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Active and Passive Arguments: In Search of an Optimal Investment Experience

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Should we choose to make our investments actively or passively? We propose a structure for thinking about the arguments and counter arguments to this question and enrich the discussion by exposing a middle ground between them. This requires distinguishing between general truths, opinions and falsehoods. We begin with logic and reason, but develop arguments that include non-quantifiable emotion as well, arguments that are not often discussed explicitly by academics or practitioners. It is these emotional benefits that push us more strongly towards active, while logic and reason pull us towards passive. In the end, there is no "right" answer to the question. Our individual answers require self-insight as to our needs and preferences, and a decision on how much to pay for the benefits we derive.

Should we – you, gentle reader, and I – choose to make our investments actively or passively? Active and passive arguments wind tediously through the market seasons in a yellow fog of misinformation and passionate rhetoric, even with insidious intent at times.

Both sides can overdo it. Proponents of passive investing can be dogmatic, condescending, disparaging of alternative viewpoints and inflexibly focused on minutiae. Advocates of active can be manipulative, slick, overdressed and arrogant in their luck.

Our question is one of individual choice. I am not asking whether investors, as a class, should invest actively or passively, nor am I trying to win the battle for one side or the other. Rather, I want to blow away the yellow smoke. At its heart the question is a debate between emotion and reason, between faith and skepticism, perhaps even between hope and despair. Of course, there is a place for both active and passive – the marketplace for investment management is evidence enough of this.

More specifically, my goal is to propose a structure for thinking about the arguments and counter arguments, and to enrich the discussion by exposing a middle ground between them. This requires distinguishing between general truths, opinions and falsehoods. I begin with logic and reason, but develop arguments that include non-quantifiable emotion as well, arguments that are not often discussed explicitly by academics or practitioners. I believe these emotional benefits push us more strongly towards active, while logic and reason pull us towards passive. There is no "right" answer to our question, and sensible people will come to their own sensible conclusions.

The progress of this essay is as follows: I start with an overview of the issues, identifying three main considerations and then digress to emphasize a couple of key arithmetic and empirical facts. I return to discuss the main considerations in more depth and in the final section, address some of the bad arguments against passive investing and some of the good questions to ask of an active manager.

> **AT ITS HEART THE QUESTION IS A DEBATE BETWEEN EMOTION AND REASON, BETWEEN FAITH AND SKEPTICISM, PERHAPS EVEN BETWEEN HOPE AND DESPAIR**

Overview of the Issues

The following three considerations frame our discussion.

1. Are there inefficiencies in the market?
2. Can we or our advisors identify the managers who have persistent skill?
3. Will the benefits we derive overcome our costs?

We would go active if we answer "yes" to each of these. Our context is that of a competitively traded market of securities (I am thinking of stocks, but most of the discussion applies to bonds as well) and a relatively liquid market with extensive information disclosure. A passive portfolio purchases the same fraction of each and every company's outstanding shares and is managed so as to achieve the capitalization-weighted average return of all securities in the market. I use the term "passive" and "indexed" as synonyms. The index includes all securities, not a subset of them. An implementation of a passive or indexed portfolio can never be perfect but aims at a closely tracking approximation to its targeted goal at low cost.

The first consideration – market efficiency – is where the discussion often starts. If we truly believe that the market is informationally efficient, an active

manager cannot add value, and perhaps we should simply go passive. Most of us believe that the market is not totally efficient, so we need to dig more deeply.

The second consideration requires discriminating between skill and luck. To go active, we need to be convinced of our active manager's consistency and skill. We need to do this ahead of time; we need to believe that the skill will persist, or at least that we will be able to identify when it deteriorates. This is perhaps the most complex pragmatic issue, the place where the main discussion should focus.

Having identified skilled managers, we come to the third consideration, which is relatively straightforward in concept. If the active benefits are high enough and their costs are low enough, then go active. If the costs are too high, then go passive. Costs typically include risks, taxes, fees, transaction and trading costs. Excess performance – or alpha, an expectation of excess performance – is a primary benefit, but there are others that are not so easily measured. It is harder to evaluate benefits and costs when they are not quantifiable or even explicit.

When it comes down to it, these are the main issues. Note that active managers provide an important social service. They ensure that information spreads quickly and efficiently; they provide liquidity. There will always be active managers. Without them, there would be no mechanism to set prices and the opportunities for intelligently adding value and information.

Nonetheless, my framing places the burden of proof on the advocate of active management. The reason for this is, in part theoretical – the CAPM identifies the importance of the cap-weighted market average – and in part empirical – reliably successful and skilled managers are hard to find, while passive investing is easy and inexpensive.

Initial Observations

Debates are typically resolved using formal arguments, empirical arguments or a combination. I begin by being politic, cautious and meticulous. Here are two objective premises that both sides will probably accept; one is formal and one empirical.

The Arithmetic of Active Management

Sharpe [1991] crisply articulated the fundamental theorem on the arithmetic of active management: 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.[1]

These assertions hold for any time period. Moreover, they depend only on the laws of addition, subtraction, multiplication and division. Nothing else is required.[1]

THE CONCEPT OF MARKET EFFICIENCY IS A USEFUL CONSTRUCT IN ECONOMIC THEORY BUT IS NOT SO USEFUL IF TAKEN LITERALLY IN REAL MARKETS

This theorem is a simple tautology requiring almost no proof. It is too frequently overlooked in the discussion. By definition, passive provides the return of the average dollar invested in the market. Some active investors will do better than this average, and some will do worse. The average active dollar will underperform passive because of costs; the higher the costs, the poorer will be the average active performance. In a more efficient market, the distribution of active investor returns will be tighter. In a less efficient market, there will more opportunity for a skilled active manager, and there will be a greater downside from a poor manager. Note that this theorem does not require market efficiency. It holds in inefficient markets and over any time period.

On Using Empirical Data

To study the issues, many researchers work with data on managers' past performance. Such data is often useful but must be interpreted with care, as it usually has a survivorship bias. Every year the underperforming records of many active managers expire and most databases record the survivors, not the population of all managers.

Other complexities arise with empirical data. It is not unusual to define the "index" as the S&P 500 and to use this to evaluate managers who select securities outside this particular set of stocks or, to equal-weight rather than to cap-weight managers when averaging their performance. This is not "sensible" averaging in the words of the theorem. Any study that shows the performance of a set of active managers outperforming a passive average mathematically must have issues with survivorship bias, ill definition of the average or some other data issue.

This is not to say that empirical studies are not useful. On the contrary, data allows us to set our expectations for how much alpha we might hope for. It allows us to gain experience in separating the manager alpha signal from noise, to explore whether performance persists, to study how the cognoscenti do in comparison with the illiterati, to study how the distribution of active performance varies over time, etc. In this article, I do not focus on data studies.

Three Main Considerations

Arguments on Informational Efficiency

The concept of market efficiency is a useful construct in economic theory but is not so useful if taken literally in real markets. I am, after all, seeking a pragmatic rather than a theoretical discussion.[2]

The use of the term *passive* is perhaps unfortunate as it has the negative connotation of being inert, being acted upon rather than of acting, of offering no opposition or resistance.[3] The active advocate sees passive as being mechanistic and "informationless," of giving in to the decisions of others.

This is too extreme for the passive proponent who observes that prices encapsulate the wisdom, information and expectations of a vast amount of market intelligence. This is a powerful concept, underlying capital pricing and

investment management. A passive investor can exploit the prices that are set by active investors, even if he believes that market inefficiencies exist. To beat the market, he points out that one needs to add something that is not already contained in these prices. Here is the irony as expressed by Ellis [1992]: *The market isn't hard to beat because it is dominated by stupid people. It's hard to beat because it's dominated by very bright people.*

The active advocate is not comfortable accepting consensus prices, doing so is too close to believing in market efficiency. He does not have faith in them or trust them. How can a market that drops 5%-10% in one day with no real news be efficient? A decision to accept consensus prices means giving up his individuality and decision-making capability. Most people he knows are not rational,[4] and he is aware of the irrationality of crowd behavior. How then can the market prices be correct?

Market efficiency is a key conceptual discussion as it highlights the fact that opportunities to add value are not easy or obvious; but this discussion does not directly address our question. A belief in market efficiency may be *sufficient* for going passive, but it is not *necessary.*[5]

MARKET EFFICIENCY IS A KEY CONCEPTUAL DISCUSSION AS IT HIGHLIGHTS THE FACT THAT OPPORTUNITIES TO ADD VALUE ARE NOT EASY OR OBVIOUS; BUT THIS DISCUSSION DOES NOT DIRECTLY ADDRESS OUR QUESTION

Arguments on Skill and Luck

In evaluating manager performance, it is difficult to distinguish skill from luck. Noise and uncertainty are high. The more efficient the market, the harder it is to identify skillful managers and the more costly it is to search for alpha.

Certainly, a large number of bright and eager participants spend time and money searching for opportunities or anomalies. As a result, opportunities in most publicly traded markets are rare. Those that exist fast become unsustainable as other investors observe and imitate. Finding them becomes harder all the time.

The active advocate's first argument is typically his past performance. This doesn't cut any ice for the passive proponent who observes the poor historical record of most active managers. In order to succeed, the active manager must be better than the best managers, not better than the average. He points out that in any population of active managers there will always be a winner and that a lucky break is easily spun as evidence of skill. Taleb [2001] points out that a manager is considered good because he made money, he did not make money because he was good.

The honest active advocate counters with: "Here are my specific ideas, I have found the following opportunities, I believe I have outstanding skill that will persist, and I will convince you of this." Those who are in the business of selecting managers will similarly try and prove their skill. The less honest will, with a smile, presume clairvoyance.

While factual and measurable, past performance is of little relevance to this discussion. Not everything that can be counted counts. There is little empirical evidence that past performance persists. Furthermore, statistical analysis of performance often fails in dealing with unlikely events, malicious counter parties, or when apparently reliable returns are really insurance payments for covering an unrecognized potential catastrophe.

The winner of the search is the manager with the best active story. To the passive diehard, the active manager can never satisfactorily prove his skill because even the greatest success can be explained by luck. On the other hand, the active champion's promise of continued skill cannot be absolutely refuted.

For us, let us suppose that we have found an active manager, and we have a compelling case for where his edge is coming from. We then need to move on to costs.

Arguments on Costs and Benefits

In discussing costs and benefits, the passive proponent argues simply that the costs of active management are high. There are trading costs, management fees, taxes and the expenses of monitoring an active manager and replacing him when necessary, not to mention the added risks. For him, these costs exceed their benefit, which he sees as the unlikely possibility of alpha. A passive portfolio is substantially less costly to manage.

The active advocate can't easily dispute the implementation costs. Does the passive proponent have him pinned and wriggling on the wall? For the active advocate, there is something missing from this, some poetry. Active provides a more complex set of softer benefits that count but cannot be counted. Here are a few examples. They are usually disguised – even denied – rather than being openly or directly conceded.

Agency Arguments. As investors, we often work through an advisor or consultant, an agent who provides services including discipline, perspective, connections to good ideas and a focus on implementation detail. The agent provides personal attention, a human and symbiotic relationship.

The presence of an agent brings additional issues, particularly when his compensation is based on superior performance. Consider, for example, a corporate pension fund officer. Going active gets him personalized attention, customized research and advice, and a convenient scapegoat if things go wrong; his job may even become enjoyable.

Arguments from Psychological Benefit. When we make active decisions, we are forced to be on our toes, we avoid complacent self-satisfaction. We never stop questioning, pushing ourselves to the edge. Active management satisfies a need for control, perhaps even drama, thrill and risk-taking. We feel alive; there is a steady adrenal excitement or at least on-going entertainment. We squeeze the universe into a ball and roll it towards an overwhelming question. In contrast, with passive we are etherized.

Many of us derive solace from a search for patterns in noisy data, particularly if we think we can obtain insight, information or influence. It quiets the mind. We derive pleasure from ownership and from the process of selecting what to buy. We like to feel in control of our financial destiny. Active offers hope when markets are down and when times are tough – we are not alone; our guardian angels and agents care for our needs and hold our hands. We have done the work and paid the price to expect this. And, on lingering Sunday afternoons we fondle and fiddle with our toys, our motorcycles and stock portfolios.

The passive proponent sees the market as a Japanese pachinko parlor, a noisy roulette table. He tolerates the market uncertainty and seeks his satisfactions elsewhere. A Zen peace comes with giving in. He has heard the mermaids singing, each to each, and does not think that they will sing to him.

Appeals to Authority, Status and Uniqueness. Most of us like to believe that we are independent thinkers, superior to that mass of average people. Evolution demands this.[6] Perhaps because deep down we doubt, and we incur substantial expense to convince ourselves and others of our uniqueness.

We like to hear success stories; we want to be associated with the winners and to be winners. Even without financial benefit, we root for our sports teams and thrill in the game. Newspaper and television reporters are sensitive to this and encourage it. It touches something basic in us, and it sells their product. So, people like Warren Buffett and Peter Lynch become popular authorities, exemplars of active success. This is ironic to the passive proponent, as both Buffett and Lynch have pointed out that passive is appropriate for most investors.[7]

Some of us may regard these emotional benefits with cynical disdain. Economists often deride them as being "non-economic." Or, with the formulated phrases of rational decision-making, they sneer of irrationality. Some money managers and consultants, with their own psychological needs and reasons for doing what they do, disparage them. But let us not underestimate their importance. Emotion and reason are closely intertwined and cannot be easily separated (Damasio [1995], LeDoux [1996]). Emotion is rational in the sense that it probably has an evolutionary basis. So, emotional benefits are a key element of most decisions, and all our purchases involve some notion of emotional well-being. Money is important to us for reasons other than its purchasing power. It is close to the core of who we are. It is connected to our dreams, our spirit, hope, security and status, and is often very private. To many of us, our financial wealth is a central part of our being, and we lose self-esteem and even our identity if we are ruined. The feeling of control, confidence and uniqueness that comes with active investment management is a good buy for many investors, even at a high price. The value of active management goes far beyond economic return, and its risks encompass much more than price volatility.[8] In the marketplace for investment management, many more investors go active than go passive. Investors have valid – if usually implicit – reasons for this.

ARGUMENTS HAVE BEEN MADE THAT ACTIVE OUTPERFORMS IN DOWNWARD MARKETS, PROVIDING PROTECTION WHEN THE MARKET CRASHES, THAT ACTIVE OUTPERFORMS IN PERIODS WHEN VALUE (OR GROWTH) OUTPERFORMS, THAT ACTIVE VALUE MANAGERS OUTPERFORM BUT THAT GROWTH MANAGERS DO NOT

More on Active – Bad Arguments and Good Questions

As emotional and rational beings, let us make our decisions with self-insight and with solid reasoning. Self-insight can be difficult to achieve, and emotion can be appropriate or inappropriate.[9] And, supposedly rational arguments can be fallacious. Because many benefits of active are not quantifiable, its advocates struggle to make their case. The best active arguments are those that argue the pros of active. Much weaker are those that argue the cons of passive. In seeking an active manager, we need to avoid the bad arguments and ask the right questions. In this section, I expose some obtuse old arguments that are easily and objectively refuted and revisit a few key questions.

Arguments from innumeracy discount the key arithmetic of active management. These arguments use data to "prove" successful performance of a population or class of active managers, of the behavior of passive in certain market environments or in certain subsets of markets. Arguments have been made that active outperforms in downward markets, providing protection when the market crashes, that active outperforms in periods when value (or growth) outperforms, that active value managers outperform but that growth managers do not. There are other variations, other visions and revisions too.

Arguments from lack of information claim that passive is "blind", "insightless" or "mediocre." These deny that market prices encapsulate the consensus information and opinion of a large number of informed participants.

Arguments from mean-variance inefficiency express a dislike for the average nature of indexing by proposing another benchmark that is in some way better. They argue, for example, that the market average is not a good place to be, or that market diversification can be improved. A subset are arguments against cap-weighting. Individual active managers often overweight small names at the expense of large names, and their excess performance is negatively correlated with that of large cap stocks. One assertion goes that the cap-weighted index is flawed because large cap stocks dominate. Another observes that small cap stocks can be expected to outperform.[10] These are active notions, and as such, need to be justified independently of the active/passive decision.

And there are red herrings. There are criticisms of specific index definitions that proceed to the false conclusion that passive is therefore

flawed as a strategy. For example, the S&P 500 index has been criticized as having difficulties. (As a popular subset of the whole market, some exploit its changes and affect the movement of its component prices.) The strategy of indexing has been blamed for perceived evils such as moving the market higher or causing a crash;[11] and some active advocates complain that the index is not a good measurement criterion, that their performance should be measured against something else.

Some beg the question by identifying a characteristic of the market that is disliked – for example, it is too expensive, or large caps are too expensive, or technology stocks are too expensive – and then argue that one should not be invested in the market average because of this undesirable characteristic. A subtle version of this criticizes indexing as a "momentum strategy."[12] When reason fails, there are emotive or hostile arguments from fashion and patriotism that criticize passive as "just a fad," as a "cop-out" or as "anti-American".

There are many good arguments for active, but these are not they. Active ideas need to be judged on their particular merits rather than by derogating passive. More positively, many of these arguments contain this implicit plea: "I am not average, neither are you. I have good ideas, and they are the better choice." This is what most people want to hear. Despite the obvious fallacies, if we dig between the words we can sometimes find a hidden truth. Calling the index "mediocre" expresses distrust of consensus prices. Complaints of index-relative performance measurement contain a valid kernel: the index benchmark does not evaluate the non-economic and psychological benefits that the active manager provides. If it is an American characteristic to express our independence, to seek the best, to push to the limits, then even the argument that passive is anti-American may have some truth.

Bad arguments are disingenuous not the least because they distract us from asking key questions of ourselves and of the managers. We should know our reasons for deciding to go active, what we expect to derive in performance and other benefits, and our costs.

There are many superior investment ideas that have worked in the past. Active investors have had success at certain times with more timely data, with new technology to exploit irregularities, with better mathematical models or more accurate statistical methods. Some successful ideas have been related to arbitraging anomalous prices in different markets, to providing liquidity, to reducing expenses or risks and to exploiting tax options. Most certainly, there are people who will provide superior returns in the future as well. Many exceptional managers are attempting to beat the passive average, and some will succeed, at least for a while.

Active management is difficult, and the decision to choose a particular manager needs to be made with care. For any active idea, it matters a great deal why active strategy is supposed to work. It is the active advocate's responsibility to argue why the idea would do better than passive over the long term. In interviewing an active manager, we should avoid a focus on past performance and warily mistrust the commonplace claim: "I am a clever person, and I know this because I have done it before." To obtain superior investment returns, the manager should have a theory or investment philosophy that governs his thinking and that provides a source from which his superior value derives. The manager must be able to explain why he is better than the best active managers, not better than the average – it is the best that set prices and influence where profits and losses will be made. The challenge for the active manager is: how do you do it? Where does your added value come from; how are you exploiting something that isn't known; how are you providing better service; what do you see that others don't? This is not to say that these questions are enough. In deciding to go active, of course, we need to do even more work. We need to evaluate the risks the manager will incur, to consider the investment process, costs and to perform other duties of diligence.

TO OBTAIN SUPERIOR INVESTMENT RETURNS, THE MANAGER SHOULD HAVE A THEORY OR INVESTMENT PHILOSOPHY THAT GOVERNS HIS THINKING AND THAT PROVIDES A SOURCE FROM WHICH HIS SUPERIOR VALUE DERIVES

Conclusion

Passive investing is a difficult concept for many to accept, perhaps because of its fundamental paradox. When we aim at the average, we perform better than the average. The key drivers to go passive are a comfort with consensus prices, the difficulty in finding a skilled manager and the high expense in doing so. We do not need to believe in efficient markets to go passive.

As the market evolves, there will most certainly emerge active opportunities. At any point in time there will be skilled managers who provide services of value. Such active managers are rare and are to be respected. In going active, we should start from skepticism, seek to understand the source of the manager's skill and not be overly influenced by past performance.

In going active, we need to identify a manager who can satisfy our needs, whether they be economic or psychological. We are after an optimal investing experience, and it is worth paying to get there. When the benefits are large enough, active is rational, even in efficient markets. Many investment professionals seem to be reluctant to discuss emotional benefits explicitly; economists appear to deny emotion as if it were an inferior notion.

So in the end, our question has no general answer; there is a place for both active and passive management. Each of us must answer the question for ourselves, being honest about our needs and preferences, making personal trade-offs and choosing how much to pay for the benefits we derive.

Arguments will still come and go. Our passive proponent will conclude that "No, he is not Prince Hamlet, nor was meant to be." And our active advocate will dream of riding seaward on the waves, combing the white hair of the waves blown back. ■

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Endnotes

1. Sharpe continues: "This need not be taken as a counsel of despair. It is perfectly possible for some active managers to beat their passive brethren, even after costs. Such managers must, of course, manage a minority share of the actively managed dollars within the market in question. It is also possible for an investor (such as a pension fund) to choose a set of active managers that, collectively provides a total return better than that of a passive alternative, even after costs."
2. For a recent articulate and blessedly nontechnical paper on the academic debate and arguing for efficiency, see Rubenstein [2001]. Rubenstein defends the case for rational markets against the more recent psychologically based arguments of irrationality. Lo and MacKinlay [1999] make the point that the efficient market hypothesis is neither well-defined nor refutable. They discuss the theoretical issues of market efficiency in depth, as well as the related but not equivalent question of whether prices fluctuate randomly. They argue that financial markets are predictable; this is not inefficiency or irrationality, but the oil that lubricates the gears of capitalism. Grossman [1980] argues that perfectly efficient markets are an impossibility, for, in such a market, the return to gathering information would be zero, there would be little reason to make a trade, and markets would collapse. There are always reasons for investors to trade for reasons other than information: changes in preferences, risk characteristics or needs for liquidity. This is not irrational or inefficient.
3. Some creatively express passive performance as "par," and so remove the negative connotation [H. Evensky, private communication].
4. This is a deeper philosophical question, and my comments here are informal. Certainly, my mother-in-law is far from what I think of as rational.
5. In other words, to belabor the point, even if we believe that the market is inefficient, this is not yet enough to drive us to be active. Furthermore, if we go passive then we are not necessarily implying that we believe that the market is efficient.
6. Robert Wright in *The Moral Animal:* "Think of it: zillions and zillions of organisms running around, each under the hypnotic spell of a single truth and all these truths identical, and all logically incompatible with one another: 'My hereditary material is the most important material on earth; its survival justifies your frustration, pain, even death.' And you are one of these organisms, living your life in the thrall of logical absurdity."
7. Warren Buffet: "... the best way to own common stocks is through an index fund ..." (1996 Shareholder Letter, Berkshire Hathaway Inc.) Peter Lynch: "Most investors would be better off in an index fund" *(Barron's,* April 2, 1990, p. 15).
8. Note that I am not judging whether these motivations for active are psychologically healthy or not. The classical Freudian perspective perhaps would view the investor as conflict-laden, filled with anxiety. In this model, active management would be a defense and would appeal to those with a need for control. More positively, neo-Freudians would see the need for adaptation, for exploration, for being involved and positively engaged in the world as important and healthy. With either perspective, active provides value. (A focus on the experience of past investment performance itself implies a sort of psychoanalytic theory of investing: that which affected the manager in the past, in his formative years, still influences him; his past behavior is a pattern and indicates something about how he will do in the future.)
9. I have argued, for example, that one of the benefits of active is the confidence and excitement it brings. It is one thing if I buy a roller coaster ticket aiming at excitement; it is another to think I am making a good investment choice when I am really being misled. Similarly, if I buy toothpaste because the model in the advertisement is attractive then yes, it does mean that I have responded emotionally; but this response is not necessarily what I wanted or what is good for me, particularly if a better toothpaste would help prevent cavities. (A detailed discussion of inappropriate emotion is beyond the scope of this essay.)
10. Berk [1997] addresses this topic well and points out that small (or cheaper) stocks should be expected to outperform, often because they are more risky.
11. Malkiel and Radisich [2001] address the popular recent argument that the success of indexing in the late 1990s was self-fulfilling and argue against it empirically. The authors conclude that the success of indexing results from the general efficiency of the stock markets; the gap in performance

between index and active is fully explained by the management and transactions costs involved. There is no evidence that the success of indexing is self-fulfilling; there is no evidence that indexing has a permanent effect on the pricing of securities.

12. Attacking indexing as "the ultimate momentum strategy" is misleading, and here is why. Momentum is a relative notion, and the reference point needs to be apparent. In equity markets, the sensible neutral reference point of zero momentum is the market average, the index itself. This argument is really implying a belief in price reversal and complaining that the index is a momentum strategy relative to this. A belief in price reversal is a valid active notion, but – as with all active ideas – it needs to be motivated and defended on its own merits. So this is like arguing that white isn't a neutral color because it doesn't have enough of the favored green. A related fallacy is: "A passive portfolio has a disproportionate investment in stocks that have been most successful in the past." The truth is that a passive equity portfolio makes the same investment in all companies – buying the same fraction of each company's outstanding shares – regardless of their prices or whether they have been successful or not; that passive invests more in successful stocks is an llusion – the investor has to pay more for more expensive stocks (because they are more expensive, duh!) but he is not buying more of them (see Stein [2001]).

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Notes