips on Growing a Nest Egg"
11. Barras, Laurent, Scaillet, Wermers, and Russ, "False Discoveries in Mutual Fund Performance: Measuring Luck in Estimated Alphas" (May 2008). Robert H. Smith School Research Paper No. RHS 06-043 <<http://ssrn.com/abstract=869748>>
12. Data provided by Center for Research in Security Prices, University of Chicago.



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