

Active vs. Passive Management: The Debate Continues

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Ever since the first index fund was created, the debate between active versus passive management has been nothing less than “heated.” There are strong arguments postulated from both sides of the debate with “evidence” (a term used extraordinarily loosely in this particular debate) demonstrating the case for either.

Several studies from both academic sources as well as leading industry experts have been created supporting both sides of the debate and in isolation pose what on the surface appears to be a compelling case for either side.

How can this be? With all of the sophistication, analytics, and statistical data; with a plethora of academic and industry experts examining this question; with Nobel Prize winning theorists serving as a foundation of some of these studies; should we not be able to get to a definitive, scientifically provable answer? How hard can this be?

Unfortunately, advocates on either side of the debate have been guilty of ignoring the rules of science, and as such, have formed numerous arguments that wouldn’t pass the scrutiny of a basic high school science fundamentals class. (Well, perhaps they would with what is deemed as “science” today...but that is another story.) Science demands objectivity. Science does not permit conclusions to be drawn from inconclusive observations. Science demands truth. Science is provable.

If one contrasts the truth and reality of science to the supposed evidence we hear from either side of the debate, we can see that these studies have not been done by scientists, or at least have not been done by scientists that choose to use their scientific discipline. When a conclusion is drawn based on data that *might* be evidence (or is unknown to be evidence), it fails the basic tenets of science. Science follows the *law of causality*. If one does not know whether the data is a definitive result of a specific cause, one cannot draw a definitive conclusion from it. In science, such observations are anecdotal, or at best a theory yet to be proven.

To observe this contradiction, let’s start with an examination of an argument posed by the passive advocates. Advocates of passive management often use a misrepresentation that is easily ignored for the fallacy of the conclusion they want you to draw from it.

“Over the last ten years, the passive index fell in the top 18% of the large cap active management universe. Therefore (be careful when an advocate uses a scientific term like therefore) 82% of all money managers in this large cap universe under-perform the market averages, and therefore passive investments will produce better results than active investments.”

This is a sucker bet for the unaware. Explicit in this statement are some facts. The conclusions however are implicit and cannot be drawn based on that which is explicit in this statement. According to a leading fund analytics firm, the S&P 500 indeed fell at the 18th percentile for the last ten years for the large cap blend category as of the time of this writing. This is a fact and is accurately and explicitly reported in their statement. Likewise, the opposite side of the same statement, that 82% of the managers in that universe under-performed the passive index, is obviously an explicit fact. So far, we are following the rules of science...disclosing facts. In fact, we have disclosed the same fact twice.

Where the argument falls apart is when we take these *explicit facts* and cross the boundary into drawing a conclusion that could *only be implicitly argued*. The presenter of the argument is asking you to accept his inferences, things that are not proven or stated, things for which there are numerous questions for which facts have not been presented, and accept these inferences with the same level of respect as you would the explicit facts.

Think about the statement, and examine it from a scientific perspective instead of an advocate’s “pitch.”

If I were to accept the conclusion implicit in the statement, I would also have to accept the following:

Past performance is an indication of future results

This statement is not only a violation of securities laws, it simply is wrong. No one has yet proven a relationship exists from past performance to future performance. This does not mean that a relationship cannot exist...it might but we have not yet been able to prove it. Conversely, simply not being able to prove a relationship exists does not mean one can any more reasonably conclude that a relationship definitively does not exist. Not being able to prove there is a relationship is not the same as proving one doesn't exist. We simply have not proven whether or not past performance is predictive and therefore *any argument that requires such proof to be true is necessarily invalid*. Regardless, the implicit conclusion they ask that you draw from their argument requires you accept the unproven notion that past performance is an indication of future results. The results of the manager universe were factual, but the conclusion... the "therefore" statement they make...is only valid IF past performance IS an indication of future results.

Would their "evidence" sound anywhere near as conclusive if they accurately presented the leap of faith they are asking you to make? Imagine their argument preceded by accurate and explicit disclosure of what they are asking you to accept such as, "I am about to present you with a conclusion I have drawn from data for which we have no evidence for the cause. I'm unsure on whether the data is predictive. I do not know if it is caused by random chance or whether I even have sufficient data to draw the conclusion. I will ask you to accept, despite there being no definitive proof, my conclusion as a fact anyway."

A scientist would examine and question sources of potential errors in the data before drawing a conclusion from it and would disclose the difference between explicit and implicit conclusions. What sort of questions might be asked?

One question might be how was the universe created and what was the selection criteria? A competing analytics firm's pure large cap universe showed the market return fell at the 65th percentile, not the 18th. Do we know whose universe, or if either, might be right? Or, perhaps the results may be random and unpredictable. If it were completely random like a flip of a coin, shouldn't the index fall right in the middle of the universe? Many people erroneously assume this. To test this though, a scientist would apply some factorial analysis and make an interesting discovery.

Say, as a test of the randomness concept, I assumed that there are 1024 money managers in my coin-flipping universe. Also assume that each year, half the managers out-perform and half the managers under-perform by equal amounts and this happened randomly each year like a coin flip. After ten years of flipping the under and over performance coin, 1024 times (once for each manager) each year, what percentage of the managers would exceed the average?

Intuitively, most answer 50%. However, if I applied my factorial analysis, I would discover that is not the case.

Unlike real performance numbers of which there are an infinite number of potential results (dependent on how many decimal places we calculate the return), in our coin flip manager universe, there are only 1024 potential outcomes...2 choices (heads or tails) raised to the 10th power (over ten years). Since the under and

over performance is the same in each year, for any one of the 1024 flipping managers, there are only 11 potential average results, ranging from averaging 10 heads to averaging 10 tails, with the vast majority (99.8%) having at least some combination of heads and tails.

In fact, we can easily calculate what the resulting “ten year universe results” would look like.

Table 1- 10 Year Coin Flip Universe

# of Heads	# of Tails	# of Mgrs	%	Cumulative
0	10	1	0.1%	
1	9	10	1.0%	
2	8	45	4.4%	
3	7	120	11.7%	
4	6	210	20.5%	
5	5	252	24.6%	62.3%
6	4	210	20.5%	37.7%
7	3	120	11.7%	
8	2	45	4.4%	
9	1	10	1.0%	
10	0	1	0.1%	
Total		1024	100%	

Observe that instead of 50% of the managers out-performing (6 or more “Heads”), only 38% do. Of course, this is a bit of linguistic packaging and instead of positioning this information as *only 38%* exceeded the coin flip average, we could just as validly position this explicit information with a statement designed to implicitly infer the opposite conclusion such as, “*more than 62% equaled or exceeded the heads and tails market averages.*”

One cannot conclude from this that the results of managers are necessarily random, only that I had better not conclude they necessarily are not. It may also be wise to avoid the conclusion that a manager that flipped heads 7 out of 10 years was necessarily a better coin flipper or was “smarter.”

In fact, we often see this sort of phenomenon in these universe rankings. For example, in a leading fund analytics firms’ 10-year universe for the large cap core category, 57% of the funds exceeded the category average. How can a majority of the funds exceed an average of themselves? It is mathematically possible simply because averages can be skewed, be it an average of managers or a market average for that matter.

The few passive pundits that accept this mathematical reality (yet somehow evade disclosing it) move toward other premises like “the secret is avoiding fees.” They may make a statement, again supported by accurate data irrationally packaged, of something like:

“While returns may be random and can be skewed by data sampling errors and universe construction methodology (I’m giving them the benefit of the doubt in disclosing this), one can see that expenses dramatically impact performance. This can be demonstrated by the simple fact that if we reduce the market return by the category average expense ratio, the market’s return would fall exactly at the 50th percentile, therefore demonstrating that the difference is completely due to fees.”

This statement happens to be true for a category at the present time. Using a leading fund analytics firm’s large cap core database of 200 funds with ten-year records, we can see that 100 of the 200 funds (50%) exceeded the return of the market when the market’s return is reduced by the average expense ratio. This is

the same database where only 18% of the funds in that universe exceeded the market's return for the last ten years. This sounds like pretty compelling evidence on the surface...if I reduce the return of the market by the average expense ratio I end up being pretty close to the median fund, so therefore (oh-oh...there's that conclusion again) the fund expense ratios must explain why so many funds under-perform.

This may be accepted until the active pundit reverses the argument and says that "it is obvious that low expenses *do not matter* because only 7 of the 36 funds (19.4%) that beat the market over the last ten years had expense ratios of less than 50 basis points."

Not to be out-done, the passive pundit argues "your analysis is flawed because 33 of the 36 funds (91%) that beat the market over the last ten years had expenses below the category average."

The active pundit uses the passive activist's evidence (how's that for an oxymoron?) against them by restating the same information packaged to lead to a different conclusion by saying, "What matters is the return you receive after expenses, not what you pay in expenses." Then he continues, "In fact, some of the top performing funds over the last ten years have expense ratios that are 20-40% higher than the average expense ratio."

These sorts of arguments can go on forever and as evidenced by the twenty-year debate of this topic, they likely will. Observe that neither side is explicitly presenting any false statements (their implicit conclusions are a completely different story). Any time you have an argument being debated with both sides presenting the same accurate information, yet not agreeing, you have at least one of them (and probably both) evading reality and drawing erroneous conclusions.

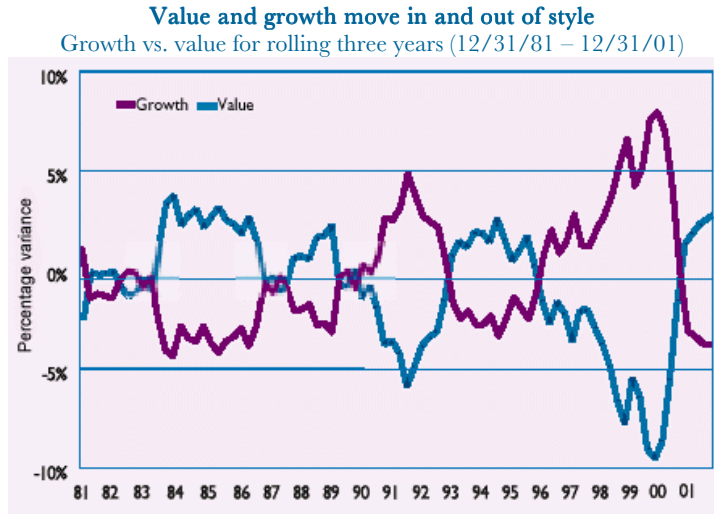
As they continue to debate one another with the same facts packaged from different perspectives, getting nowhere in the debate, invariably the argument degenerates into replacing facts with "expert opinions." For example the passive advocate might say, "Dr. Eugene F. Fama published in the *Financial Analysts' Journal* his Efficient Market Hypothesis in 1965, are you not familiar with it?"

The active pundit degrades the argument one level further by replacing a single "expert's opinion" with an argument for mob rule by stating that he is aware of it and, "However, there is ample evidence to dispute the basic claims of this theory, and most investors don't believe it." (I could not resist this quote having seeing it on investorwords.com as part of a "definition" of Efficient Market Theory!)

"What evidence?" asks the passive pundit?

"Plenty, everyone knows it," counters the active activist, pulling out a chart, "have you not seen this chart of how growth and value styles move in obvious cycles?"

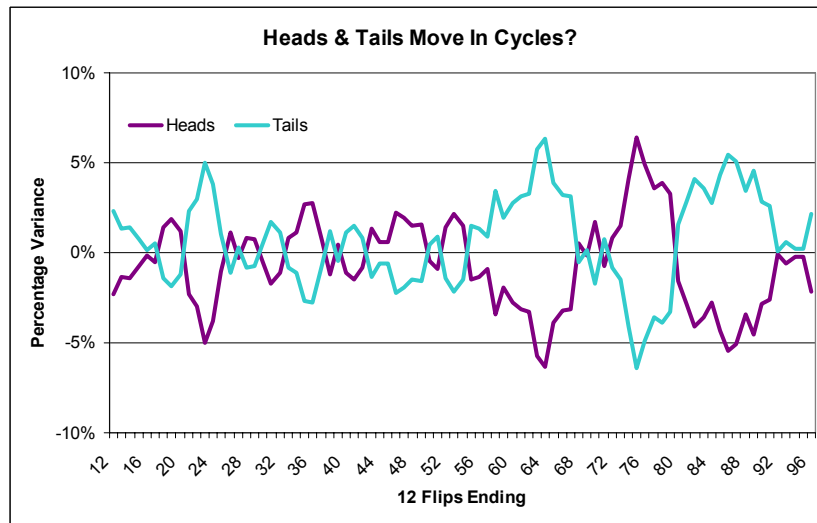
Chart 1 - Growth & Value Cycles



Based on the S&P Barra Growth Index and the S&P Barra Value Index. The S&P Barra Growth Index is a capitalization-weighted index of all the stocks in the S&P 500 that have high price-to-book ratios. The S&P Barra Value Index is a capitalization-weighted index of all the stocks in the S&P 500 that have low price-to-book ratios. You may not invest directly in an index. All three indices are unmanaged. The chart represents past performance, which does not guarantee future results. The chart does not represent any CDC Nvest fund or other investment. Returns assume reinvestment of all dividends and do not include a sales charge. Source: CDC Nvest website.

The passive pundit counters, “All that shows is that randomness doesn’t look random, I can see the same effect in flipping coins...are you saying that heads and tails run in obvious cycles?”

Chart 2 - Heads and Tails Cycles



The passive activist continues with another expert opinion, “Have you not read Bill Sharpe’s elegantly simple mathematical evidence “The Arithmetic of Active Management” published in the *Financial Analysts’ Journal* in January 1991? In that article, he proved with very simple math that since all investors together equal the market, the average dollar invested in active management will equal the return of the market less the expenses. He is a Nobel Laureate you know.”

The active activist counters with “And you think THAT makes the case for passive investing? That is WHY you shouldn’t select *average* managers and WHY it is important to select managers that *do better than average*.”

Besides, it is a well known fact that there is far more money under active management, than there is in passive management.”

“Well, most people thought the earth was flat and the sun revolved around the earth, even after Galileo and Copernicus showed them otherwise,” counters the passive pundit.

“What does that have to do with investing?” says the active activist, and closing the debate to any further rational discussion (not that much had been included up to this point) he states, “Money management is an art, not a science, and until you accept that you *cannot* understand it!”

You have probably read papers that were on either side of this debate, or perhaps you were a participant in this debate and see many of your own words restated here. We are talking about a serious subject and we are treating it like children fighting over an ice cream cone. BOTH sides are guilty of exploiting explicit facts and packaging them into implicit conclusions the facts do not support. Observe the statements below (hopefully you perceive these as drawing absurd implicit conclusions) and the corollaries used in the active/passive debate.

82% of all drivers involved in car accidents ate carrots within the last six months; therefore, eating carrots contributes to car accidents.

A (hopefully) higher percentage also brushed their teeth, filled their car with gas, kissed their spouse, called their mom and either mowed their lawn or hired someone to do it for them. A high percentage of observed data unsupported by proof of causality does not create a causal relationship. Nor does it say that there necessarily is not a causal relationship. That can only be known once it can be proven. What if 92% of all people ate carrots in the last six months? The opposite argument could be made with that evidence since the people involved in accidents as a group ate less carrots than the population overall. Neither one proves cause.

Passive and Active Corollaries

Passive - “82% of money managers under-perform the passive benchmark, so therefore your results should be better if you use passive management.”

Without knowing the cause of this result, we cannot conclude this. What if we discovered that managers that kiss their spouse at least once a day made up a higher percentage of the universe that outperformed? What if it was mere luck as conceptually demonstrated as a potentially contributing factor by our coin-flip universe? We have no shortage of opinions on the topic and as long as we twist explicit facts into implicit conclusions, we make it more difficult to discover the reality.

Active - “18% of the managers out-performed the passive benchmark so clearly some managers have investing skill.”

We have no more evidence to support this conclusion than we do to support the conclusion that eating carrots helps to prevent car accidents. In fact, in our coin-flip universe example, we see that if results of managers were purely random coin-flips we would expect twice as many to out-perform, just based on random odds of flipping heads or tails. Then again, if we switch to another universe, we see 65% beat the market. Something is amiss here. Neither of the conclusions is supported by the facts. The facts are accurate, the conclusions are erroneous. We simply do not know the answer and all of the circular references, all of the equally irrational “experts,” all of the double talk and packaging will not make that which is unknown, suddenly known. We cannot *will* our own version of reality into existence. Existence exists!

The Green Bay Packers have never lost a post-season game in Wisconsin; therefore, it is a “safe bet” they will beat Atlanta in the Wild Card playoff game.

They lost. No it had never happened before. From this point forth, this implicit conclusion will be packaged as, "The Packers have lost ONLY ONE post-season game in Wisconsin." Until they lose again at some future date.

The Packers were down by 25 points and "no team had ever come from that far behind in a playoff game." Their loss added to this "fact," until the next day when San Francisco came back from a greater deficit to beat the Giants. *Everything* that has happened at least once never happened until it happened. There is an enormous difference between something that rarely occurs and something that cannot occur. Taking either side of these extremes is very dangerous. If we bet our life savings on the premise that "The Packers cannot lose" in Wisconsin for post-season play, we would be starting our lives anew, penniless. Likewise, because the Packers lost, it is equally erroneous to conclude that no team will ever be able to come back from a deficit of more than 25 points.

Passive and Active Corollaries

Passive - "91% of money managers that out-perform the passive benchmark over ten years have expense ratios that are under the average of the category, therefore lowering your fees will produce better results."

While the odds appear to be in your favor by lowering fees, we do not know for a fact that a higher expense fund will necessarily under-perform a cheaper fund. What if I examine the data and see that 6% of the funds that beat the market had expenses of more than 1.5% and only 12% of all funds had expense ratios that high within the category? Is the difference a 6% chance, a 91% chance or neither? You have to understand how to calculate the probabilities to accurately assess this statistic, but without proof of causality the data may be meaningless.

Active - "Several of the few funds that outperformed the market over the last ten years had expense ratios much higher than the category average, therefore lower fees will not produce better results."

Like the opposite argument, this statement is true in some cases, but does not mean there may not be some relationship. This statement is similar to saying there is no such thing as a home field advantage because the Packers lost a post-season game at Green Bay. Some rare occurrences do not equate to it being rational to bet against the house. This statement is accurate up to the point of the conclusion. There is a huge difference between the premise of no probability and some probability.

There are many other examples of irrational statements that are implicitly accepted without specific evidence. For example:

"Breast cancer rates in county "Y" are 20% above the national average, so there must be an environmental cause."

The national average is like the category average. Remember how 57% of all funds out-performed the average of all funds. By definition, the average is the result of some results both above and below the average. For that matter, think about the universe rankings so often used. Won't some counties fall in the top decile and others in the bottom? The average was created from a wide sampling; among that sample there were areas that were higher and lower. One area being higher does not mean anything conclusive other than it was higher. It could be caused by numerous things like demographics, lifestyle, or mere randomness. Or...it could be caused by environmental issues...knowing that the cancer rates are higher doesn't prove that, only knowing the cause does.

"I've never lost more than \$10 at poker night when I wore my lucky shirt. The one time I wore another shirt, I lost \$200 so I better make sure I wear my lucky shirt."

Go ahead and live dangerously and put on a clean shirt. Superstition has never been proven as causal. Not that superstition might not one day be proven, but it is not very rational.

So, what can we conclude from the active versus passive debate? Is there evidence that definitively supports either side's position? The most objective answer we can provide is "no," we cannot definitively prove either active or passive management is necessarily good or bad. At least, not if we objectively evaluate the things we know as facts and avoid implicit conclusions that cannot be proven from the facts we have available. However, we think it is wise to try to understand the bet one is making for taking either side of the argument. Since no one, (including us) has definitely proven one side or the other, the choice should come down to what being right or wrong on this bet means to our clients... isn't that whom we are serving?

Our conclusion is not based on any of the "packaged" data presented by either side. We are basing our conclusion on the premise that our job as financial advisors is to confidently achieve investors' financial goals. When looking at it from this perspective, looking at the choices we have available, looking at the reward of being right, and the risk of being wrong, we think the evidence argues that passive management can control uncertainty better than active management. **BEFORE you respond emotionally to this statement, first understand what this statement explicitly said, and that which is NOT to be implicitly inferred.**

The statement was merely that future financial uncertainty can be controlled better through passive management. There is a *cause* for this premise, and that cause is simple. The nature of markets is complicated and there is a great deal of uncertainty in attempting to model the nature of the markets overall. Adding additional uncertainty to this equation cannot, by definition, increase *confidence and can only increase uncertainty*. While we know that our capital market assumptions used to feed our simulation models to test uncertainty will not be perfect, we must acknowledge that they also serve as the foundation for any further attempts to model the nature of managers that invest in these markets. These managers represent an additional amount of potential error and uncertainty added to our imperfect capital market assumptions.

We cannot evade two facts. First, the future for the financial markets is uncertain and despite all of our attempts to diligently define the right inputs, test the extremes, simulate the nature of markets thousands of times, as they relate to any one investor's financial goals we are doing nothing more than a well reasoned estimate. Next, adding another variable like the potential to under or out perform does nothing to increase the certainty, and in fact can only increase uncertainty.

The issue is mathematical in nature but to simplify it, let us start by examining it from a perspective of a case study that may be more understandable but is admittedly anecdotal evidence.

Let's take a sample investor, age 55, saving \$20,000 a year with \$1,000,000 in taxable investments, retiring at age 65, desiring \$70,000 a year of retirement spending, and wanting confidence their wealth would last to age 95 as their family history would indicate. We will assume their investments are taxed at marginal rates up to retirement, and in retirement to the extent that returns are realized in excess of their retirement need. All scenarios assume 100% annual turnover with half of the capital gains being realized as long-term capital gain rates and any losses realized will be utilized to off-set future gains. We thereby are ignoring any of the potential tax benefits passive advocates package in their argument, since active management may be able to equal or potentially even exceed this effect. The sole solution we are trying to learn from this analysis is how confident do I have to be in selecting active managers, and what is the price if I am wrong? We WILL NOT examine what the odds of being right or wrong are in manager selection (since we do not know this for a fact), but instead we will merely assess what being right or wrong means to our client so we can assess how confident we must be in order to pursue active management selection as a rational endeavor.

The first thing I must do for this analysis is to estimate the nature of the capital markets, something we have spent a fair amount of time doing. We have evidence that a large amount of a manager's return is determined by the overall capital markets (if they are diversified) so in estimating the results of what might happen, we will assume the manager tracks the market excepting for some potential positive or negative market relative return, or alpha. Based on what we know about concentration risk (the un-rewarded risk of not being diversified), we will not assume that manager results are caused by accepting this risk. We will also assume this client's choice of balancing risk versus all of their other goals, leads to a portfolio allocated 80% to stocks (well diversified and including large and small cap stocks), 18% to bonds and 2% cash.

We will NOT assume that active management expenses necessarily add to, or reduce the investment return. Passive pundits may hate this assumption, but what we are trying to understand is how confident I must be in manager selection in the face of higher expenses, so assuming a penalty for expenses would bias the perspective and would assume something for which we do not have definitive proof of causality.

Finally, we will not assume that active management leaves unused risk on the table, as presumably one would be able to create a passive portfolio with equally lower risk characteristics. Active advocates may prefer an assumption that the manager will take less risk than the market, but if he isn't utilizing investment risk the client can comfortably accept he would be leaving return on the table. Presumably the client would prefer to obtain the extra return rather than avoiding a risk they are indifferent about, so assuming lower risk for active management when the client can comfortably assume the market risk would likewise bias the results.

We will assume that the passive choice of investing under-performs (due to expenses which are nearly certain for passive investments) the nature of the market by 20 basis points. IF we have well reasoned capital market assumptions, this results in an 84% confidence level of meeting all of this sample client's goals. Any estimation error in our capital market assumptions that would cause this number to be say, 75% or 90%, will also be present in any of the potential active results we are attempting to identify, so such estimation error affects all of the results equally.

What might happen if I skillfully (or luckily) select a manager that out-performs the passive investment by 1.5% (and the market by 1.3% because of the passive investment's 20 basis point expense)? My confidence level increases to 93%. At the 50th percentile the ending portfolio values are \$3.1 million versus \$6.2 million. (It should be argued the investor would never actually realize the active or passive 50th percentile results since they would likely find some other use for their money had they experienced those results considering they had no estate goals.)

So far, if we assume we can be lucky or skillful in manager selection there appears to be enormous value to active management. This 1.5% spread in returns in some manager universes equates to a difference between the median and top 25th percentile for ten years. Of course, over forty years (there are no forty year universes), it would more likely be something on the order of the difference between the top and bottom quartile or potentially even top and bottom decile results (without the data we don't know this, so this is just a guess) as the range of results in the universes shrink the longer the time period is. For example in one sample universe, the difference between median and the 25th percentile is 4.0% over three years, 2.1% over five years, and 1.4% over 10 years. There is a mathematical reason (cause) for this result. The cause of this is similar to why in our coin flip universe, 50% of the managers flipped heads the first year, but over two years only 25% averaged all heads and by the tenth year there was only 1 of 1024 that flipped ten heads in a row. This phenomenon is consistent in all of the universes we have examined.

Of course, we do not know if we will be this skillful (or lucky) in picking managers to produce this superior return. We do know in attempting this, there is a risk (again, we do not definitively know how big of a risk this is) that we might under-perform the market as well.

If instead of assuming that my manager outperformed the market by 1.3% and the passive investment by 1.5% every year for the next forty years, let's examine what the results would be if he happened to under-perform the market by the same 1.3% (and under-performed the passive investment by only 1.1% due to the 20 basis points of expense in the passive investment).

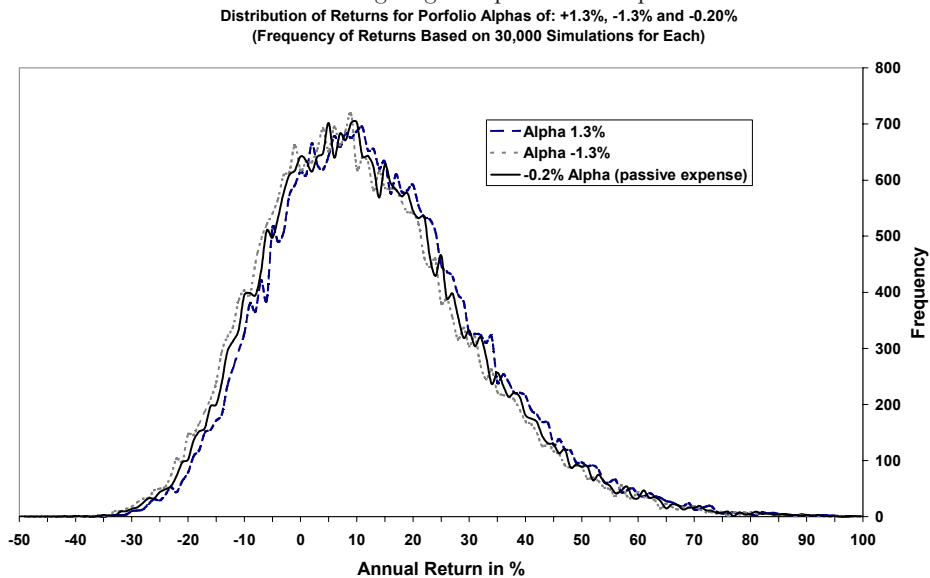
If my skills failed me (or my luck ran out), my confidence level would drop to 73% from the passive 84%. Instead of having \$304,000 at age 95 as in the passive portfolio at the 80th percentile, he would have theoretically run out of money at age 91 (though it should be argued that he would have reduced his spending along the way if this was his experience, just as he would have likely increased his spending as in the 50th percentile results in the prior example). At the 50th percentile, instead of \$3.1 million as in the passive example, he would have only \$1.7 million, again, a result unlikely since the money in excess of his initial goals would have likely been put to use in either case.

What can we glean from this? First, for this investor, with his risk tolerance and choice of goals and trade-offs, it appears as though the difference in beating the market by 1.3% every year versus under-performing it by 1.3% is about 20 points in his confidence level (73% versus 93%). The 2.6% spread in these returns anecdotally appears to be about the difference between top quartile and bottom quartile types of variance in a ten-year, before fee universe. One might theorize (although not definitively conclude without the evidence) that a forty-year universe would have such variance as larger extremes than top and bottom quartile (perhaps top and bottom decile?).

As for the passive investment, we assumed we were under the market by 20 basis points every year, that it outperformed the "poor" or "unlucky" manager selection by only 1.1% and under performed the skillful manager selection by 1.5%.

The passive results had effectively no chance of beating the market. Likewise, it had effectively no chance of under-performing the market by more than the 20 basis points. The questions we really need to ask ourselves as advisors is how confident are we that we can pick the exceptional managers, what is our reward for that and what is the risk? The reward, if *exceptionally* skillful or lucky is 9 points of confidence in this example. Is it worth the risk? How likely is it that I will be that skillful?

The reality, for this case study and as we show in the distribution of returns, is that the vast majority of results of active management will not likely (again, excluding fees, turnover etc.) be materially different than passive management. How much other uncertainty is there out there? And, assuming passive investments fall somewhere in-between as statistically should be the case, are we really looking at this as being worthwhile to pick up 5-10 points of confidence with some risk of us giving an equal amount up?



An objective evaluation of the active versus management debate should more accurately be positioned **as it is unlikely that it will make a material difference EITHER WAY.**

There will be some time periods where passive investments may fall in the top 20% and probably will also be periods where they fall in the bottom 20%. We don't for sure know how or when either will happen. As Sharpe indicated, such results would be caused by our methodology in constructing manager universes and could not be a reflection of the nature of active and passive management in general. Before fees, the market must equal itself!

Active management proponents often argue that if you have "some" chance of beating passive investments, why wouldn't you even try? This is similar to the other irrational remote probability arguments by completely evading the odds against being "right" enough to make a material difference as well as the potentially equally remote odds of "wrongness" being material.

But, if we think about what it really means to our clients, we see that making a bet on passive investing has a fairly remote risk of financially harming my client. Passive investing is not a bet against active management in general...the price where it becomes *material* is ONLY active management WITH exceptionally skillful or lucky selection, which IS a remote chance. Along with that remote chance is the remote chance of being exceptionally poor or unlucky at manager selection. What we really can observe here is that over the long term, the material differences only happen at the rare and unlikely extremes.

We could easily play the odds here if we knew them, but no one really does. Would I take a 1 in 10 chance at an extra million if the price of that bet were a 1-11 chance of it costing a million? Yes, from a probability perspective we would. This is how casinos make fortunes. The problem is we do not know what the odds are (and casinos do know their odds). The data is inconclusive and inconsistent. It is uncertain and in making the bet we are adding additional uncertainty to the mix. If instead we had odds of 1 in 10 of making an extra million and a 1 in 9 chance of it costing a million, we would not make that bet. That is, we wouldn't make that bet unless we were a "player" at the casino and we were hoping for good luck or merely making the bet for the purpose of entertainment. If luck and/or entertainment was the rationale, we'd be making the bet in full knowledge the odds are against us. We would not however, bet our financial future on luck or entertainment.

Referring back to the 50th percentile results of the extreme cases ("Active A" - active out-performs passive by 1.5% and the market by 1.3%, "Passive B" - passive under performs the market by 20 basis points and "Active C" - active under performs passive by 1.1% and the market by 1.3%), we can estimate how confident we need to be in our active bet for it to be worthwhile:

<u>Scenario</u>	<u>Alpha</u>	<u>50th Percentile Value</u>
Active A	+1.3%	\$6.2 Million
Passive B	-20%	\$3.1 Million
Active C	-1.3%	\$1.7 Million

An overly simplistic view of this might cause one to irrationally conclude the Active bet is better because it had a \$3.1 million advantage to the Passive B portfolio with the 50th percentile cost being only \$1.4 million (the relative under performance of Active C). If someone tries selling you this, beware, because the odds do not work that way.

The dollar values do represent the 50th percentile results in these examples. But for the comparison above to represent the true economic bet, each would have to have the same level of certainty, and of course they do not. What is the certainty of Passive B portfolio under performing the market by 20 basis points? One could

argue that it is near 100% (assuming our capital market assumptions are right but any estimation error here would affect the active alternatives too). The economic value to this passive bet then is simple.

With the passive portfolio certainty of underperforming the market by its expenses, there is a 50% chance of ending up with \$3.1 million or an economic value to that bet of just over \$1.5 million (near certainty of having a 50% chance of ending up at \$3.1 million or \$3.1 million times 50%). However, **it is not certain** that the Active A portfolio will exceed the market by 1.3% and the passive portfolio by 1.5%. To have the same economic value, **I would need to have 50% confidence that I will be able to select managers that will exceed the market by 1.3%**. (\$6.1 million X 50% X 50%= \$1.55 million).

Do you perceive this as rather long odds? What kind of manager universe, skill or luck must you have to have 50% confidence of beating the market by 1.3% *over 40 years*?

Think about what this means. For the economics of active management to make sense relative to passive management, I have to be certain of fees not having any impact, and have 50% confidence that I will be able to select managers that will out-perform the market by 1.3% a year for the next forty years.

Maybe your attempt at active management is not designed around producing a 1.3% alpha every year for the next 40 years and you agree that the odds are against you having a 50-50 chance of that sort of superior selection. Perhaps you have more meager goals for your attempt at active management and you are merely attempting active management to equal the market net of fees. Your expected alpha with this meager goal is zero relative to the market, and all you need to do in your manager selection is exceed the passive investment by its 20 basis points of expense.

How certain or confident must you be in your active management selection if your only goal in active management is to equal the market net of expenses? With the expectation being only a 20 basis point superior return to passive investments, the 50th percentile result is \$3.46 million versus the passive investments' 50% chance of \$3.14 million. ***If your attempt at active management is to merely make up the expenses and equal the market, you would need to be more than 90% confident that your selections would equal the market net of their expense.***

We are not saying that you shouldn't be that confident as we have no evidence that your active selection methodology wouldn't justify such confidence levels. We would be skeptical, but objective. **The question you may want to ask yourself is, "are you being objective about the confidence required to justify the bet you are making?"**

For this sample client's circumstances (not a particularly bizarre scenario), we can actually measure how confident one would need to be in their decision to apply active management for any given level of alpha you expect for your selection discipline. The table below shows you the confidence you must have in your active management selection for your anticipated alpha over forty years.

"Investment Bet"	Alpha to Market	Alpha to Passive	50th Percentile Result	Economic Value of Bet (50% Chance of Achieving 50th Percentile)	Required Confidence to Equal Passive Certainty	≈10 Year Universe Rank Before Fees (assume market= median)	Guess of 40 Year Universe Rank Before Fees (assume market= median)
Passive(net of fees)	-0.20%	0.00%	\$ 3,146,869	\$ 1,573,435	100%	58th %-tile	55th %-tile?
Active = Market	0.00%	0.20%	\$ 3,467,714	\$ 1,733,857	91%	50th %-tile	50th %-tile?
Active Exceed Market By:	0.20%	0.40%	\$ 3,824,453	\$ 1,912,227	82%	47th %-tile	45th %-tile?
Active Exceed Market By:	0.40%	0.60%	\$ 4,225,972	\$ 2,112,986	74%	42nd %-tile	40th %-tile?
Active Exceed Market By:	0.60%	0.80%	\$ 4,641,100	\$ 2,320,550	68%	40th %-tile	35th %-tile?
Active Exceed Market By:	0.80%	1.00%	\$ 5,072,338	\$ 2,536,169	62%	37th %-tile	30th %-tile?
Active Exceed Market By:	1.00%	1.20%	\$ 5,573,614	\$ 2,786,807	56%	31st %-tile	24th %-tile?
Active Exceed Market By:	1.20%	1.40%	\$ 6,020,487	\$ 3,010,244	52%	28th %-tile	20th %-tile?
Active Exceed Market By:	1.40%	1.60%	\$ 6,532,213	\$ 3,266,107	48%	25th %-tile	15th %-tile?
Active Exceed Market By:	1.60%	1.80%	\$ 7,053,153	\$ 3,526,577	45%	22nd %-tile	12th %-tile?
Active Exceed Market By:	1.80%	2.00%	\$ 7,591,381	\$ 3,795,691	41%	20th %-tile	10th %-tile?
Active Exceed Market By:	2.00%	2.20%	\$ 8,241,195	\$ 4,120,598	38%	17th %-tile	7th %-tile?

If you think you can be this confident in making these bets, then active management is appropriate for you. We have already seen that the odds of it being a material bet either good or bad are remote (when we ignore fees) so I cannot argue it is the “wrong” thing to do.

Likewise, no one has the data to prove one way or another how the active universe or your selection criteria will play out in the long run. I am NOT proclaiming that I do. And, while Sharpe’s paper was completely accurate in terms of measuring how the average dollar invested in active will result in the return of the market less expenses, our universes generally are not capital weighted and we think the entire premise of active management is a bet on being above average. It would be rather absurd to incur the higher fees of active management under the assumption your active results will be average.

I do observe from this however, that my ability to give appropriate balance and confidence in achieving clients’ goals is better with passive investments than the additional uncertainty I accept by applying active management. I’m not confident enough (or over confident?) to say that I think I have a 50% chance of beating the market by 1.2% for the next forty years, in essence saying a 50% chance at top quartile results over 40 years. Some might say that bet is extreme. I would say that bet is extreme. Nor would I be 90% confident that I can select managers that will make up their fees. Statistically, that is a huge bet. To me, there is too much uncertainty and for it to be worth the bet, I would need more facts to back up this speculation before gambling with my clients’ financial future.

There are so many other things that we can control. Controlling the risk of when we retire, how much we spend, how much we save, what we leave behind to our heirs, taxes and even the investment risk in our portfolios is at least probabilistically controllable. We even have some control over measuring and anticipating the uncertainty of how markets may influence our confidence in achieving our financial goals.

There are some semi-active strategies that do not make this sort of bet on alpha and these are worthy of consideration (for example, our partnership with Parametric Portfolio Associates where matching the market at a low cost is the goal, but in mimicking the market exploit tax loss harvesting in an attempt to enhance after tax returns).

We are making a bet here either way. One has a great deal of relative certainty with it (passive), and the other materially shares similar results, with the exception of unknown and immeasurable, albeit remote extremes (active) that may work for us or against us.

My preference, and probably that of most investors and advisors if they understood it and were truly objective about it, would be take the bet of having high confidence of having similar results with essentially no risk of either extreme. If you make the opposite bet, based on confidence you have, secrets you have not shared but are proven, then I wish you luck. I won’t need it when it comes to achieving investors’ goals and I’ll save my luck for Vegas.