

# How active management survives

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## Abstract

There is much evidence that passive equity strategies dominate active equity management, but many investors remain committed to active investing despite its poor relative performance. We explore the behavioral-economic hypothesis that investors fall prey to the conjunction fallacy, believing good returns are more likely if investment is accompanied by hard work. This is an especially plausible manifestation of the conjunction fallacy, because in most areas of life, hard work leads to greater success than laziness. Our internet survey results show that from 30% to over 60% of higher-income, over-30 individuals fall prey to the conjunction fallacy in this context, raising significant questions for law and regulatory policy, including whether actively managed equity products should carry warnings, at least for retail investors.

## KEYWORDS

active management, asset management, behavioral finance, investor psychology, irrational investors, passive management

## JEL CLASSIFICATION

G11; G18; G23; G24; G40; G41

## 1 | INTRODUCTION

I think that there is far too much work done in the world, that immense harm is caused by the belief that work is virtuous, and that what needs to be preached in modern industrial countries is quite different from what always has been preached. —Bertrand Russell, *In Praise of Idleness* (1932)

In most areas of life, hard work generates better results than laziness. Time spent with one's children creates better relationships. Business owners who put more effort into serving customers' needs usually have stronger businesses.

Thanks to Brad Cornell, Robin Powell, and Jan Hendrik Witte for helpful comments on our preliminary draft. We also have received very useful comments from industry participants and observers who will remain anonymous. Thanks very much to editors and our anonymous referee for very helpful guidance.

Most students cannot achieve high levels of educational achievement without a correspondingly high level of diligent study. Running a marathon requires months of training. Successful academic research requires many hours of reading, analysis, and writing. This work ethic is an ingrained part of our culture. Benjamin Franklin (*The Way to Wealth* (1758)) had his fictional counterpart Poor Richard say “If you were a servant, would you not be ashamed that a good master should catch you idle? Are you then your own master, be ashamed to catch yourself idle[.]” Max Weber famously attributed the evolution of capitalism in Europe to the Protestant work ethic (Weber, 1930).

In rare areas of life, however, doing little or nothing is the dominant strategy. Fasting appears to have dramatic health benefits (Anton et al. 2018; Mattson et al. 2018). Meditation—doing nothing but observing one's thoughts—can be an effective complementary treatment for some psychiatric conditions (Shapero et al. 2018). Counterintuitively,

perhaps, investment in publicly-traded common stocks in developed markets is one of the rare areas where passivity is usually the better strategy. Because only a relatively small amount of active management may be needed to keep market prices close to efficient (Grossman and Stiglitz, 1980), and active management must, on average, be a zero-sum game (Sharpe, 1991), most investors can earn better returns at lower cost by investing in inexpensive passive index funds that do not waste resources—most notably, fees and trading costs—“picking stocks,” that is, looking for misvalued securities (French, 2008). Beyond fees and trading costs—and perhaps much more important in explaining underperformance—passive indexing strategies are also difficult for active managers to beat because a small number of securities generates much of the index return and active managers picking subsets of passive indexes have a high probability of missing or underweighting those securities (Ikenberry et al. 1992; Heaton et al. 2017; Bessembinder, 2018).

Much evidence demonstrates the inferiority of most actively managed funds.<sup>1,2</sup> *No evidence* demonstrates that most actively managed funds—whether managed by stock brokers, managers of active mutual funds, or even the best-known hedge fund managers—reliably beat passive strategies. Accumulated evidence of underperformance by active managers has generated a massive shift to passive investing.<sup>3</sup> Puzzlingly, however, active equity management remains pervasive. Given its poor performance relative to passive indexing, it is difficult to explain how so many active managers who deliver unimpressive performance at high cost relative to other investment alternatives continue to attract and retain investors.

We explore the hypothesis that investors fall prey to the belief that good investment performance is more likely if the investment manager works hard, in effect being misled by belief in the work ethic. In psychological terms, we find that potential investors fall prey to the conjunction fallacy. This fallacy is most famously tied to the “Linda problem” of Tversky and Kahneman (1983):

Linda is 31 years old, single, outspoken, and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in antinuclear demonstrations.

Which is more probable?

1. Linda is a bank teller.
2. Linda is a bank teller and is active in the feminist movement.

Many respondents select (2) as the more probable outcome, but that is logically impossible. The event “Linda is a bank teller” and “[Linda] is active in the feminist movement” is a joint event, the occurrence of *both* “Linda is a

bank teller” and “[Linda] is active in the feminist movement.” The joint probability of two events  $A$  and  $B$ , denoted  $P(A, B)$ , is the probability of one of them, given that the other one occurs, times the probability the other one occurs. That is,  $P(A, B) = P(B|A)P(A)$ . If  $A$  is the event “Linda is a bank teller” and  $B$  is the event that “[Linda] is active in the feminist movement,” then the joint probability of “Linda is a bank teller and is active in the feminist movement” must be less than or equal to the probability “Linda is a bank teller,” since the conditional probability of “[Linda] is active in the feminist movement” given that “Linda is a bank teller” is less than or equal to 1 (because it is a probability bounded between and including 0 and 1). Contrary to the selections of many respondents, (2) cannot be probable than (1).

Now consider the following question:

ABC Fund invests in common stocks listed on United States stock exchanges. Which is more likely?

1. ABC Fund will earn a good return this year for its investors.
2. ABC Fund will earn a good return this year for its investors and ABC Fund employs investment analysts who work hard to identify the best stocks for ABC Fund to invest in.

These questions should be harder to err on than the Linda problem. There is less background information given before the question. This should make it harder for respondents to fall prey to the “representativeness heuristic,” picking choice (2) because it is more reflective of the information given as background. Nevertheless, as described further below, a very large percentage of respondents select choice (2) as being more likely for both questions.

The conjunction fallacy can explain why so many active equity managers survive despite poor or mediocre results and high costs. It may simply be too difficult for a substantial number of investors to believe that superior returns are available by doing nothing but investing in an index fund that costs less than four basis points (4/100ths of 1%) rather than fees as high as the “2 and 20” compensation (2% of assets under management and 20% of profits) of a typical hedge fund or even the much smaller but still high fees of actively managed mutual funds. This may be especially true where active equity managers *do* appear to work hard trying to deliver superior returns, even though they ultimately fail.

Our work is related to several other papers that attempt to explain the persistence of so much active equity management. For example, Pastor and Stambaugh (2012) present a model where rational investors fail to learn that their active fund manager is expected to underperform going forward. Gruber (1996) also argues that investment in active mutual

funds can be rational despite evidence of underperformance, as does Glode (2011) and Choie, Kahraman, and Mukherjee (2016). All of these papers must stretch hard theoretically to justify persistent *rational* investment in active equity management despite its underperformance. Our work is also related to studies of biased behavior by retail investors, including Odean (1998, 1999), Barber and Odean (2000), Grinblatt and Keloharju (2001), Frazzini and Lamont (2008), Bailey, Kumar, and Ng (2011), and Ben-David and Hirshleifer (2012). Our paper is closest in spirit to Gennai, Shleifer, and Vishny (2015) who present a model where investors get “peace of mind” from investing with active managers they trust rather than in low cost passive funds. But most existing accounts force a rational, utility-based explanation onto what is, in our view, a fundamentally *irrational* choice (Bird et al. 2013; Foster and Warren, 2015). By contrast to most previous work, our paper draws upon research in the field of psychology to explain, rather than justify, the reasons underlying the choice of active investment. Using a well-established behavioral-economic decision problem, we illustrate the role of psychological bias in influencing choice of investment strategy.

Key to the interpretation of our results is our assumption that hard work *does not* lead to better money-management performance. The evidence seems to contradict that belief though it is not the fallacy with which we are concerned.<sup>4</sup> We are concerned with the conjunction fallacy that a good return plus hard work is more likely than the good return. The conjunction fallacy shows that people act as if they believe that good returns are less likely if the money is managed without hard work. That is our main point.

The conjunction-fallacy explanation for the survival of underperforming active equity managers—what we might call the “work ethic fallacy of asset management”—has important policy implications. The financial industry fights hard against regulation that would expose the high costs and risks of financial products. Given the high financial stakes for retirees and other investors and the evidence that the financial industry does more harm than good for many investors, the case for regulatory intervention—for example, developing programs to debias investors—is strong (Jolls and Sunstein, 2006). There is a strong argument, for example, that actively managed equity products should carry warnings, at least for retail investors. Our results may also be useful to financial advisers, along with other research on the difficulty of beating passive strategies, who try to do the right thing for their clients and steer them away from high-cost, underperforming investment options.

Our paper continues as follows. Section 2 reviews the relevant literature on the conjunction fallacy and its psychological underpinnings in this decision context. Section 3

describes our simple survey and the results. Section 4 discusses the policy implications of our results and Section 5 concludes.

## 2 | THE CONJUNCTION FALLACY IN ASSET MANAGEMENT

The conjunction fallacy is the tendency for individuals to estimate that the likelihood of two events occurring in combination (for example, Linda being both a bank teller and a feminist) is greater than the likelihood of just one of those events occurring on its own (Linda being a bank teller). Tversky and Kahneman's seminal paper established the pervasiveness of the bias in a variety of contexts (including medical judgments, monetary risk taking, and athletic outcomes) (Tversky and Kahneman, 1983). In hundreds of subsequent studies, researchers have tested the limits of the effect by varying aspects of task itself (framing, measurement type, etc.) and by introducing experimental interventions to increase accuracy (for example, memory aids and training in probability) (Moro, 2009; Nilsson et al. 2013). Nevertheless, the fallacy has proven remarkably robust. Depending upon the manner in which the conjuncts are presented, and/or the type of measure used, the magnitude of the bias typically varies from frequencies of around 25% to 60–70% bias rates.

The “representativeness heuristic”—the tendency of people to judge the likelihood of an event by how similar it seems to aspects of the parent population—is often appealed to in explanations of the conjunction fallacy, but it appears to be insufficient to explain the phenomenon. The conjunction fallacy emerges even in contexts that are not amenable to that explanation, namely, those in which little to no background information has been provided to participants. In one such demonstration, Tversky and Kahneman asked participants to consider the likelihood of a randomly selected adult male having suffered a heart attack. Participants were instructed to choose which statement was more likely:

- (1) This person has had one or more heart attacks.
- (2) This person has had one or more heart attacks and is over 55 years of age.

The majority of respondents selected the second option. Despite choice (1) being logically more probable, the addition of age-related information to choice (2) lends it an air of enhanced plausibility. This is because choice (2) suggests a *causal explanation* that is consistent with both participants' prior knowledge and objective reality (that is, the risk of heart attack does, in fact, increase with age). Qualitatively, choice (2) “feels” more likely to participants. In a paper examining boundary conditions of the conjunction fallacy, Wedell and Moro (2008) argue that framing that requires participants to make a choice between event outcomes

(as opposed to providing numerical frequency estimates) tends to elicit qualitative modes of reasoning. We believe this type of reasoning is characteristic of the real-world choice context investors face when deciding between passive and active management.

A considerable body of social psychological research on “feelings-as-information” theory shows that subjective, metacognitive experiences of this nature have significant influence on cognitive judgments (Schwarz and Clore, 1983; Schwarz, 2012). Faced with uncertainty, individuals attend to their own feelings as a source of information. Occasionally, this has a paradoxical effect. In one study, participants who were asked to judge their own assertiveness believed themselves to be more assertive after having been asked to generate only a few examples of assertive behavior versus many examples (Schwarz et al. 1991). The subjective difficulty of the task served as an additional piece of diagnostic information during formation of the judgment. Subjective feelings of “ease” play a similar role in the occurrence of the “availability heuristic” (Tversky and Kahneman, 1973). In Kahneman and Tversky's classic experiments, participants estimated that words beginning in “k” were far more frequent than those in which “k” was the third letter, on account of the ease with which the former words came to mind. Similarly, individuals have been shown to rate a statement as more likely to be true when it is presented in an easy-to-read font versus a more difficult one (Reber and Schwarz, 1999), and to judge stocks as less risky when the ticker symbols are easy to pronounce (Alter and Oppenheimer, 2006).

In the current context, we argue that the ease with which investors accept the idea of a connection between hard work and success intensifies subjective feelings of likelihood for the conjunctive outcome. The scenarios we presented respondents in our survey are similar to the heart attack problem, with one very important exception: the conjunctive options presented to our participants do *not*—based on existing empirical evidence—provide valid causal explanations. We argue instead that two psychological phenomena likely underlie investors' confidence in this false causal belief: illusion of control and the “just world” phenomenon.

With the illusion of control, people exaggerate their ability to personally control external events, thus preferring to be afforded as many choice options as possible—even when a wider array interferes with effective decision-making (Langer, 1975; Iyengar and Lepper, 2000). Feelings of self-efficacy serve important psychological functions, increasing persistence, improving well-being, enhancing mood, and even improving life expectancy (Deci and Ryan, 1985; Langer and Rodin, 1976; Taylor and Brown, 1988). Overly inflated perceptions of control, however, can impair task performance. In a study of over 100 investment bankers in

London (Fenton-O'Creevy et al. 2003), traders who were highest in illusory control were the worst performers, both in terms of actual remuneration and as reflected in managers' subjective evaluations of their performance. If traders themselves suffer from ill-founded beliefs in their ability to control financial outcomes, the situation is compounded when investors rely on these individuals to exert control on their behalf. In some situations, control-by-proxy can be a rational choice. In the domain of medical decision-making, for example, patients are likely better off allowing physicians to make critical decisions, a fact that they themselves appear to recognize. A survey of over 800 primary care patients found that respondents desired access to medical choices more than the ability to actually make the choice (Barnett et al. 2008). Over 93% of patients indicated a desire to know all available treatment options, but only 56% indicated a preference to make up their own minds about the ultimate course of treatment.

Control-by-proxy offers similar appeal to investors. The choice of active management provides investors with the opportunity to feel in control of their fate by promising access to a wide variety of choices, while simultaneously freeing them from the responsibility to navigate complex allocation decisions. A striking demonstration of the desire to control financial outcomes via proxy is provided by a series of experiments involving games of chance. Participants were given the opportunity to select a lottery ticket (or to spin a roulette wheel) at the conclusion of a study. When given reason to believe that a fellow participant was “lucky,” participants preferred to delegate the choice of the lottery ticket (or spin of the wheel) to that confederate rather than to take the action themselves (Enzle and Wohl, 2009). Even in cases in which event outcomes are clearly determined by chance, our desire for control can lead us to overvalue personal choice, whether that choice is exerted personally or via proxy.

Belief in a “just world” is a second psychological factor that may explain the strong subjective appeal of a causal association between financial success and active investment. The “just world hypothesis” asserts that people have a strong desire to view the world as a fair, predictable place—a place in which a person's merit and her fate are closely intertwined, and where hard work can be expected to yield just rewards (Lerner, 1980). While a large amount of research on the just world hypothesis focuses on harmful societal effects of this belief (that is, victim blaming), other work examines the influence of just world beliefs on decision-making. Decision makers with a strong belief in the association between hard work and success tend to engage in a range of counterproductive behaviors, spending excessive amounts of time reaching a decision and distorting perceptions of alternatives

in a way that unnecessarily complicates choice (Schrift et al. 2016).

The psychological tendency to believe in a just world influences investors on multiple levels. First, it undergirds the notion that hard-working experts should produce superior outcomes. Second, it allows investors to justify financial gains made in the stock market—providing moral justification for receiving so much for doing so little. Third, it encourages investors to overcomplicate what should be a relatively simple decision problem—believing that a more complex investment scheme is necessary to achieve good outcomes. This last point may go far in explaining the efforts to which some leading hedge funds go to give an appearance of hiring the “best and the brightest” even when their investment results are inconsistent with the value of that practice.

The confluence of illusions of control and just world beliefs probably leads investors to accept the idea of a causal link between traders' work and financial success. When asked to assess the likelihood of achieving financial gains in the stock market, investors employ these feelings as relevant information, judging success to be more likely with an active management. Using very brief surveys, we presented approximately 1,000 adults with a choice judgment task to test for the emergence of the conjunctive fallacy. Similar to Tversky and Kahneman's heart attack problem, we expected respondents to find the joint outcome more probable, due to feelings of fluency invoked by the assumed causal relationship.

### 3 | SURVEY AND RESULTS

Two samples of individuals over the age of 30 completed a brief, three-item internet survey. We used Survey Monkey's internet survey service to buy responses from the United States demographic described below (older and higher income). Research has shown that Survey Monkey is as reliable as Amazon Mechanical Turk, and that both are as reliable as slower and more expensive survey methods (see Bentley, Daskalova, and White (2017)).

Each sample was presented with a focal decision problem, a question that assessed the strength of their belief in the work ethic, and a simple self-report measure of level of experience with stock market investing.

The most straightforward test of our hypothesis was conducted with a sample of 1,004 individuals, roughly 57% male ( $n = 572$ ) and 43% female ( $n = 431$ ). All participants were above the age of 30 (roughly 34% between the ages of 45 and 60 and 41% over age 60), with household incomes in excess of \$100,000 (20% of the sample earned over \$200,000/year). This is the first question presented to that sample:

ABC Fund invests in common stocks listed on United States stock exchanges. Which is more likely?

(1) ABC Fund will earn a good return this year for its investors.

(2) ABC Fund will earn a good return this year for its investors and ABC Fund employs investment analysts who work hard to identify the best stocks for ABC Fund to invest in.

This question evoked a strong manifestation of the conjunction fallacy, with 62.8% selecting choice (2). This rate is on par with the magnitude of bias found in past studies using this problem structure. By comparison, the “heart attack” problem in Tversky and Kahneman (1983) produced a 58% error rate.

The second sample of 1,001 individuals consisted of roughly half male ( $n = 533$ ) and half female ( $n = 468$ ) participants above the age of 30 (roughly 50% between the ages of 45 and 60), with household incomes in excess of \$100,000 (24% of the sample earned over \$200,000/year). The initial question posed to participants in Sample 2 was:

ABC Fund invests in common stocks listed on United States stock exchanges. Which is more likely?

(1) ABC Fund will earn a good return this year for its investors.

(2) ABC Fund will earn a good return this year for its investors and ABC Fund was founded by a successful former Goldman Sachs trader and employs Harvard-trained physicists and Ph.D. economists and statisticians.

In crafting our conjunctive outcome for this version, we intentionally supplied very specific details. The joint possibility is highly constrained, with the names of two specific institutions included, Goldman Sachs and Harvard, and Ph. D.-level analysts. Our intention was to draw participants' attention to the low probability of the joint occurrence. Nonetheless, a high rate of participants fell prey to the conjunction fallacy, with 31% selecting choice (2). This rate is similar to that obtained by Tversky and Kahneman (1983) with a sample of statistically-trained graduate students.

Our explanation for respondents' choices emphasizes their belief in a causal connection between hard work and success. By this account, conjunctive choices could resonate most with participants who strongly endorse the work ethic, versus those who do not, leading them to inflate judgments of likelihood. To test this hypothesis, we measured beliefs in the work ethic using a second question common to both versions, “A person or business can achieve better results on any task by working harder than its competitors. Agree or disagree?”

Among participants in Sample 1, the average rating was 3.70 on a 5-point scale, with a negatively skewed distribution. Participants who selected either “strongly agree” or “agree” were categorized as “strong endorsers” of the hard

work ethic, whereas those who chose one of the bottom three response options were categorized as “weak endorsers.” A chi-square statistic was calculated to determine if endorsement of hard work was more prevalent among participants who committed the conjunction fallacy versus those who did not. The pattern of results was as predicted,  $\chi^2 = 3.23$ ,  $p = 0.07$ . Strong hard work beliefs were endorsed by a greater percentage of biased-choice participants than rational-choice participants. Sixty-five percent of those who strongly endorsed the work ethic fell prey to the conjunction fallacy, whereas 59.4% of the weak endorsers did so.

Hard-work beliefs were endorsed to a similar extent by our second sample; the average hard work rating was 3.62, with a similarly skewed distribution. As with the first decision problem, we calculated a chi-square statistic to test for an association between hard work beliefs and decision bias. A marginally significant relationship was found,  $\chi^2 = 2.78$ ,  $p = 0.09$ . Hard work beliefs were more strongly endorsed by those who committed the conjunction fallacy (e.g., 27% selected strongly agree), than those who did not (18% strong agreement).

Finally, we examined whether the rate of bias would vary as a function of participants' self-reported familiarity with stock market investing. In the first sample, 232 of our participants indicated some degree of familiarity with investing (23.1% answered strongly agree or agree to the statement “I have some knowledge about stock market investing.”). The magnitude of the conjunction fallacy did not vary as a function of investment knowledge. The biased choice was selected by 62% of the knowledgeable respondents and 63.9% of those without investment knowledge,  $\chi^2 = 0.36$ ,  $p = 0.55$ .

Participants in our second sample were considerably more familiar with stock market investing overall. Approximately half indicated some degree of familiarity (52% answered strongly agree or agree). In this sample, the rate of bias varied as a function of self-reported stock market knowledge. The biased choice was selected by 27.8% of the knowledgeable respondents and 34.7% of those without investment knowledge,  $\chi^2 = 5.52$ ,  $p = 0.02$ .

Looking across both samples, these findings reveal an interesting additional insight about the striking persistence of this bias. Even on our detailed, greatly constrained decision problem and among the self-reported savviest investors—those from the most highly knowledgeable subsection of our most highly knowledgeable sample (Sample 2)—the conjunction fallacy persisted 28% of the time. While this rate was reduced in comparison to less savvy investors, it is still notable given the circumstances.<sup>5</sup> The bias rate for low-knowledge investors with strong belief in the work ethic is especially high for this type of decision problem (recall

that Tversky and Kahneman's heart attack problem yielded a bias rate of 58%).

## 4 | DISCUSSION

The conjunction-fallacy explanation for investment with active managers offers a new solution to what is otherwise quite a puzzle. The evidence for the superiority of passive investment is overwhelming, yet many investors cling to more expensive and lower-return active management. But despite clear evidence, it may simply be too difficult for a substantial number of investors to believe that superior returns are available by doing nothing but investing in an index fund rather than investing with active managers. This is especially true where active managers advertise that they have “specialized investment expertise and extensive infrastructural support, seeking to maximize their investments [.]”<sup>6</sup> and that they “work harder and see farther, empowering the world's most talented minds with the resources and opportunities they need to achieve extraordinary results [.]”<sup>7</sup> The simplicity and power of the conjunction fallacy explanation certainly wins on the “Occam's razor” criterion compared with overly complicated “rational” models of adherence to active investment.

The conjunction fallacy explanation for the survival of active equity management—what we might call the “work ethic fallacy of asset management”—has important policy implications. Scholars have become more concerned that the financial industry exploits investors, selling investors products that are bad for them. But unlike other firms that sell products that are considered bad for their customers—tobacco, alcohol, and gambling, for example—sellers of active equity management cloak their products in dreams of a more secure financial future and better investment performance. As a result, some scholars have argued that only passive index funds be given the tax exemption for retirement savings (Avci et al. 2017).

The financial industry fights hard against regulation that would expose the high costs and risks of financial products. Most recently, in April 2016, the United States Department of Labor promulgated the so-called Fiduciary Rule under the Employee Retirement Income Security Act of 1974 (ERISA) that would have required investment advisers to act as fiduciaries when giving advice on covered retirement plans.<sup>8</sup> The Fiduciary Rule met overwhelming resistance by industry lobbying groups. The Chamber of Commerce of the United States of America, the Financial Services Institute, Inc., and the Securities Industry and Financial Markets Association, among others, brought suit to have the rule vacated, and won a victory in a recent decision by the United States Court of Appeals for the Fifth Circuit which held that the part of the rule requiring broker-dealers and insurance

agents to act in the best interests of their clients conflicted with plain text of ERISA.<sup>9</sup> The United States Department of Labor had earlier estimated that the rule would save retirement investors from \$95 billion to \$189 billion over 10 years by reducing conflicts of interest.

In May 2018, the Securities and Exchange Commission proposed a rule under the Securities Exchange Act of 1934 to require broker-dealers and their employees to act in the best interest of any retail customer when recommending any securities transaction or investment strategy involving securities.<sup>10</sup> But that rule would not require what would be most valuable: a clear, evidence-based warning attached to actively managed products disclosing the average superiority of more inexpensive passive strategies. We should have a warning similar to drug warnings: “Many active investment strategies underperform more inexpensive alternatives. Ask your broker for more information.” Given the high financial stakes for retirees and other investors and the evidence that the financial industry does more harm than good for many investors, the case for regulatory intervention is strong. Even *among* index funds, there is strong evidence that the financial industry is able to exploit some investors by selling them more expensive versions of the product with effective marketing (Elton et al. 2004). Other evidence suggests that the financial industry is able to sell higher fee products to lower IQ investors (Grinblatt et al. 2016). Ironically, some leading behavioral economists have even used results such as those documented by Kahneman and Tversky to profit by marketing their own “behavioral” actively managed funds.<sup>11</sup>

## 5 | CONCLUSION

In this paper, we test a very simple hypothesis: misplaced (in this context) belief in the work ethic explains the aversion that some people have to passive investing. Ours is not the first paper to offer an explanation as to why active management remains so popular despite the overwhelming evidence that people are better off investing passively. But most prior academic work has been from a rational viewpoint that we find implausible. Index funds continue to dominate actively managed funds, including some of the world's largest and best-staffed hedge funds such as Citadel and Bridgewater. Of course, there must be some active management to keep prices close to efficient. This is the classic argument of Grossman and Stiglitz (1980). But it probably is the case that we need much less active management than we see. And there is an enormous industry making money off investors in active management. While many companies make money selling products that are bad for people, the question is, as with smoking and drinking Pepsi, is why do people do it when they should know it is bad for them? Most of those other products create senses of pleasure. But

investors invest to have more money for future consumption. While it is possible that investors get some incremental entertainment by “gambling” in the stock market with active managers than with passive managers, our surveys suggest that potential investors incorrectly believe that “active” means “better” on a performance dimension. Financial-industry marketing hints that active management firms know this. Active manager advertising stresses the research and work put into investment products far more than the returns they generate.

Our results provide another reason for regulators to require better disclosures in the financial industry. If the industry cannot be relied on or mandated to act in their customers' interests (admittedly, something we do not require of other companies that sell products that are bad for their customers, such as tobacco companies, gambling companies, and soft-drink manufacturers), regulators at least could require evidence-based warnings on financial advertisements about the superiority of most passive strategies. Our results and other evidence on the difficulty of beating passive strategies also provide resources for financial advisers who want to do the right thing for their clients. Advisers who direct their clients away from overpriced, underperforming active equity products do their clients a great service, but it may be hard to persuade clients that advice to invest passively is more valuable than stock picking. Showing clients that they err in believing “active” means “better” may go a step in debiasing equity investors.

## ENDNOTES

- <sup>1</sup> For a collection of academic papers, see footnote 1 in Pastor and Stambaugh (2012). See also Daisy Maxey and Chris Dieterich, Indexes Beat Stock Pickers Even over 15 Years, *The Wall Street Journal*, April 13, 2017.
- <sup>2</sup> Chris Newlands and Madison Marriage, 99% of Actively Managed U.S. Equity Funds Underperform, *Financial Times*, October 23, 2016.
- <sup>3</sup> See, for example, Kate Beioley, U.S. active funds suffer record \$143bn “exodus” in December, *Financial Times*, January 17, 2019; Chris Flood, Vanguard Retains Title as World's Fastest-Growing Asset Manager, *Financial Times*, January 4, 2018; Attracta Mooney, Passive Funds Grew 4.5 Times Faster Than Active in 2016, *Financial Times*, February 11, 2017; Corrie Driebusch, Investors Pulling More Money From Actively Managed U.S. Stock Funds, *The Wall Street Journal*, January 13, 2016.
- <sup>4</sup> A fussy objection to our assumption would be that the evidence only shows that active management underperforms relative to passive management, not that underperformance is an increasing function of effort. We do not believe that assertion is testable, though the massive underperformance in some years of high-powered hedge funds such as Citadel and Greenlight Capital suggests, at a minimum, that underperformance is not a *decreasing* function of effort.

- <sup>5</sup> These findings deepen our concern over the degree to which unsophisticated investors can be led astray by bias in this context. We examined this further by looking at our most inexperienced investors—those from Sample 1, the low knowledge subset. We examined the strength of the association between belief in the work ethic and bias in this subsample. The bias rate was notably inflated (68.4%) among those who strongly endorsed the work ethic compared to those who did not (57.2% bias rate),  $\chi^2 = 5.83$ ,  $p = 0.02$ .
- <sup>6</sup> Franklin Templeton website, <https://www.franklintempleton.com/advisor/products/mutual-funds/equity-funds>.
- <sup>7</sup> Citadel website, <https://www.citadel.com/about-citadel/>. Citadel underperformed the S&P500 Index in 2016 and 2017, and lost nearly 60% in 2008, far worse than the -37% return to the S&P500 that year.
- <sup>8</sup> See Definition of the Term “Fiduciary”; Conflict of Interest Rule—Retirement Investment Advice, 81 FR 20946-01.
- <sup>9</sup> *Chamber of Commerce of United States of Am. v. United States Dep't of Labor*, 885 F.3d 360 (5th Cir. 2018).
- <sup>10</sup> <https://www.federalregister.gov/documents/2018/05/09/2018-08582/regulation-best-interest>.
- <sup>11</sup> See, for example, the website for Fuller & Thaler Asset Management, Inc., <https://www.fullerthaler.com>. At one page, for example, the firm states, “Investors Make Mistakes. We Look For Them.” This is, of course, the same approach taken in the marketing approach of most active managers.
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**How to cite this article:** Heaton JB, Pennington GL. How active management survives. *Financial Planning Review*. 2019;2:e1031. <https://doi.org/10.1002/cfp2.1031>