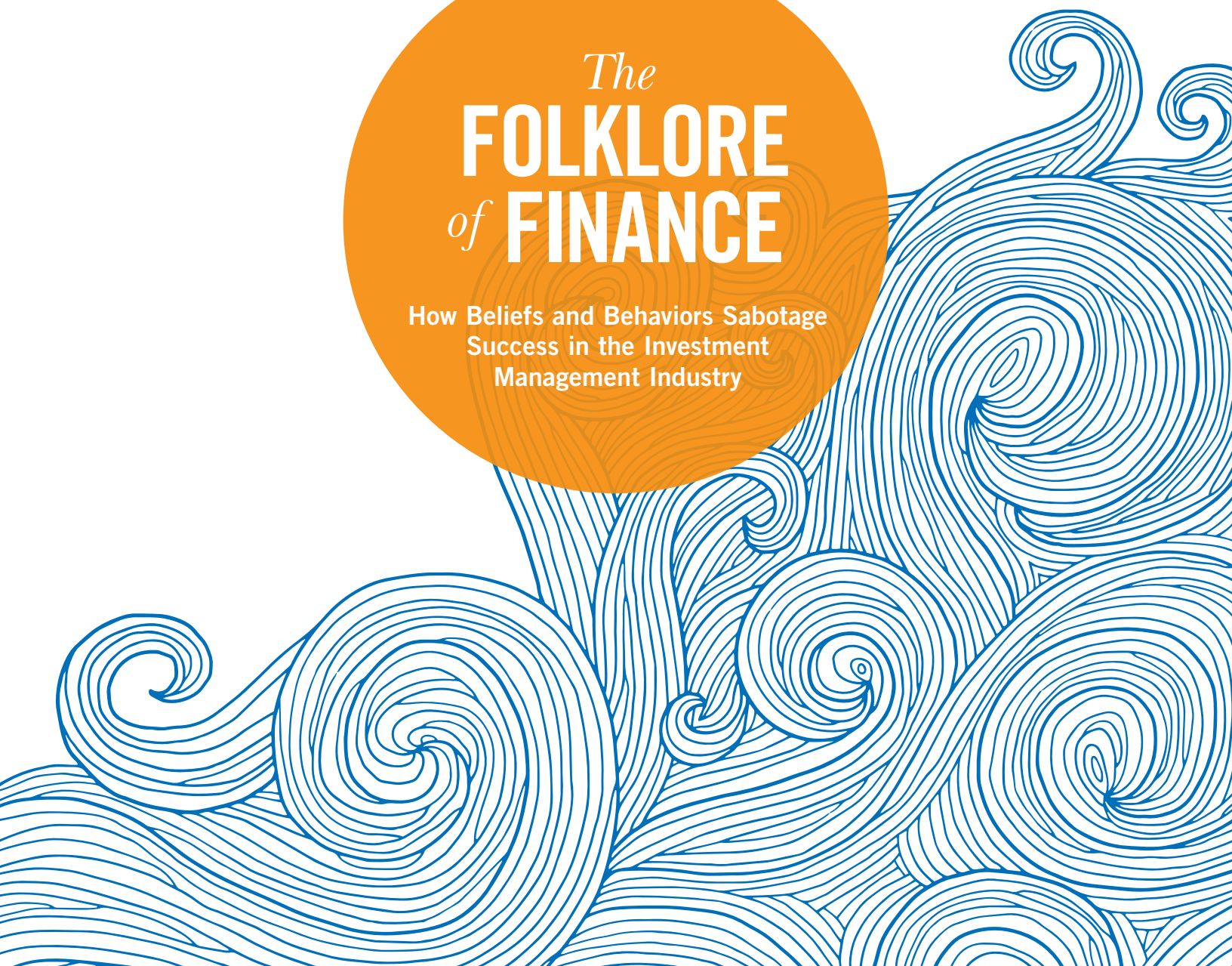




Center for Applied Research

The
FOLKLORE
of **FINANCE**

How Beliefs and Behaviors Sabotage
Success in the Investment
Management Industry



EXECUTIVE SUMMARY

The models for success in the investment management industry are broken. That may seem surprising given that global assets under management, net revenues and profit margins have all risen as the global economy has stabilized in the wake of the recent financial crisis. Indeed, the industry continues to be ranked among the most profitable.

But just because the industry is *profitable*, doesn't mean it's *successful*.

Alpha production has long been considered the standard measure of success for investment professionals. Due to its zero-sum nature, it is of course unrealistic to expect alpha to be produced by the industry as a whole. But as information efficiency and competition have increased, even skilled professionals are finding alpha more difficult to obtain.

Even if alpha were easy for skilled investment professionals to produce, it still wouldn't be sufficient.

True success includes not only producing alpha — perhaps more importantly, it also requires helping investors achieve their long-term goals, sustainably, over time. Unfortunately, *investors are not achieving their long-term goals*, and investment professionals are failing on both of these dimensions.

The industry faces a new crisis; but rather than being *financial*, this is a crisis of *faith*, driven by “the 3 Ds.” Investors share a deep **distrust** of the industry that leads to their **dissatisfaction**, which drives increasing **disintermediation**, where a growing number of investors believe they can do the job of investment professionals themselves — better and for less money. Unfortunately, this disintermediation can be counter to investors' long-term best interests.

What is behind the industry's failure? Ironically, **the pursuit of investment success has given rise to its biggest impediment: the “Folklore of Finance.”** This folklore reflects the shared beliefs, rooted in human bias, that govern both investment professionals' and investors' behaviors. Despite what are often positive motivations behind these behaviors, their effects often impede healthy decision-making.

The beliefs that constitute the **Folklore of Finance** fall into three categories. The first two — the **Folklore of Time** and the **Folklore of False Comfort** — exist as a result of conscious decisions. Investment professionals know, for example, that investing based on past performance or imitating their peers does not contribute to achieving success ... and yet both of these practices persist. Likewise, investors know that the reason they invest is to reach long-term goals, yet they often fail to define success with these goals in mind. **The Folklore of Knowledge**, meanwhile, is rooted in unconscious thought. For example, without realizing it, investment professionals take credit for success while assigning blame to external factors. Equally unaware, investors demonstrate significant overconfidence in their own abilities. Clearly, all three folklores are detrimental to success.

The effects of folklore are most evident in the industry's day-to-day activities. Even though there are two dimensions that constitute true success — achieving alpha and reaching investors' long-term goals — **we need only look at the amount of time, money and energy the industry accords to each of these areas to see a significant misallocation at play.** Investment professionals pay significantly more attention to activities that they believe will contribute value to alpha; some of these are helpful, but many are of limited value. Meanwhile, they often underappreciate activities that have high potential to help investors reach their goals, even though many of these can also aid in alpha production.

While the Folklore of Finance is the reason investment professionals and investors are failing to achieve true success, it is also the solution. **The industry needs to generate a new Folklore of Finance that reinforces the values necessary to achieve true success.** Folklore is difficult to influence directly. The industry's focus on activities, on the other hand, can be shifted. By fostering the right ones, industry participants can soon bring about lasting positive changes. These changes will cause a reconsideration of beliefs, and a new folklore will begin to take shape.

New behaviors lead to new beliefs and, over time, a new Folklore of Finance will and must arise. True success depends upon it.

METHODOLOGY

Primary research

The Center for Applied Research obtained input for this study through surveys of 3,744 investors, investment providers, government officials and regulators, across 19 countries. Responses were collected via telephone interview or through an online platform by CoreData on behalf of State Street. In addition, we conducted face-to-face interviews with more than 200 executives and government officials from around the world to gain qualitative insights for our research. The research was completed over a period of 18 months.

Our analysis focused on selected investment community members representing a wide range of perspectives:

- **Institutional investors** — Defined contribution, defined benefit plans, sovereign wealth funds, central banks, insurance companies, endowments, foundation and family offices
- **Retail investors** — Mass market, mass affluent and high-net-worth individuals
- **Asset managers** — Traditional and alternative asset managers whose clients are institutional, retail or both
- **Intermediaries** — Financial advisors and investment consultants
- **Regulatory bodies and government officials**
- **Others** — Academics, think tanks and industry associations

Geographical breakdown

A wide range of geographies were included.

- **Retail:** 16 countries were selected for participation; three in the Americas, seven in Europe, the Middle East and Africa (EMEA) and six in Asia Pacific (APAC). From a total of 2,880 respondents, 19 percent were from the Americas, 37 percent from EMEA and 44 percent from APAC.
- **Institutional and regulators:** 19 countries were selected for participation; three in the Americas, 10 in EMEA and six in APAC. From a total of 864 respondents, 33 percent were from the Americas, 34 percent from EMEA and 33 percent from APAC.

Secondary research

Secondary research is assembled from both academic literature and from sources with industry expertise. We use this to either support or refute the primary research findings.

Percentages and weightings

All percentages are rounded.

Results are equally weighted by geographic region.

Within the retail investor results, views of mass basic, mass affluent and high net worth have been equally weighted.

Overall investor results are equally weighted to give retail and institutional investors an equal voice.

Industry results are equally weighted among categories to give industry participants an equal voice.

Introduction

When Alpha Is Not Enough. Renowned hedge fund manager Michael Burry's story is the stuff of legend in the investment management industry. Self-trained, he started his career unconventionally: by writing an investment blog long before the medium was popular. There, his value-investing insights, developed during the dot-com bubble, quickly attracted attention — and money.

Few investors have created such stellar track records in such a short time. Just one year after the founding of his firm, Scion Capital, Burry's clients' portfolios had risen 55 percent despite the S&P 500 having fallen nearly 12 percent. From Scion Capital's inception in 2000 to its close in 2008, his investments returned more than *470 percent* — *net* of fees and expenses. Michael Burry was, in short, an exceptional investor. He delivered alpha in a truly remarkable way. But was he successful?

In 2005, when Burry set out to make another unfashionable bet — purchasing credit default swaps to short the subprime mortgage securities market — *his clients wouldn't follow*. It was an investment that, in retrospect, *would* have delivered significant, positive results in the long term. However, because Burry failed to understand his clients' limitations and effectively explain his investment strategy, his clients lost faith in his abilities.

Reproaching Burry for strategy drift, Scion's clients demanded that he return to stock picking — or return their capital. So, in 2007, he liquidated nearly \$750 million in swaps and by 2008,

demoralized, he shut his firm down. Despite incredible returns, and his own unique set of abilities, *his fund failed*. So, again: was Michael Burry successful? **We would argue: No. He was not.**

As the research in this paper will illustrate, *true* success for investment professionals and investors lies beyond what the industry has previously accepted as such. **True success includes not only producing alpha — perhaps more importantly, it also requires helping investors achieve their long-term goals, sustainably, over time.**

THE DEFINITION OF ALPHA

Alpha, as it is currently defined within the investment management industry, is an excess return over a given benchmark, adjusted for exposure to the benchmark, as defined by a given model. Models can range from the traditional capital asset pricing model (CAPM) approach to factor-based approaches.

For example, imagine a portfolio of stocks that is exposed to the same risks as its benchmark. If the portfolio returns 10 percent while the benchmark returns 9 percent, the portfolio manager will have generated an alpha of 1 percent (10 percent minus 9 percent), simply by actively picking the right securities.

This quantitative definition of alpha has an inherent weakness in that the correct assessment of alpha is clearly dependent on the correct choice of benchmark. While a benchmark might be chosen based on the opportunity set of available investments, the performance of this benchmark may have very little connection to the fulfillment of the ultimate needs of a given investor. Arguably, the fulfillment of investor needs, net of fees and over the long term, should be the true benchmark of success. (More detail in our research paper titled *The Influential Investor: How Investor Behavior is Redefining Performance*, available at <http://statestreet.com/centerforappliedresearch/doc/the-influential-investor.pdf>)

It is possible, therefore, that investors and the investment management industry could begin to redefine benchmarks over time, to better reflect investors' actual financial requirements. As a side effect, this may also result in a broadening of the definition of alpha.

Throughout this paper, alpha is treated from the current-day perspective, with the acknowledgement that this term may come to be redefined in the future.

PART I

The Models for Success Are Broken

The global economy has stabilized since the 2008 financial crisis. The investment management industry has seen assets under management, net revenues and profit pools rise consistently. Indeed, when compared with other industries, investment management continues to be ranked among the most profitable.¹ So, much like we did for Michael Burry, we asked:

Is the industry successful?

Again, the answer is no. Just because the industry is *profitable*, doesn't mean it's *successful*.

True success for investment professionals cannot exist without true success for the investors the industry is designed to serve. Even skilled investment professionals are finding it increasingly difficult to deliver alpha — despite a devotion to it — and neither are they delivering results consistent with investors' long-term goals.

There's a fundamental disconnect between how the industry and how investors judge success. Neither group's view is completely accurate; in fact, both stand to benefit from re-evaluating their definitions of success.

Let's look more closely at the industry's current measure of success.

THE ALLURE OF ALPHA

Alpha dominates as the industry's primary measure of success, and yet extraordinary alpha is exceedingly rare. Those select few that achieve it are inducted into an unofficial pantheon of investing: Warren Buffett² at Berkshire Hathaway. Peter Lynch at Fidelity. David Swensen at the Yale Endowment. Yet even these scions of the industry have had their share of weak performance.

Due to its zero-sum nature, it is of course unrealistic to expect alpha to be produced by the industry as a whole. However, there *are* clear, practical reasons to prize alpha. Facing a broad set of financial needs — such as fulfillment of their institution's mission, security in retirement and children's education — institutional and individual investors will continue to seek out asset managers with “the golden touch.”

There is no question that the industry is devoted to producing alpha for investors. It spends more than 60 percent⁴ of its capital on the pursuit of alpha, which is handsomely rewarded if delivered. In fact, investors responding to our survey say they are, on average, willing to pay 19 cents for every dollar of outperformance.⁵ In total, the industry generates approximately \$600 billion⁶ in active fees every year.

The problem, however, is that alpha opportunities are becoming increasingly rare.

THE INDUSTRY'S
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TO POSSESS.”³

MORE THAN
60% OF THE INDUSTRY'S
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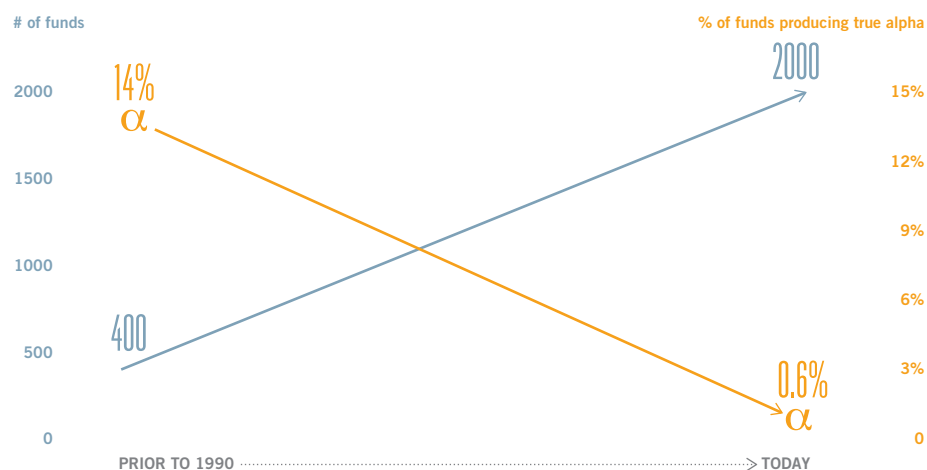


Alpha is Elusive

Despite the industry's devotion to it, **true alpha has become harder and harder to produce.**

FIGURE 1.

The industry spends more to get less



Source: Barras, Laurent, Olivier Scaillet, and Russ Wermers. "False Discoveries in Mutual Fund Performance: Measuring Luck in Estimated Alphas."

The information contained above is for illustrative purposes only.

According to researchers at the University of Maryland, prior to 1990, 14 percent of US domestic equity mutual funds were delivering "true" alpha. "True" alpha in this case was identified by using statistical methods to single out funds where performance above their respective benchmarks couldn't be explained by probability alone. By 2006, however, the percentage of funds delivering "true" alpha had shrunk to only 0.6 percent, while the total number of actively managed funds had increased (see Figure 1). This isn't just a US phenomenon. Alpha production net of fees is difficult across the globe.^{7,8,9}

Alpha and Skill

There are two significant drivers behind this increased difficulty: information efficiency and competition.

Ninety percent of the world's data has been produced in the past two years,¹⁰ and investment professionals and investors alike have ready and easy access to it. The ability to have an information “edge” has eroded, and with it the arbitrage and mispricing opportunities that made alpha attainable in the past.

The second factor inhibiting alpha production, ironically, is the increased expertise of investment professionals. Absolute skill has gone up, but the *standard deviation* of skill has gone down.

Absolute skill rises, but relative skill declines, leaving more to luck¹¹ — a phenomenon known as the “Paradox of Skill.”¹² This is derived from research performed by Stephen Jay Gould about the sport of baseball. Statistically, one of the best hitters in history is Ted Williams, who retired in 1960. While the absolute skill of hitters has increased significantly since the days of Ted Williams, no one has hit more effectively than him since that time. This is because the absolute skill of pitchers has also increased, resulting in a lower variance of relative skill, and leaving the outcome of pitcher/hitter matchups more to luck than ever before.¹³

Likewise, within the investment management industry, absolute skill has increased dramatically, but relative skill has converged.

This isn't just a theoretical problem. There are significant undercurrents of skepticism within the industry around the role of skill in alpha production.

Only 53 percent of individual investors believe that alpha is primarily based on skill. Even more worrisome, even fewer investment professionals (42 percent) believe skill is the primary driver of outperformance.¹⁴

Our conclusion is this: Despite overwhelming evidence that alpha is increasingly difficult to obtain, the investment management industry continues to hold alpha as its primary measure of success — to its peril.¹⁵

Even if alpha were easy for investment professionals to produce, it still wouldn't be sufficient. This is because investment professionals cannot truly succeed if the investors they serve do not *also* succeed. **There are *two* dimensions of success — and investment professionals must deliver on both.**

“WE’RE HAPPY TO PAY
FOR SKILL. WE’RE NOT
EAGER TO PAY FOR LUCK.”

— Chief investment officer of
large US state pension plan

ONLY
53%
OF INDIVIDUAL INVESTORS
BELIEVE ALPHA IS PRIMARILY
DRIVEN BY SKILL

ONLY
42%
OF INVESTMENT PROFESSIONALS
BELIEVE SKILL IS THE PRIMARY
DRIVER OF OUTPERFORMANCE

THE DUAL DIMENSIONS OF TRUE SUCCESS

Alpha

Given alpha's dominance, we almost don't need to articulate why it's a component of true success: It is clearly a key objective that investors seek, regardless of the difficulty involved in achieving it. If the investment management industry were to stop looking for alpha opportunities, there would be no price discovery and markets could cease to function.¹⁶

Investors' Long-Term Goals

This second dimension comprises everything necessary for helping investors achieve long-term financial goals.

This ties in closely with the conclusion of our previous research efforts: The industry's value proposition must evolve to define success as personal, and relative only to the goals of the investor.¹⁷ It also includes important but often overlooked areas such as effective communication with and proper education of clients.

Institutional and retail investors desperately require more from their investment providers than just asset allocation and security selection. They need help creating a meaningful, goal-related strategy and they need help understanding what success in achieving this strategy looks like. Perhaps most importantly, they require guidance when it comes to sticking to this strategy over time.

"A GOOD DOCTOR LOOKS AT THE HEALTH CONDITION OF THE PATIENT AND UNDERSTANDS THE ISSUES — A GOOD ASSET MANAGER SHOULD DO THE SAME. IT'S NOT ENOUGH TO JUST KNOW ABOUT THE MEDICINE (THE PRODUCTS), WE MUST FIRST START WITH THE PATIENT (THE CLIENT)."

— **President of multi-billion dollar Japanese investment manager and consultancy¹⁸**

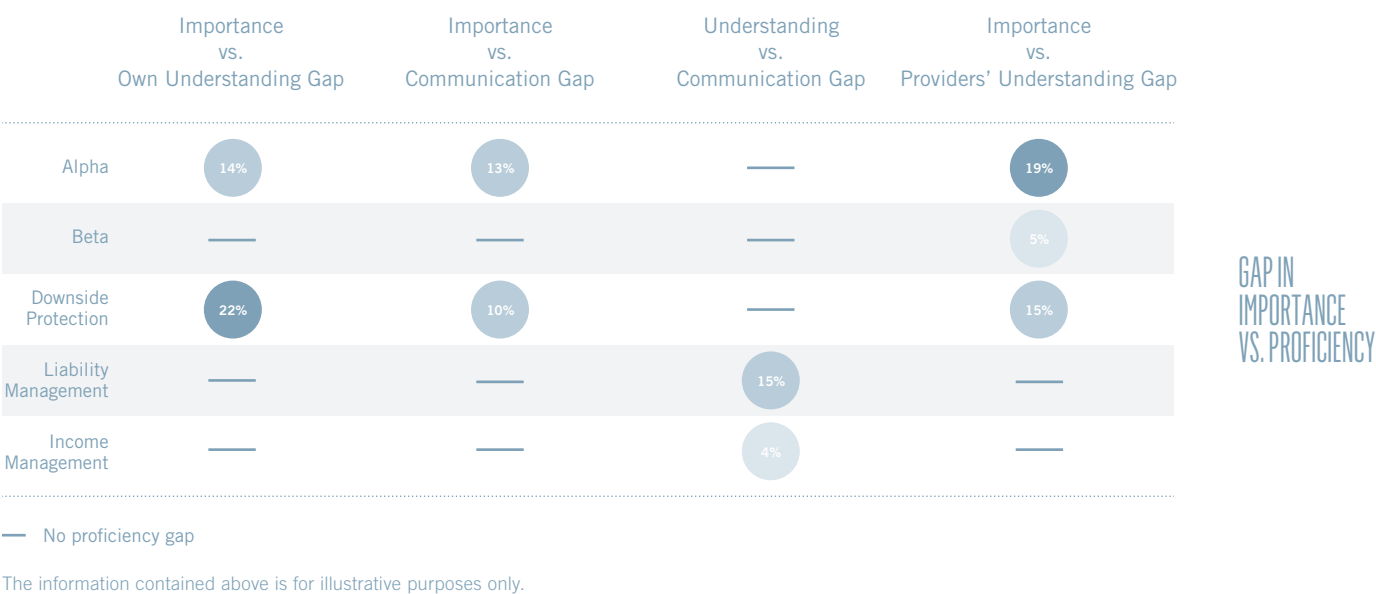
"CLIENTS WANT MORE FROM INVESTMENT PROVIDERS THAN JUST MANAGING THEIR PORTFOLIOS. THAT IS A BIG CHANGE WITHIN THE BUSINESS."

— **Chief investment officer of multi-billion dollar US asset manager¹⁹**

GOALS AREN'T BEING REACHED

Investors consider the achievement of long-term goals to be incredibly important. Nearly 80 percent of institutional investors realize the importance of achieving long-term goals. Despite this fact, there is a gap between the perceived importance of achieving long-term goals and their proficiency in achieving them (see Figure 2).²⁰

FIGURE 2.



Perhaps because of this proficiency gap, many institutional investors are struggling to achieve their goals. To give one example, as of 2013, the 100 largest US public pension funds were, on average, less than 70 percent funded, and unfunded liabilities totaled \$1.3 trillion.²¹

The picture is no prettier for individual investors. When asked about their primary reason for investing, 73 percent cited long-term goals such as retiring comfortably (44 percent of respondents), purchasing a home (15 percent of respondents) or leaving an inheritance (14 percent of respondents). However, when questioned about whether they were prepared to meet their investment goals, *only 12 percent* of individual investors could say with confidence that they were.²²



12%

of investors, globally, believe that they are wholly prepared to achieve their investment goals.

In part, this relates to the way investors frame their goals. In our “Influential Investor” study, we introduced the concept of **personal performance**. Investors should be framing their goals with an eye toward four key components: alpha seeking/beta generation, downside protection, liability management and income management.

The first two components are market-related. Initially, investors must decide how much market exposure their portfolio should have, and how important alpha is to them. Next, and very closely related, investors have to identify how much downside protection they want. This means they must determine the maximum value they are willing to lose over various time frames.

The second two components are more closely related to investors’ specific needs. Liability management is an important consideration for institutional investors or individual investors with specific obligations, whether immediate or in the future. Income management is the final component. Especially for investors in need of regular installments of cash, income management is often an extremely important consideration.

Instead of taking this holistic approach, investment professionals and investors are in many cases fixated only on alpha, which they are struggling to achieve.

FACING A NEW CRISIS

Without success on both dimensions (delivering value to alpha and delivering value to long-term results), the industry faces a new crisis. Rather than being financial, however, this one is a crisis of faith.

Fueling this new crisis are “the 3 Ds”: a deep distrust of the industry that spurs dissatisfaction, which ultimately leads to disintermediation.

Disintermediation, quite simply, means that investors believe they can do the job of investment professionals better, and for less.

Investment professionals have been consistently rated at the bottom relative to other financial service professionals in terms of trustworthiness measures such as ethics and honesty.²³ And the financial services industry as a whole is also not well-regarded. In 2013, the CFA Institute and Edelman released their Investor Trust Study,²⁴ which showed financial services as the least trusted industry (see Figure 3).

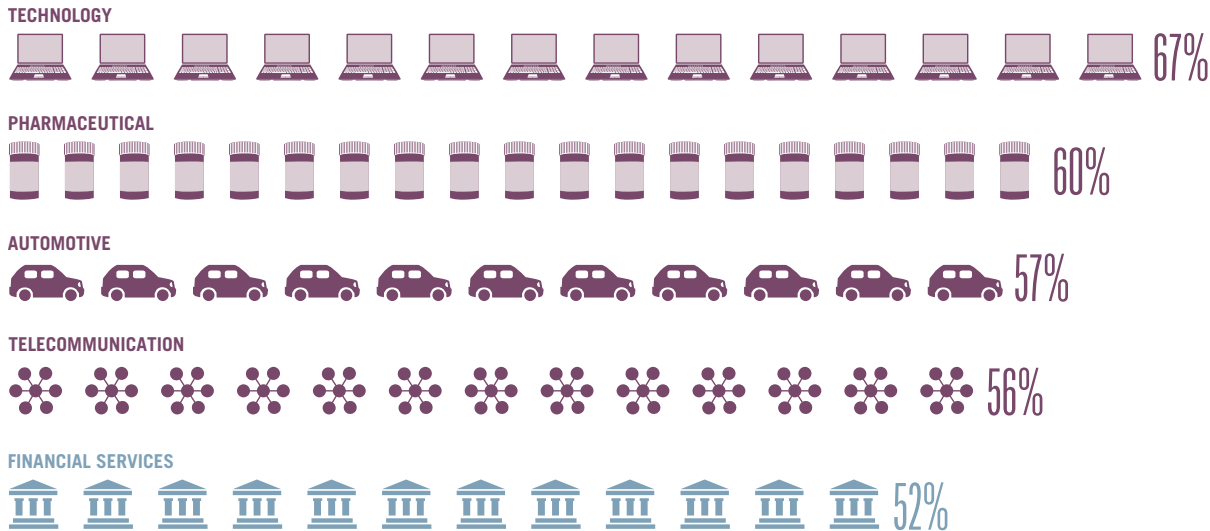
DISTRUST
DISSATISFACTION
DISINTERMEDIATION

“WE ARE TAKING CONTROL
OF OUR DESTINY.”²⁵

— OMERS Europe chief,
Mark Redman, describing the
attraction to in-house manage-
ment, which saves on fees²⁶

FIGURE 3.

Even among investors, financial services is the least-trusted industry.



Source: CFA Institute and Edelman, Investor Trust Study 2013.

The information contained above is for illustrative purposes only.

Confirming low levels of trust, our most recent research found that only 49 percent of investors believe their provider is acting in the investors' best interest.²⁷

That distrust leads inexorably to dissatisfaction, and **dissatisfied customers are disloyal**. In fact, according to our research, 65 percent of investors are not particularly loyal to their primary investment provider.²⁸

Institutional investors and retail investors alike are beginning to disintermediate the professional money management community in meaningful ways, in asset classes such as private markets and cash, in substitute products like index funds and ETFs and most profoundly, via the insourcing of asset management.

A specific example of insourcing was noted in a recent study of institutional investors located in North America, EMEA and Asia. Across two decades, the total capital they invested in direct investments, and specifically in private equity, increased nearly eight times, from \$2.6 billion in the period 1991-2000, to \$19.6 billion in the period 2001-2010.

Individual investors are also finding creative ways to disintermediate. For example, investors are increasingly taking their investments into their own hands in Australia, where contributing to individual retirement schemes, known as superannuation funds, is mandatory. Self-managed superannuation funds, initially introduced as a legislative afterthought,³⁰ are now the largest segment of superannuation. On average more than 50,000 investors have set up self-managed funds each year for the past five years, with self-managed assets now totaling more than \$500 billion in assets.³¹



A staggering 93 percent of individual investors believe they should make their *own* investment decisions. And two-thirds think their best investment to date was *entirely* their decision. On top of that, 65 percent of individual investors believe technology will do a better job meeting their needs than humans.

Important questions remain on whether disintermediation actually makes sense for all or most investors, especially given the high hurdles of resources that are required to do so. After all, when experiencing a toothache, most people would choose to consult a dentist to get the very best advice. They would not self-diagnose or attempt any complicated procedures on their own — and yet that’s exactly what investors are doing when they disintermediate. Rather than using the sophisticated toolkit of the investment professional, investors have opened their own toolboxes and are attacking their investment decisions with the equivalent of household pliers.

Instead of addressing these issues head-on, the industry is using temporary patches to counter the damage disintermediation is beginning to cause. Many asset managers focus relentlessly on new product launches to grow their assets under management and associated fee base.³⁵ Similarly, focusing on maintaining accounts, some financial advisers seek to shield clients from bad news by telling clients what they want to hear, not what they need to hear. This only makes the distrust and dissatisfaction worse.

None of those actions will solve the industry’s fundamental issue: Despite the *profitability* of the industry, it is not achieving *success*.

Why is there a failure to achieve true success? Because of the pervasive influence of folklore.



93% OF INDIVIDUAL INVESTORS
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MAKE THEIR OWN
INVESTMENT DECISIONS³²



66% OF INDIVIDUAL INVESTORS
THINK THEIR BEST INVEST-
MENT TO DATE WAS ENTIRELY
THEIR OWN DECISION³³



65% OF RETAIL INVESTORS
BELIEVE TECHNOLOGY WILL
DO BETTER AT MEETING
THEIR NEEDS THAN HUMANS³⁴

PART II

Folklore Dominates Decision-Making

Over time, the investment management industry has established a number of traditions and customs that have slowly calcified into investment wisdom. This wisdom can also be described as folklore.

THE FOUNDATIONS OF FOLKLORE

“Folklore” is the literature, knowledge, art and practice disseminated through behavioral example and oral communication.³⁷

Most relevant to this discussion is the function folklore serves: Because it is the collected “learned lessons” of all that have come before, folklore provides a heuristic, a mental shortcut, for the “best” ways to think or behave. Folklore teaches lessons in the most basic of human needs: control, safety and approval.

Will this help me get the outcome I want? Does this minimize risk? Will this improve my reputation?

The problem is that folklore is often flawed. For example, many North Americans and some Europeans grew up with parents who rigorously inspected the spoils of Halloween trick-or-treating, looking for evidence of hidden razor blades in apples. But sociologists studying that particular piece of folklore determined that no child has ever died as a result of strangers tampering with their Halloween goodies.³⁸

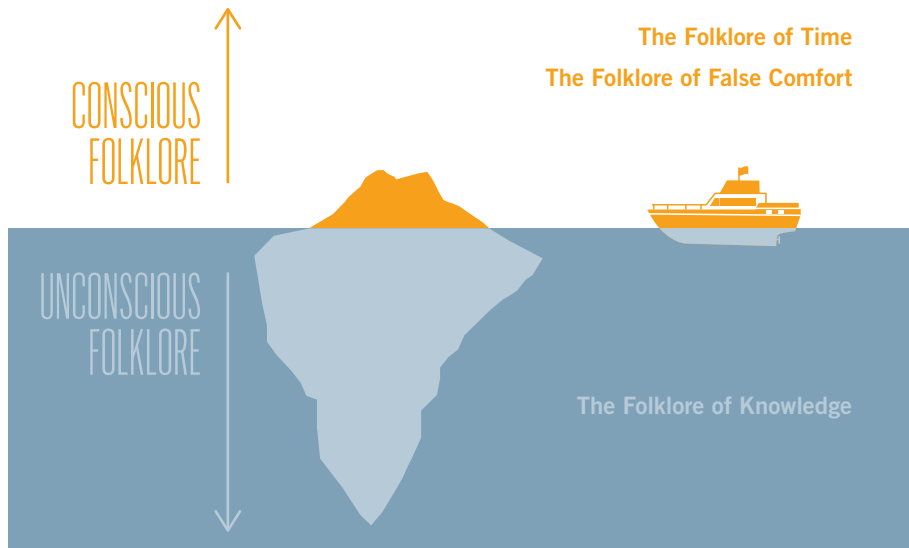
This story conveys a powerful lesson. **Beliefs, however flawed, powerfully influence behaviors.**

“THE BRAIN IS TERRIBLY
ADEPT AT SUBSTITUTING
EMOTIONS FOR FACTS
IN ORDER TO MAKE
A FINANCIAL DECISION
THAT FEELS RIGHT.”³⁶

— Cabot Research

FINDING FOLKLORE IN FINANCE

Folklore is a familiar concept. Its application to the investment management industry, however, must be explained in more detail. Folklore manifests in three major categories within our industry. Two of these can be described as conscious; they are the tip of the iceberg. The last category of folklore is unconscious, and hidden below the surface.



The Folklore We See...

Investment professionals and investors use conscious folklore as an easily articulated, but often incorrect, guideline for making and justifying decisions: They know they're employing those guidelines, though they may not be aware of their unintended consequences.

There are two main conscious folklores: the Folklore of Time and the Folklore of False Comfort.

As one might expect, the Folklore of Time describes those beliefs and behaviors related to what has occurred in the past and what *may* occur in the future. For example, investment professionals and investors rely heavily on analyst forecasts (despite accuracy rates as low as 5 to 10 percent).³⁹ They also tend to rely on past performance when making investment decisions *despite* the fact that past performance is not an indication of future results.

This truism is corroborated by research. For example, researchers followed the returns of 715 US stock mutual funds, which had posted top quartile performance as of March 2010. Only two of the funds persisted in remaining in the top 25 percent throughout the subsequent four-year period (March 2010 to March 2014).⁴⁰ This lack of returns persistence can create a situation where

managers who have underperformed are fired, and replaced with managers who have outperformed. Subsequently, the fired managers often outperform and vice versa.⁴¹

Another major symptom of the Folklore of Time is our industry's unhealthy focus on the short-term. Short-term results often dominate long-term concerns, in part because they are easier to measure and incent. On the institutional side, 50 percent of institutional investors and intermediaries use a timeframe of one to three years to assess the performance of providers. As a result, nearly 60 percent of investment providers use the same timeframe to measure the performance of their portfolio managers. And unsurprisingly, 72 percent of portfolio managers believe their organizations use a one- to three-year timeframe to measure their performance.⁴²

Short-termism affects individual investors as well. More than 60 percent of investors we surveyed say they would consider moving to a more conservative investment strategy if their portfolio declined by more than 20 percent in a year; more than 90 percent of those investors would make the change in less than three months!⁴⁴

Pairing with the Folklore of Time is the Folklore of False Comfort, which is revealed in four significant ways.

The first relates to the industry's tendency to rely on innumerable, yet crucially tangible, ways to classify, measure and document investment choices. This is often done without regard to whether these metrics add legitimate value. Specifically, there is a tendency to over-rely on “artifacts” such as benchmarks, asset classes, market cap-weighted indices, value at risk (VAR) models, fund ratings, ratings agencies and style boxes among others.

The second appearance of the Folklore of False Comfort occurs when institutional investors overuse consultants in their investment selection process. Researchers at Oxford's Saïd Business School have found that manager selection is one of the most highly valued services offered by consultants; this delegation of responsibility helps institutional investors sleep better at night. However, the researchers also found no evidence that the funds recommended by consultants outperformed non-recommended products.⁴⁵ Consultants are also guilty of perpetuating the use of the “artifacts” discussed above. This is not to say that consultants add no value — their advice related to process and asset allocation can be essential. The problem lies with institutional investors hiring consultants in an attempt to outsource accountability.

The third relates to regulators and compliance departments, who take false comfort in the idea that disclosures and disclaimers are effective means of increasing transparency. Investors are not reading these disclosures. In fact, half of individual investors in the US and Canada say they spend more time reading free catalogs than reviewing their investment statements.⁴⁶ Although these financial reform

“NOT EVERYTHING
THAT CAN BE COUNTED
COUNTS AND NOT
EVERYTHING THAT COUNTS
CAN BE COUNTED.”

— Sociologist William Bruce
Cameron (though, through
folklore, usually attributed
to Albert Einstein)⁴³

initiatives are intended to create transparency, they may result in the unintended consequence of opacity.

The fourth, and most damaging, materialization of the Folklore of False Comfort is its distortion of how investors measure success. We previously established the importance of long-term goals to institutional investors. Yet, only 22 percent of them define their success based on achieving these goals. The vast majority (63 percent) indicated risk-adjusted returns *relative to a given benchmark* as their top measure of success.⁴⁷

Similarly, individual investors suffer from a disconnect between their reasons for investing and their definition of success. Twenty-nine percent of retail investors define success as reaching long-term goals. Instead, they choose impossible or irrelevant metrics such as making gains and no losses, outperforming the market and achieving short-term investment goals.⁴⁸

Institutional investors and individual investors take false comfort in these short-term benchmarks of success because they are easier to measure than progress towards a long-term goal.

Even where investment professionals and investors consciously notice folklore in action, *it still persists*. This suggests that *unconscious* folklore may be even harder to address.

...And the Folklore We Don't See

We as humans are significantly influenced by unconscious thoughts and beliefs. A recent study examining motor decisions has shown that the unconscious brain arrives at decisions 7 to 10 seconds before we are consciously aware that a decision is even made. Even more striking, the study showed that participants' conscious decisions could be predicted — with 70 percent accuracy — by studying their unconscious brain activity. Together, these results underscore that unconscious processing is much faster than conscious processing, and perhaps more influential as well.⁴⁹

This introduces us to the Folklore of Knowledge. It is an unconscious folklore, because it involves that which investment professionals and investors don't know, but *think* they do.

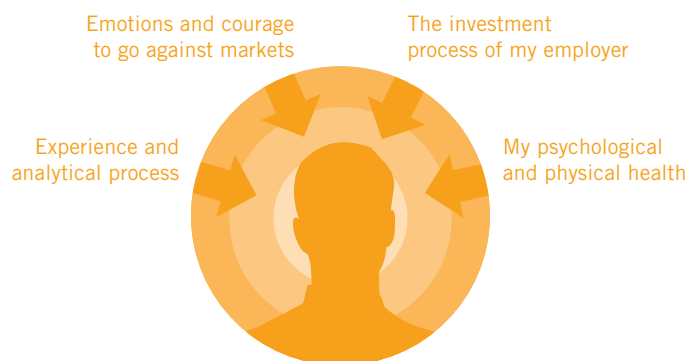
For example, based on feedback from portfolio managers, we found the majority of these professionals exhibit an unconscious “self-attribution” bias. Without realizing it, they credit *themselves* for their successes, but blame *external factors* for their failures.

When we asked asset managers and intermediaries to answer the question “what are the top reasons you outperform?” their most frequent response (77 percent and 47 percent respectively) was “experience and analytical process” — in other words,

“TWO IMPORTANT FACTS
ABOUT OUR MINDS:
WE CAN BE BLIND TO THE
OBVIOUS AND ALSO BLIND
TO THE BLINDNESS.”

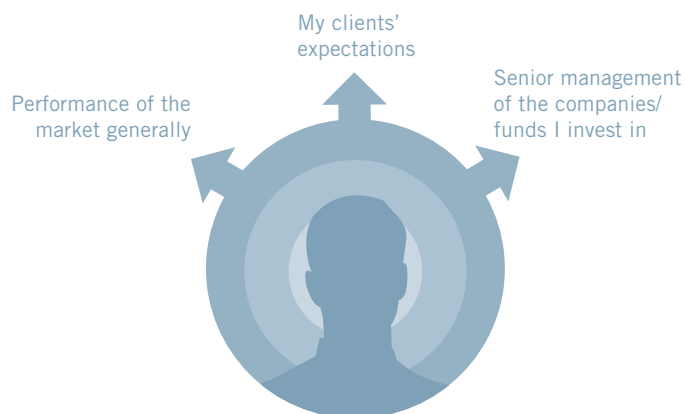
— Daniel Kahneman,
*Thinking, Fast and Slow*⁵⁰

WHEN YOU OUTPERFORM



Attributed to
Internal Factors

WHEN YOU UNDERPERFORM



Attributed to
External Factors

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their *own* abilities. When it came time to explain underperformance, however, respondents downplayed their role. Instead, they were more likely to blame market conditions, their clients' expectations or the senior management of companies they invested in.

How can sophisticated investment professionals be unconscious of this dichotomy? Simply because they believe *both* situations to be true. And they *need* them to be.

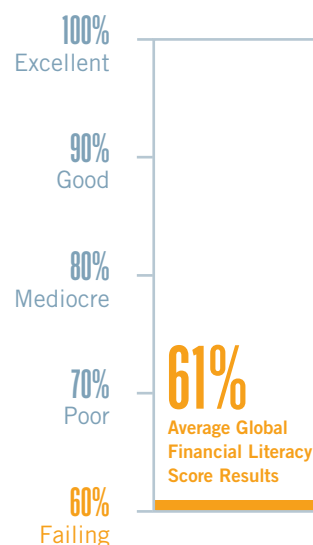
Investment professionals are caught in a double bind. They need to feel conviction in their investment choices in order to reassure clients. At the same time, it is logically unreasonable to have high conviction due to the intrinsic uncertainty of investing. To counteract this, they tell themselves stories to explain success and failure. These narratives are *so* compelling — whether they're playing the role of the hero or the victim — that the story *becomes* truth. And it does so for their organizations and clients, as well.⁵¹

Individual investors are also affected by the Folklore of Knowledge, which is revealed by their overconfidence. In a recent research effort, we asked investors about their level of financial sophistication. Nearly two-thirds of individual investors rated their current level of financial sophistication as advanced.⁵² This result seemed overly optimistic. Therefore, in the Folklore of Finance study, we asked investors to complete a financial literacy exam, which tested their knowledge of concepts such as diversification, inflation and basic investment products. The results indicated that on the whole, investors are overconfident in their abilities; indeed, the average global financial literacy score was just 61 percent, barely above a failing grade, and far from advanced.⁵³

NEARLY

2/3

of investors, globally, rate their level of financial sophistication as "advanced."

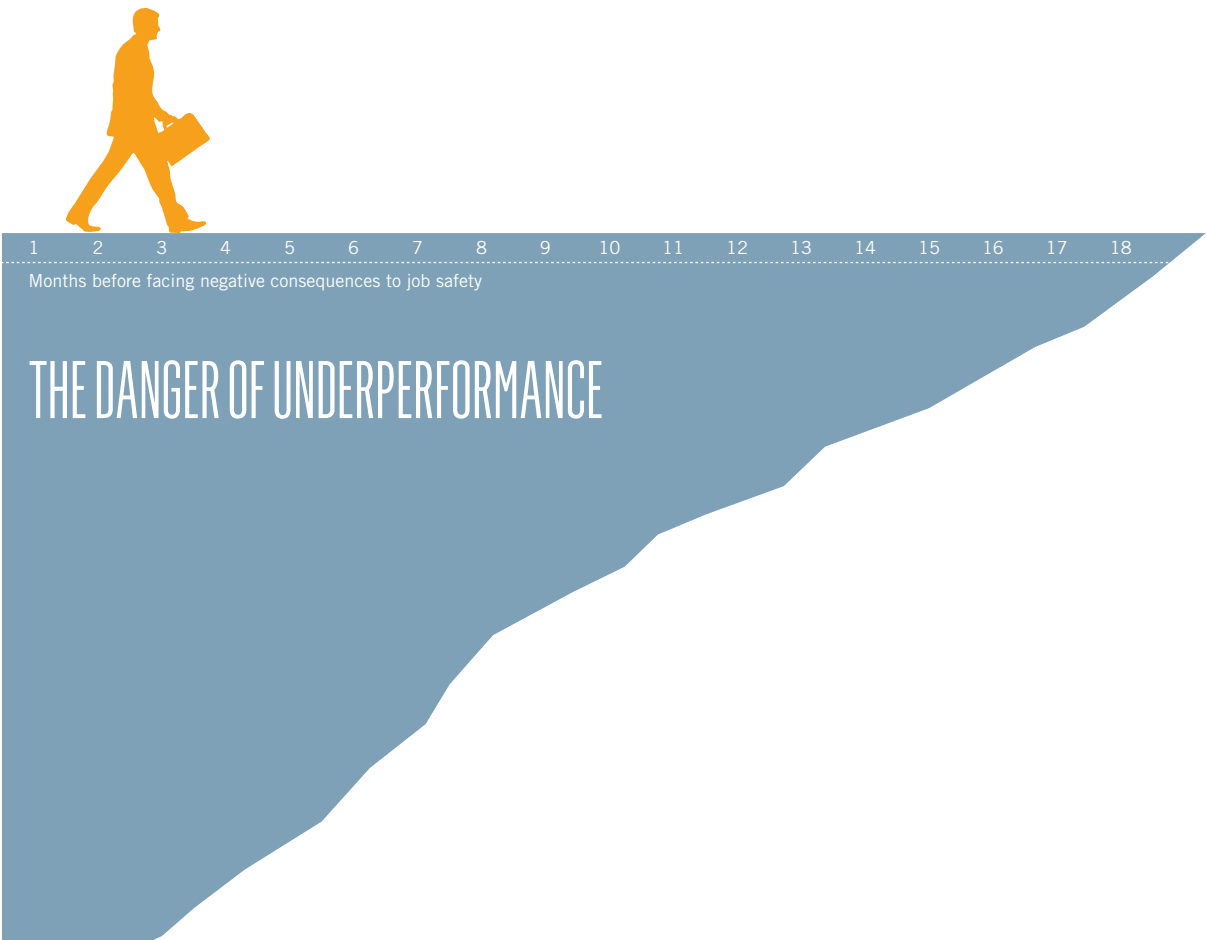


THE IRONY OF FOLKLORE

Why do we rely on folklore when it leads to the types of unhealthy decisions we fear the most?

A dependence on folklore’s destructive behaviors increases in situations characterized by uncertainty (the flipside of control), money (synonymous with safety in many investors’ minds) and a zero-sum environment where the stakes are high — all three of which are hallmarks of the investment management industry.

Investment professionals’ greatest fear is for their careers. In fact, 54 percent of institutional investors who manage money believe that their job safety would be at risk if they underperformed their peers. Forty-five percent of respondents who are responsible for managing money at asset management firms feel the same way. Of the respondents from both groups who worried about their job safety, on average they believe that they would be made redundant (lose their jobs due to underperformance) *after a period of just 18 months*.⁵⁴



The information contained above is for illustrative purposes only.

Investors, meanwhile, are most afraid of losses and feelings of regret. They are extremely sensitive to avoiding remorse — especially when their life savings are at stake. In light of this, investment professionals' and investors' reliance on the Folklore of Finance makes sense ... except that it only masks uncertainty, and often is the direct cause of the poor decisions both groups fear the most.

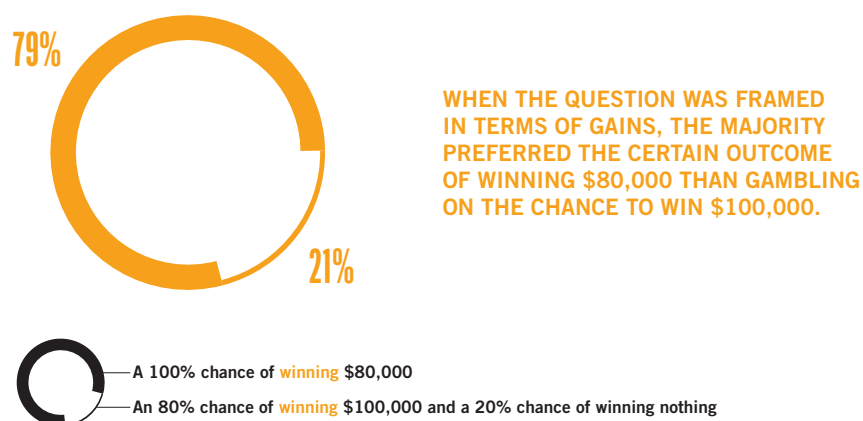
"Loss aversion" explains people's reluctance to bet on a fair coin toss for equal stakes: The attractiveness of the possible gain is not nearly sufficient to compensate for the strong dislike they have of a possible loss.⁵⁵ The two questions in Figure 4 present identical but inverse scenarios. From the perspective of mathematic probability, both options have the same expected return. Therefore, a computer will logically always choose to lock in the gain or lock in the loss, because these options involve the least uncertainty. Breaking with this logic, 81 percent of investors across the globe prefer to risk a larger loss in the hopes of avoiding losing anything.⁵⁶

"I CAN CALCULATE THE
MOTION OF HEAVENLY
BODIES, BUT NOT THE
MADNESS OF PEOPLE..."

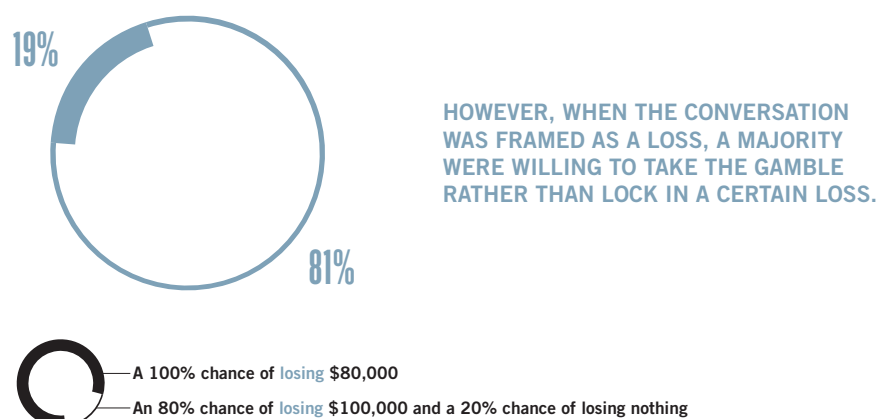
— Sir Isaac Newton

FIGURE 4.

GAIN



LOSS



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What we're left with is this: The beliefs inspired by the Folklore of Finance have created a set of *behaviors* (some of which are useful, others less so). As we'll see, those behaviors lead individuals to engage in *activities* that are often counter to their own best interests.

The critical issue, however, is that those individual behaviors quickly become industry behaviors, which put everyone at risk. Even though much of the Folklore of Finance is invisible, or so familiar as to seem invisible, its negative effects within the industry are not.

FOLKLORE DRIVES A MISALLOCATION OF TIME, MONEY AND ENERGY

We have argued that two dimensions — value to alpha and value to investors' long-term goals — constitute true success. Due to the effects of folklore, the investment management industry is not effectively allocating its resources.

We began our analysis by identifying a broad set of “activities” that the industry engages in. Each activity is associated with one of the three folklores, and is also tied to a specific set of behavioral biases. For example, the “past performance focus” activity falls under the Folklore of Time, and is associated with hindsight bias, overconfidence bias and the illusion of control. The full list of activity definitions, associated folklore and behavioral biases is available in the appendix.

Next we designed an “activity map” (see Figure 5), which charts activities based on their potential value to alpha on one axis and their potential value to investors' long-term goals on the other. Activities are plotted on the map based on our educated view (supported by interviews and secondary research). It is important to note that the location of each activity is related to its potential value to both alpha and investors' goals. For example, “Forecast and Valuation Focus” can potentially, if done exceptionally well, result in the generation of alpha. Meanwhile, this activity is less useful to the achievement of clients' long-term goals, resulting in its placement in the top left “Mission Impossible” quadrant.

The final component of the activity map is the size of its “bubbles.” Bubble size loosely correlates to the amount of resources (time, money and energy) that the industry currently devotes to each activity.

As we've explored throughout this paper, and as demonstrated by the bubble sizes, many investment professionals pay significantly more attention to activities that they believe contribute value to alpha. Unfortunately, the specific activities that they emphasize tend to yield very little impact on value to investors' goals (upper left “Mission Impossible” quadrant). What's also clear is that a disproportionate focus is directed towards activities that do not contribute significantly to alpha production or investor value, though they are “traditional” activities (lower left “Titanic” quadrant). Both show the Folklore of Finance at work.

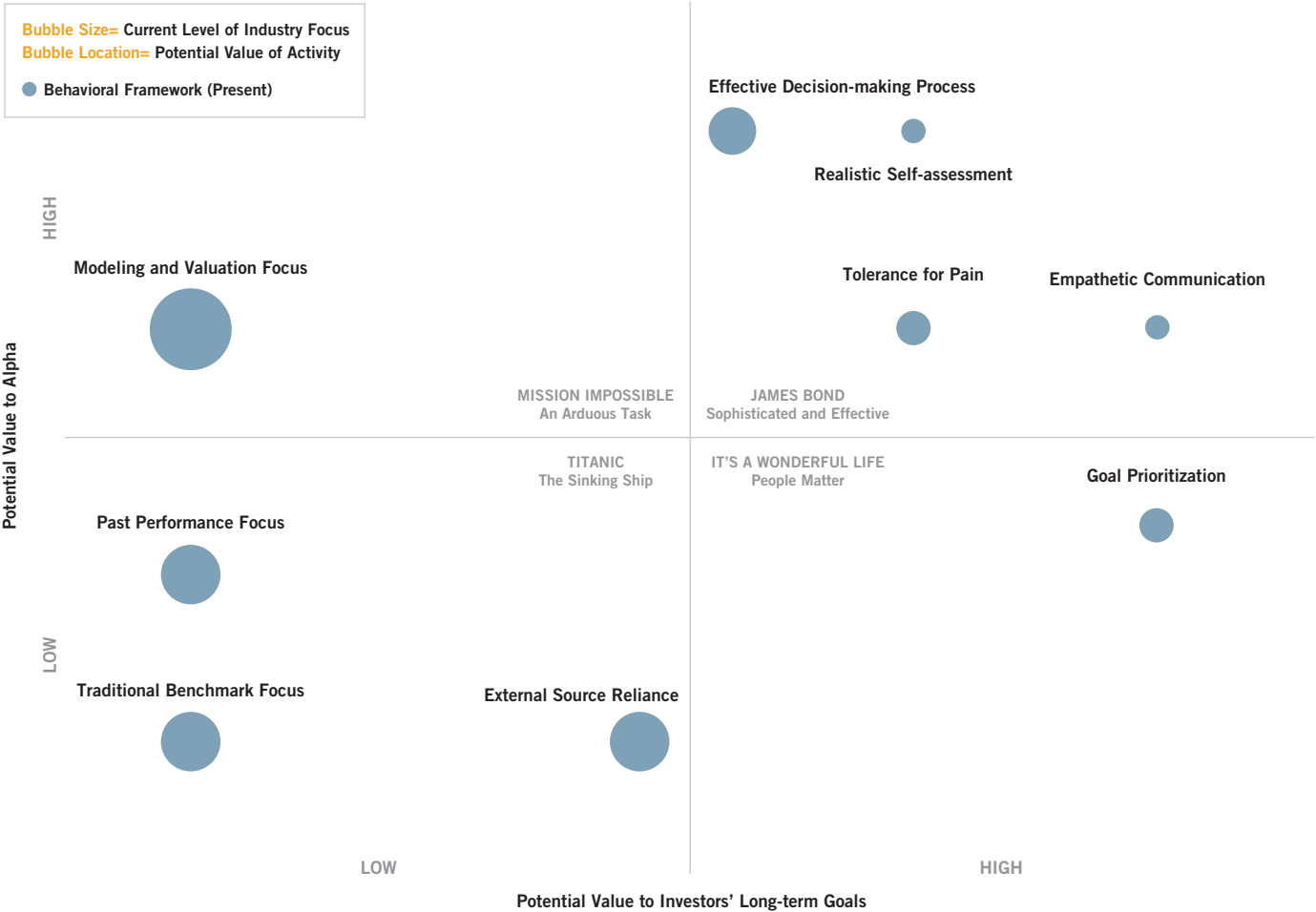


Finally, the Folklore of Finance drives the under-resourcing of activities that contribute value to investors’ long-term goals, which would otherwise seem surprising given how many of those activities also contribute significantly to alpha (upper right quadrant, “James Bond”). Likewise, activities which provide a high benefit to investors’ goals but limited value to alpha are underappreciated (lower right quadrant, “It’s a Wonderful Life”).⁵⁷

Ultimately, what the chart demonstrates is that the current allocation of industry resources is not maximizing value, either to alpha *or* to investors’ long-term goals. This is the effect of the Folklore of Finance and the biases that give rise to it.

To achieve success, we must break the cycle.

FIGURE 5.
Current Allocation of Time, Money and Energy



PART III

Breaking the Cycle: Toward a New Folklore

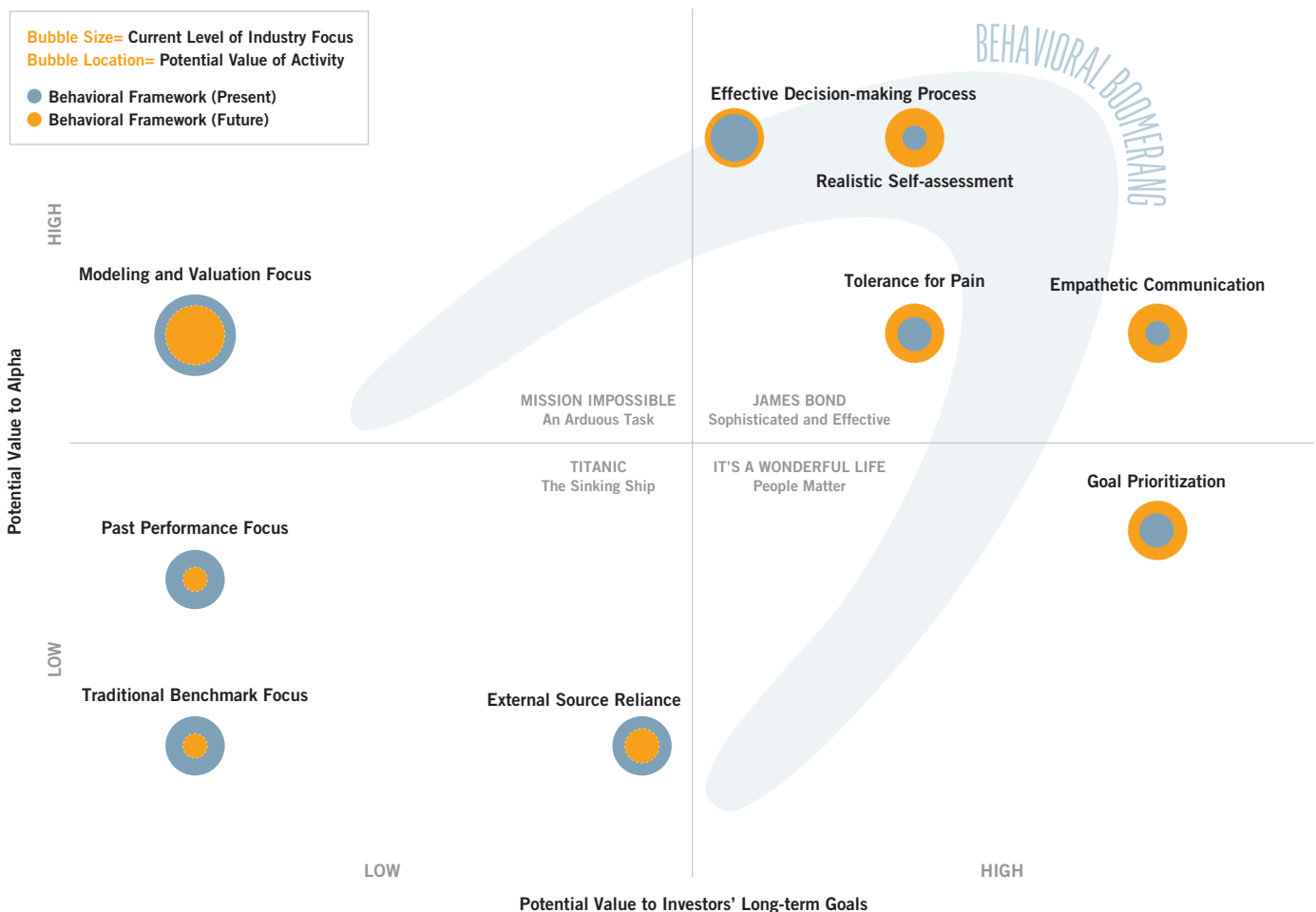
We need a new Folklore of Finance: one that embodies the beliefs that will drive the behaviors and activities required to achieve true success. Investment professionals and investors need to expand their focus beyond easily measured, and easily explained, quantitative metrics of success. They must learn to also value those largely qualitative, behavioral factors that constitute the second, yet equally critical, dimension of success.

“THE BEHAVIORAL BOOMERANG”

The chart below provides a contrast to its earlier sibling and demonstrates a proposed rebalancing of the industry’s activities. We have taken the liberty of creating this proposed state based on a synthesis of our research and our in-person interviews. The change in bubble size should be interpreted as directional, rather than optimized.

FIGURE 6.

Future Allocation of Time, Money and Energy



The information contained above is for illustrative purposes only.

The investment management industry should reallocate resources with an eye toward what we call the “behavioral boomerang” — this ensures sufficient, but not excessive coverage of the upper left “Mission Impossible” and lower right “It’s a Wonderful Life” quadrants and pays significantly more attention to those activities most closely associated with the dual dimensions of true success. Meanwhile, the industry also stands to benefit from shifting its focus away from activities in the “Titanic” quadrant, given that these add much lower potential value to both alpha and long-term goal achievement.

By behaving in ways consistent with investors’ needs, investment professionals can address, and ultimately overcome, investor distrust and dissatisfaction, and stem the tide of disintermediation. What is more, a new folklore will help investment professionals in their pursuit of alpha, as some currently unappreciated activities can help in this effort.

One example of a firm which has gone to great lengths to address behavioral biases is Bridgewater Associates. With the goal of improving alpha production, they have instituted procedures aimed at creating a “learning culture.”⁵⁸ At the core of their philosophy is the idea that “valid information” is critical for making better investment decisions. They believe that in practice, this is often trumped by other priorities such as winning an argument, gaining power or avoiding embarrassment. To counteract this, employees are openly confronted with their mistakes and weaknesses with the intention of creating an environment that minimizes defensiveness and encourages constructive evaluation.

The process of instilling new beliefs and shaping a new Folklore of Finance is neither comfortable nor easy. But it *is* possible, and it is the most effective way for the industry to attain true success.

To get there, we’ve outlined specific tactics which will begin the process of changing the behaviors — and ultimately the beliefs — needed to attain true success. This list is not exhaustive but represents some of the steps we have identified which can contribute to the creation of new and effective folklore.

PLANNING FOR A NEW FOLKLORE OF FINANCE

While some of these tactics are self-explanatory, others require clarification. Here we will define each tactic and, where necessary, offer additional commentary. We have also loosely categorized the tactics based on the time that may be required to implement them. This is not meant to be taken literally, but can instead be used as a guideline. It underlines our belief that some of these are quite easy to implement, while others require a greater investment of resources.



The information contained above is for illustrative purposes only.

Tactics that can be implemented in one week:

Use challenge mechanism: Nominate a devil's advocate, whose role is to challenge broadly accepted opinions.

Readers may be familiar with psychologist Solomon Asch's conformity studies, which found that when individuals were put into a group setting, they were prone to agree with the group despite the obvious inaccuracy of the group's conclusions.⁵⁹ Asch also found that the existence of one dissenter encouraged the study participant to speak up and correctly identify the correct conclusion.⁶⁰ This social pressure affects all humans, including investment professionals. The existence of a devil's advocate can help alleviate this problem.

Keep records of decisions: Utilize tools such as decision diaries and investment policy statements to keep accurate track of past choices.

Decision diaries have been utilized since the days of famed trader Jesse Livermore,⁶¹ with the goal of counteracting hindsight bias. Investment policy statements, which lay out investors' plans and investment strategy in advance, are key tools to help keep investors focused on their long-term goals.

Use behaviorally modified asset allocation: Alter a "rational" optimized portfolio in order to adapt to clients' psychological tendencies.

The traditional asset allocation approach, grounded in modern portfolio theory, requires the use of optimization software to construct portfolios. Theoretically, these portfolios should present the best available risk/return tradeoffs. However, individual investors may find it difficult to maintain a strategic allocation to such portfolios through full market cycles. For some investors, particularly those who demonstrate strong loss aversion, it can make sense to reduce or eliminate exposure to certain investments which are particularly volatile, even if this results in a sub-optimal portfolio. This is because volatility can cause investors to buy and sell at inopportune times, thereby undermining long-term performance.

Tactics that can be implemented in one quarter:

Establish effective feedback loop: Implement a process that includes both "the awareness of defensive reaction patterns" by the employee and the feedback skill of the manager (Learning Culture).

According to a 2014 academic study,⁶² feedback is necessary to recognize and address mistakes. This aids in the learning process. To facilitate constructive feedback, managers need to have strong communication skills and provide context when giving advice. At the same time, the person receiving the feedback should strive to create "distance from the emotional reaction ... to make room for logical reflection." This tactic is most effective when the parties involved have high emotional

intelligence. Lastly, a trusting relationship between the manager and employee is an important prerequisite to creating a successful feedback loop.

Beware of behavioral biases: Adopt a system of regular self-assessment for cognitive and emotional biases (i.e., diagnostic tool).

Being aware of behavioral biases is easier said than done. It is crucially important that investment professionals and investors not only understand these biases, but also their own personal susceptibility to them. A diagnostic test to help identify behavioral biases can be a good place to start. Additionally, investment professionals can seek to identify specific points in their investment decision-making process where they are particularly vulnerable to the influence of psychological biases. Using other tactics such as checklists, challenge mechanisms and a trading discipline, they should approach these pivotal moments with particular care.

Incorporate client segmentation: Use advanced analytics to gain deeper insights into client behavior.

Statistical methods such as cluster analysis can help the investment management industry to develop a better understanding of the characteristics and needs of clients. Client segmentation is commonplace in other industries. Online retailers in particular utilize their wealth of customer data to better serve the needs of their shoppers. Early adopters in the investment industry have included QSuper, an Australian superannuation fund, which has applied client segmentation to its 440,000 default fund members.⁶³

Increase active share: Increase the share of portfolio holdings that differ from a portfolio's benchmark index.

This tactic is most applicable to asset managers with active investment mandates. Active share measures the difference between the weights of holdings in a portfolio compared to the holdings of its benchmark. Some managers may be tempted to avoid feelings of regret by mirroring their benchmarks. However, academic research has found that funds with higher active share tend to outperform their peers.⁶⁴ In extreme cases, low active share has led to legal action by clients alleging that they have paid active fees for index tracking.⁶⁵

Integrate trading discipline: Create rules to instigate buying, sizing and selling decisions.

Investment professionals should analyze the effectiveness of their buying, selling and sizing decisions. Based on their investment time horizon and style, they can create rules to help make sure that the right decisions are made at the right time. For example, a manager might make a rule that a holding be reviewed if it underperforms by a given amount, or if it has been in the portfolio for a given period of time.⁶⁶

Recruit for emotional quotient (EQ): Tailor interviews towards determining emotional intelligence and apply psychometric testing.

Research suggests that it is very difficult to *train* individuals to have higher emotional quotients.⁶⁷ This increases the importance of screening potential candidates in advance. After reviewing this tactic, a psychologist at a top US university suggested that, as a start, individuals should consider taking simple tests, such as a “Mind in the Eyes”⁶⁸ online test to help assess their baseline level of emotional intelligence.

Along with recruiting for EQ, it is important to hire individuals with diverse opinions and backgrounds. This will make tactics such as the challenge mechanism more effective.

Offer a manageable number of investment options: Reduce complexity and avoid analysis paralysis by limiting investment choices.

This strategy is particularly useful in relation to individual investors. Even though they say they want choices, investors are very likely to select default investment options.⁶⁹ Giving investors choices is valuable and necessary. Too many investment options, however, make the task of evaluating these options insurmountable, often leading investors to make no choice at all,⁷⁰ especially when they have limited knowledge on a particular topic.⁷¹

Investment professionals should obviously be allowed greater range of choice. However, they too may benefit from screening down their universe of available options, reducing their number of holdings to a more manageable level and focusing on the decisions that are most crucial to positive outcomes.

Draw comparisons: Make connections between a current investment thesis and similar historical and contemporary examples to determine if current expectations are realistic.

Overconfidence and an illusion of control can lead both investment professionals and individual investors to overestimate the precision and accuracy of their forecasts.⁷² One way to approach this issue is to compare the outcome of historical and contemporary examples to a specific investment thesis. For example, a growth investor might draw comparisons between the thesis behind a current technology holding and other technology stocks that have had similar characteristics.

Use checklists: Use checklists to test each investment decision against the intended investment process.

The point of an investment process is to create repeatability. This can only occur if the process is applied to every investment-related decision. A checklist helps make sure that every angle has been covered before a decision is made.

Tactics that can be implemented in one year:

Revise incentive structure: Establish a balanced compensation structure tied to the achievement of long-term individual or institutional goals.

This is admittedly one of the most difficult issues to address, even as it is one of the most important. Solutions vary depending on the situation. In general, an effort should be made to tie compensation to long-term incentives, and to align interests as much as possible. Organizations should consider transitioning away from paying based on assets under management or performance. Instead, they may choose to incentivize healthy behaviors that work towards the achievement of organizational goals. Compensation structures that are short-term in nature, or reward excessive risk-taking, should be avoided.

Measure risk in multiple ways: Recognize the varied risk characteristics of securities within a single asset class, and across asset classes, by employing factor models and advanced risk analytics.

The use of traditional asset classes can be helpful, but an overreliance on them can introduce unintended risks into a portfolio. Securities within asset classes often have disparate risk characteristics. Asset managers, institutional investors and even individual investors stand to benefit from slicing the risk characteristics of their portfolios in multiple ways, in order to better understand their exposures.

Deliver personal performance: Utilize four-component performance model, focused on alpha/beta generation, downside protection, income and liability management.

Investment solutions should be customized to each institutional or individual investor based on their specific needs for these four key components of performance. This subject is discussed at length in our “Influential Investor” paper.

Foster financial literacy: Develop programs to help establish a “threshold” level of financial literacy.

While the investment industry would benefit from better educated investors, this topic raises the question of whose responsibility it is to bring this about on a macro level. Because current levels of investor education are low in most parts of the world, individual industry participants need to act first on a micro level. Specifically, firms may choose to establish a baseline level of education that they believe will help their clients better understand their investment options. Financial literacy tests can go a long way towards diagnosing the current level of clients’ education.

Improve internal culture: Foster a culture which values organizational goals above individual goals.

Changing a company's culture is a monumental task which may not be welcomed in certain organizations. However, organizations should generally seek to move away from a philosophy where "guarding and protecting the image of oneself is a stronger influence than reaching the organizational goal."⁷³ Instead, they should strive to swiftly recognize and address mistakes, seeing them as opportunities for improvement. This process should help bring organizations closer to the achievement of true success.

CONCLUSION

In its current form, the Folklore of Finance results in failure. But a new folklore will pave the way for true success. Investment professionals and investors must develop new behaviors, with the aim of adding value to alpha *and* value to investors' goals.

By employing practical tactics and refocusing their activities, industry participants have the opportunity to improve their chances at attaining true success. As individuals change their own behaviors, the industry as a whole will also change.

New behaviors lead to **new** beliefs and, over time, a **new** Folklore of Finance will and must arise. True success depends upon it.

Appendix

Activity	Definition	Category of Folklore	Causes and Associated Biases
Modeling and Valuation Focus	Reliance on models and valuations to make investment decisions	Folklore of Time	Hindsight, Illusion of Control, Herding, Overconfidence, Phantastic Objects
Goal Prioritization	Emphasis on long-term goals over short-term returns	Folklore of Time	Short-Termism, Status Quo, Self-Control, Loss Aversion, Decision Fatigue
Past Performance Focus	Reliance on past performance to make investment decisions and to hire investment providers	Folklore of Time	Hindsight, Illusion of Control, Herding
Effective Information Processing	Ability to gather, process and use all relevant information objectively (including new information) to make decisions	Folklore of Knowledge	Conservatism, Confirmation, Representativeness, Anchoring, Framing, Availability, Home Bias, Mental Accounting, Endowment Effect, Regret Aversion, Heuristics, Disposition Effect, Cognitive Dissonance
Realistic Self-Assessment	Ability to recognize the limits of personal knowledge and capabilities	Folklore of Knowledge	Self-Attribution, Overconfidence, Hindsight, Illusion of Control
Empathetic Communication	Ability to effectively relate to and communicate with clients and colleagues	Folklore of Knowledge	Value Attribution, Overconfidence
Tolerance for Pain	Awareness of the natural tendency to avoid discomfort	Folklore of False Comfort	Career Risk, Loss Aversion, Regret Aversion, Cognitive Dissonance
Traditional Benchmark Focus	Use of irrelevant benchmarks to measure performance; tendency to benchmark hug	Folklore of False Comfort	Herding, Illusion of Control, Regret Aversion, Career Risk
Reliance on External Sources	Use of consultants, rating agencies and style boxes; comparing against peers	Folklore of False Comfort	Career Risk, Herding, Regret Aversion

Behavioral Biases

Anchoring Bias — beginning an analysis with a default number in mind and adjusting up or down from that number. The “anchor” number often unduly influences the ultimate conclusion. (Bunn 1975)

Availability Bias — giving a greater weight to easily recalled and recent information over information that is less recallable or harder to understand. (Taylor 1982)

Career Risk — occurs when the remuneration and decision to replace or retain an investment manager depends directly on the manager’s performance, driving the manager to short-termism and irrational behavior. (Dasgupta 2006)

Cognitive Dissonance — mental discomfort that results when confronted by new information that conflicts with existing beliefs or ideas. (Festinger 1962)

Confirmation Bias — seeking out, overvaluing or misinterpreting information that confirms prior beliefs and ignoring contradictory information. (Nickerson 1998)

Conservatism Bias — maintaining prior views or forecasts by inadequately incorporating new information. This causes individuals to overweight initial beliefs and underreact to new information. (Ritter 2003)

Decision Fatigue — deteriorating quality in decisions made by an individual after making a series of decisions. Results in inadequate consideration of information and rushed judgment. (Tierney 2011)

Disposition Effect — hastily selling assets whose price has increased while retaining for too long assets that have dropped in value. (Shefrin 1985)

Endowment Effect — valuing an asset more (greater than its objective value) when it is held. (Kahneman 1991)

Emotional Quotient — the level of one’s ability to understand other people, what motivates them and how to work cooperatively with them. (Gardner 1983)

Framing Bias — arriving at a different decision based on how the options are worded. (Tversky 1981)

Gambler’s Fallacy — believing that the probability of an event is lowered when that event has recently occurred, even though the probability of the event is objectively known to be independent from one trial to the next. (Clotfelter 1993)

Herding Bias — trading on the same side of the market in the same securities, ignoring conflicting information in favor of acting as other investors do, often for reassurance and comfort. (Grinblatt 1995)

Heuristics — simple rules used in forming judgments to make decisions, consisting of “mental shortcuts” that focus on certain aspects of a decision and ignoring others. (Nielsen 1994)

Hindsight Bias — seeing past events as having been predictable and reasonable to expect before they occurred. (Fischhoff 1975)

Home Bias — maintaining a high proportion of investments in securities listed in one’s own country as opposed to internationally diversifying. (Coval 1999)

Illusion of Control Bias — believing one can control and influence outcomes that one actually has no control over. (Langer 1975)

Loss Aversion — permitting losses and disadvantages to shape preferences differently than gains or advantages. The utility derived from a gain is much lower than the utility given up by an equivalent loss. (Tversky 1991)

Mental Accounting Bias — treating one sum of money differently than another equal-sized sum based on how the money is categorized. People mentally group their assets into non-interchangeable mental accounts, when in reality money is inherently interchangeable. (Thaler 1980)

Overconfidence Bias — demonstrating undeserved faith or confidence in one’s own judgments, to a higher degree than the judgment’s objective accuracy warrants. (Gerry 2002)

Phantastic Object — a mental representation in which an imagined scene fulfills a person’s desires to have exactly what she wants. The imagination drives investors to see what they want to see in an investment. (Tuckett 2008)

Regret Aversion — avoiding an action for fear of making a poor choice. (Humphrey 2004)

Representativeness Bias — classifying new information based on past experiences and classifications; especially using those classifications even if the new information does not necessarily fit. (Kahneman 1972)

Self-Serving (Self-Attribution) Bias — people’s tendency to attribute positive events to their own character but attribute negative events to external factors. (Boyes 2013)

Self-Control Bias — failing to act in pursuit of long-term goals because of a lack of self-discipline. Short-term satisfaction interferes with the achievement of long-term objectives. (Pompian 2006)

Short-Termism — avoiding investments that are necessary for the future but require a sacrifice of short-term benefits. (Laverty 1996)

Status Quo Bias — doing nothing or maintaining a previous decision when instead a change should be made. (Kahneman 1991)

Value Attribution — imbuing someone or something with certain qualities based on perceived value, rather than objective data. (Brafman 2008)

Authors

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- 15 IBM’s analysis shows that, for the past 20 years, the financial markets industry has profited by capitalizing on “pockets of opacity” — i.e., creating, buying and selling complex products, often via lightly regulated entities. However, this does not produce sustainable value. Global revenues from traditional “pockets of opacity” have fallen dramatically. Source: Duncan, Suzanne, Daniel Latimore and Shanker Ramamurthy. “Toward Transparency and Sustainability.” IBM. 1 Apr. 2009. Web. <https://www.ibm.com/smarterplanet/global/files/us_en_us_banking_gbe03214-usen_financialorder.pdf>.
- 16 This raises the question of how much active investment is necessary to support price discovery. Based on our conversations with academics and investment professionals, the most commonly voiced opinion is that about 15-30 percent of industry-wide assets

must be actively managed. This makes for an intriguing contrast given that the current percentage of actively managed investments is approximately 85 percent of worldwide assets under management. Of course, the actual equilibrium point is unknowable, but it is interesting to opine nonetheless.

- 17 State Street Center for Applied Research Study 2012 — “The Influential Investor: How Investor Behavior is Driving Performance.”
- 18 State Street Center for Applied Research Anonymous Interview.
- 19 Michael Roberge, president and CIO of MFS Investment Management (\$420 billion in AUM), from: Comtois, James. “Savvier Investors Taking Bigger Role with Managers.” *Pensions & Investments*. 26 May 2014. Web. <<http://www.pionline.com/article/20140526/PRINT/305269979/savvier-investors-taking-bigger-role-with-managers>>.
- 20 State Street Center for Applied Research Survey Analysis 2014; Questions asked: To what extent do you agree with the following statements? Alpha generation is important to my organization’s investment goals; My organization understands its alpha generation goals; My organization communicates the alpha generation goals well to its providers; My provider(s) understand my organization’s alpha generation goals; Beta generation is important to my organization’s investment goals; My organization understands its beta generation goals; My organization communicates the beta generation goals well to its providers; My provider(s) understand my organization’s beta generation goals; Downside protection is important to my organization’s investment goals; My organization understands its downside protection goals; My organization communicates the downside protection goals well to its providers; My provider(s) understand my organization’s downside protection goals; Liability management is important to my organization’s investment goals; Liability management is important to my organization’s investment goals; My organization communicates the Liability management goals well to its providers; My provider(s) understand my organization’s liability management goals; Income management is important to my organization’s investment goals; My organization understands its Income management goals; My organization communicates the Income management goals well to its providers; My provider(s) understand my organization’s income management goals.
- 21 Perry, Alan, John Ehrhardt and Zorast Wadia. “2013 Pension Funding Study.” *Milliman*. 25 Mar. 2013. Web. <<http://www.milliman.com/insight/eb/2013-Pension-Funding-Study/>>.
- 22 State Street Center for Applied Research Survey Analysis 2014; Question asked: Which of the following would better enable you to achieve your investment goals? Select two: If I were better educated in investing; If I devoted more time to my investment goals; If product fees were lower; If I had good / better advice from a financial advisor or someone I trust; If investment advice were more affordable; Nothing — I do achieve my investment goals; Don’t know; Other.
- 23 See for example, Graham Hand, “Does the Public Hate Us?” *Cuffelinks*, July 17, 2014, which references data showing stock brokers and insurance brokers (and more recently financial planners) rated significantly below accountants and bank managers since 1985.
- 24 CFA Institute & Edelman Investor Trust Study. *CFA Institute*. Web. <http://www.cfainstitute.org/learning/future/getinvolved/Pages/investor_trust_study.aspx?PageName=searchresults&ResultsPage=1>.
- 25 “Private Equity: Remarkably Easy?” *Chief Investment Officer*. 30 June 2014. Web. <http://www.ai-cio.com/channel/NEWSMAKERS/Private_Equity__Remarkably_Easy_.html>.
- 26 Additional examples include Australian Superannuation funds (Source: “To Outsource, Or Not To Outsource — That Is The Australian Question.” *Chief Investment Officer*. 29 May 2013. Web. <http://www.ai-cio.com/channel/manager_selection/to_outsource,_or_not_to_outsource_-_that_is_the_australian_question.html>.); Abu Dhabi Investment Authority (Source: “Abu Dhabi Moves Further from External Fund Managers....” *Chief Investment Officer*. 28 May 2013. Web. <http://www.ai-cio.com/channel/NEWSMAKERS/Abu_Dhabi_Moves_Further_from_External_Fund_Managers....html>.); and US Pensions (Source: Williamson, Christine. “‘Insourcing’ Trend Growing among Big Institutional Investors.” *Pensions & Investments*. 13 May 2013. Web. <<http://www.pionline.com/article/20130513/PRINT/305139976/insourcing-trend-growing-among-big-institutional-investors>>.)
- 27 State Street Center for Applied Research Survey Analysis 2014; Question asked: To what extent would you agree or disagree with the following statements in today’s environment? (Financial Institutions are most likely to offer products and services in the investment firm’s own best interest — Financial Institutions are most likely offer products and services in the clients’ best interest).
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- 32 State Street Center for Applied Research Survey Analysis 2014; Question asked: I think it is good that I can make the investment decision for myself (vs. somebody else, such as my employer).

- Agree; Disagree. Note that this question refers specifically to investors' attitudes regarding defined contribution plans.
- 33 State Street Center for Applied Research Survey Analysis 2014; Question asked: What has been your best investment to date? Was that entirely your investment choice or did someone significantly influence your decision? Entirely my decision; Influenced by family member / friend; Influenced by bank affiliated advisor; Influenced by independent financial advisor; Influenced by insurance affiliated advisor; Influenced by my retirement plan; Influenced by my lawyer; Other. Note that this question refers specifically to investors' attitudes regarding defined contribution plans. "Our philosophy is pretty simple," says Mr. Mock, president and CEO of OTPP, who was paid \$2.9 million last year. "If you want upper-quartile performance, you need upper-quartile people...we have to start paying market rates, we have got to start paying for performance. And so today our portfolio managers can make \$700,000 to \$900,000, while many of our vice-presidents can make \$2 million. That is not normal pension-plan compensation." Chris Newlands, "Ontario Pension Tsar's Harsh Hedge Fund Lesson," *Financial Times*, August 3, 2014.
 - 34 State Street Center for Applied Research Survey Analysis 2014; Question asked: In the future, do you think that technological advancements in providing financial advice will better serve individuals with regards to value and cost than financial advisors? Yes; No.
 - 35 Investment providers cited "new product development" as their No. 1 strategic priority in the next decade. Source: Center for Applied Research Analysis, 2012. Question asked: What are your top strategic business priorities over the next 10 years? Select up to two. Mergers and acquisitions; divestitures; new product development; new solutions development; expanded risk management capabilities; investment talent planning/talent management; governance model changes; client analytics/segmentation; compensation structures; expanded regulatory compliance capabilities. <https://www.cabotresearch.com/issue17.php>.
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 - 38 Heath, Chip, and Dan Heath. *Made to Stick: Why Some Ideas Survive and Others Die*. Random House LLC, 2007.
 - 39 In the US, the average 24-month forecast error is 93%, and the average 12-month forecast error is 47% over the period 2001-2006. The data for Europe are no less disconcerting. The average 24-month forecast error is 95%, and the average 12-month forecast error is 43%. Source: James Montier et al. *Mind Matters: The dangers of DCF*. Societe Generale Cross Asset Research. 9 September 2008: 2-4. <<http://csinvesting.org/wp-content/uploads/2012/06/dangers-of-dcf.pdf>>.
 - 40 Soe, Aye. "Does Past Performance Matter? The Persistence Scorecard." *S&P Dow Jones Indices*. McGraw Hill Financial, 1 June 2014. Web. <<http://www.spindices.com/documents/spiva/persistence-scorecard-june-2014.pdf>>.
 - 41 Whitehead, Marcus. "Genuine Active Managers Can Add Value." *Financial Times*. 10 Jan. 2010. Web. <<http://www.ft.com/cms/s/0/b4cb4ed2-fdc6-11de-9340-00144feab49a.html#ixzz3E0RJx3J8>>. Research on decisions by more than 2,000 UK pension schemes over a 20-year period by Blake, Timmermann, Tonks and Wermers in 2009 suggests managers were typically fired having significantly underperformed a UK equity benchmark, managers were appointed having recently outperformed the benchmark and that both the fired and hired investment managers produced returns broadly in line with the benchmark index after the change — that is, they both performed in line with an index tracker. A study by Goyal and Wahal in 2008 looked into similar hiring and firing decisions by US plan sponsors. It showed US equity managers were typically fired for poor performance and hired after significant outperformance. As in the UK, the outperforming manager, once appointed, typically produced returns broadly in line with the index. The fired manager proceeded to outperform the benchmark in the period after their removal.
 - 42 State Street Center for Applied Research Survey Analysis 2014; Question asked: Which timeframe does your organization use to measure the provider's performance / investment performance of portfolio managers? 2) Which timeframe does your organization use to measure the investment performance of portfolio managers? 1–3 months; 4–6 months; 7–11 months; 1–3 years; 4–9 years; 10–20 years 3) Which timeframe does your organization use to measure the investment performance of portfolio managers such as yourself? 1–3 months; 4–6 months; 7–11 months; 1–3 years; 4–9 years; 10–20 years.
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- 48 State Street Center for Applied Research Survey Analysis 2014; Question asked: How do you personally define success when investing? Being on-track to achieving my long-term investment goals; Only making gains and no losses; Outperforming the market; Achieving my short-term investment goals; Outperforming my friends/family/colleagues; Other.
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- 55 The earliest work in this space was done by Daniel Bernoulli in 1738, which Kahneman and Tversky utilized to build their prospect theory (from which most of the terms including endowment effect originated).
- 56 State Street Center for Applied Research 2014 Study; Questions asked: In each of the following statements, which scenario would you prefer? A 100% chance of winning \$80,000; An 80% chance of winning \$100,000 and 20% chance of winning nothing. In each of the following statements, which scenario would you prefer? An 80% chance of losing \$100,000 and a 20% chance of losing nothing; A 100% chance of losing \$80,000.
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