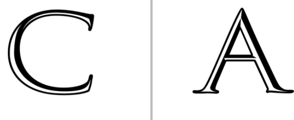

CAMBRIDGE ASSOCIATES LLC

BEHAVIORAL FINANCE

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ABSTRACT

1. Proponents of behavioral finance argue that many propositions in finance and investment theory are predicated on the false presumption that investors act rationally to maximize their economic well-being. In fact, they assert, investors are not the rational automatons found in textbooks, but are subject to behavioral influences that distort their decision-making. Among these are tendencies to:

   - overrate the importance of recent information;
   - blindly extrapolate past results into the future;
   - oversimplify complex issues;
   - avoid ambiguity by underestimating uncertainty;
   - overestimate their own knowledge, expertise, and capabilities;
   - make decisions on the basis of available information, even if this information is inadequate, irrelevant, and unreliable;
   - focus only on evidence that supports preexisting beliefs, ignoring evidence that refutes those beliefs;
   - be motivated by regret over past actions, both taken and not taken; and
   - selectively edit their memories of past decisions and results.

   Investors and investment committees that recognize these traits in their own behavior can attempt to counteract the mistakes that are likely to ensue by monitoring how they make decisions, by documenting the rationale for each decision, and by measuring results.

   Investment committees also need to recognize that their desire for short-term results, during their tenure on the committee, may clash with the institution's long-term goals. Constantly changing course in mid-stream, in response to choppy squalls, is a prescription for poor returns over the long term. Before policy allocations are changed, the reasons for such changes and their likely effect should be discussed and analyzed. Meanwhile, the committee should also monitor and review how effectively it has implemented policy allocations.

2. Investment committees are also particularly susceptible to certain decision-making biases engendered by group dynamics. Among these are:

- A lack of rigor resulting from the diffusion of responsibility and accountability for investment decisions. Whenever economically possible, a great deal of responsibility and accountability should be delegated to full-time professional investment staff rather than borne by part-time, volunteer investment committee members, however well-qualified.
- A tendency to follow the herd, regardless of whether that is the best direction for a particular institution, given its resources, financial needs, and so on.
- A custom of making only those decisions that are least controversial, most conventional, and offend no one. Mediocre results are the best that can be expected when decisions must satisfy the lowest common denominator.
- A tendency to allow more aggressive and vocal committee members to dominate meetings and foist their views on others, even if these are relatively extreme opinions.

SUMMARY

Introduction

Although papers in behavioral finance sometimes labor prodigiously to reach conclusions investment practitioners might regard as crashingly obvious, the main tenets of this emerging discipline nevertheless provide an invaluable checklist of behavioral mistakes all too familiar to experienced investors. This is not always apparent in the academic literature, which favors formulas and models explicated in the opaque jargon of the academy, and for that reason it seemed useful to summarize in layman's language some of the key points specifically relevant to investment committees, in the hope that this might help enhance the quality of their decision-making.

Information Overload and Habitual Biases

How do we process the vast amount of information constantly raining down upon us? On the one hand, the strategies we develop to cope with this deluge are necessary mechanisms that enable us to identify, organize, and evaluate whatever information seems most relevant to the issue in question; on the other hand, these strategies of sorting and seeing readily become habitual biases, or crude "rules of thumb" that don't apply equally well in all circumstances, and may degrade the quality of our decision-making. Among investment committees, the most common manifestations of this are tendencies to:

- overrate the importance of recent information;
- blindly extrapolate past results into the future; and
- oversimplify complex issues.

Overrating the Importance of Recent Information

Perhaps the single most common investment mistake is to assume that because such-and-such an investment performed well (badly) last year, it is therefore likely to perform well (badly) next year. The second most common mistake is assuming that because such-and-such an investment performed well

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[1] Because they see themselves as heretics attacking the established orthodoxies of the Efficient Market Hypothesis (EMH) and the Capital Asset Pricing Model (CAPM), academic proponents of behavioral finance tend to expend considerable energy fighting to establish positions they can subsequently defend against counterattack by these entrenched interests. To many investors, however, this is so much tilting at windmills, because they never accepted the validity of EMH (except perhaps in a very diluted form), and have routinely perceived CAPM as a purely theoretical construct that fails to reflect the actual conditions prevailing in the real investment world.

[2] So characterized by Hersh Shefrin in *Beyond Greed and Fear*, Harvard Business School Press, 2000, an excellent and highly readable primer on behavioral finance, which this paper draws on extensively and from which it borrows many terms.

(badly) last year, it is therefore likely to perform badly (well) next year. The first mistake is more common because-as we noted in a 1998 paper, *U.S. Stock Manager Selection*-the everyday experience of most people leads them to the *generally* reliable observation that past performance serves as a good predictor of future performance: good singers don't usually turn into frogs, nor good lawyers into morons, nor good brain surgeons into butchers. Unfortunately, such rules are less easily applied in the investment world, the dynamics of which are entirely different and infinitely less predictable. Similarly, however, the expectations of those possessed with "gambler's fallacy" are equally irrational: there is no good reason to assume that the relative performance of such-and-such an investment, or investment manager, must necessarily reverse course-that it must perform well this year *because* it did badly last year, or vice-versa. In each case, the fundamental mistake is one of oversimplification, resulting from inordinate concentration on recent performance to the exclusion of other kinds of information that should also inform any investment decision.

Blindly Extrapolating Past Results into the Future

Why do so many investment committees persist in making decisions (particularly in the hiring and firing of managers) primarily on the basis of relatively recent performance data, despite the large body of evidence documenting the poor results of decisions made in this way? This question drills into the mother-lode of behavioral finance. In addition to the behavioral traits cited above, we should add the following to our list:

- overconfidence
- the illusion of validity
- frame dependence
- regret
- basing decisions on whatever information is available (whether relevant or not)
- aversion to ambiguity

Overconfidence. Psychologists have long documented our tendency to overrate our own *relative* abilities in such activities as driving a car, and teachers have long recognized how insulted parents feel when their children are characterized as "average." Studies and surveys have revealed the same trait among investors, and there is no reason to assume this should not be evident also among investment committees, which are typically composed of people who have made their mark in their various professions and have more reason than most to exude confidence. But although institutional investing is to some extent a competitive business-no committee is happy with results that place it toward the bottom of peer

group performance rankings-investment committees rarely attempt to assess whether they have any comparative advantage or handicap, compared to other investors. Group dynamics (see more detailed discussion below) tend to bolster confidence in the abilities of the group, even if individuals realize they are deficient in key areas of knowledge or understanding. Overconfidence can lead to hasty decisions, repented at leisure, and to extensive "self-attribution bias" (as Hersh Shefrin terms it) whereby committees take credit for successful results while attributing bad outcomes to others (e.g., advisors or managers) that have "let them down."

Overconfidence is related to oversimplification, availability bias (i.e., making decisions on the basis of what information is most readily available, regardless of whether it happens to be relevant or sufficient), and aversion to ambiguity because studies have indicated that people manifest the greatest degree of misplaced confidence in their decisions about complex situations, involving high levels of unpredictability and uncertainty, where the outcome of the decision is not immediately known. The process of manager selection fits this description to a T, which is why committees generally overrate their ability to pick active managers, and why we have argued that success depends on the adoption of a more rigorous process than committees typically pursue.

What should committees do to combat these tendencies? A useful first step is self-evaluation-what can we claim to know reasonably well, and what do we need to learn more about if we are to make well-informed decisions? What is the basis for our assumption that *we* can time the markets, or select active managers successfully, when the preponderance of evidence indicates that most investors fail to do so effectively? What knowledge, expertise, or discipline do we possess that others lack? What qualities or resources might others possess that we lack? Where, in other words, is our comparative advantage/disadvantage? A second step is documentation. Few committees document their decisions properly, recording not only the decision itself, but why and how it was made, and what expectations are implied. This can be invaluable later, either to reinforce the value of a disciplined process, or to reveal the inadequacy of a process that led to hasty decisions and poor results. Documentation also helps a committee communicate to new members why and how certain decisions were made, and enables the committee to measure actual results against original expectations. As committee membership turns over, its collective memory tends to fade; in addition, we all edit our memories (see **selective memory**, below) and the maintenance of objective records therefore serves as a useful tool for reinforcing good decision-making and counteracting the tendency to revert to bad habits.

The illusion of validity. Documentation might also serve to indicate when and how a committee falls prey to what behavioral finance authors call the illusion of validity. This is the tendency we all have to focus on whatever evidence seems to confirm our existing beliefs, while ignoring or dismissing what refutes them. Writing to his brother and sister-in-law, the poet John Keats asserted that, "The only means

of strengthening one's intellect is to make up one's mind about nothing-to let the mind be a thoroughfare for all thoughts. . . All the stubborn arguers you meet with are of the same brood-they never begin upon a subject they have not preresolved on." Similarly, with most of us, the older we get, the more we cling to set ideas, resisting the evidence under our noses if it contradicts what we "know". Although committee members must make decisions and therefore must make up their minds, nevertheless they should be open to new ideas and should welcome sound challenges to old ideas to ensure they hear music other than that to which their ears are already attuned.

Frame dependence. As advertisers and pollsters well know, *how* a question or issue is framed profoundly affects the responses it evokes. A money management firm engages in careful framing when it shows portfolio performance for the past 7.25 years, during which period it outperformed the benchmark index, rather than for the past five or ten years-periods over which it failed to beat the benchmark. Committees can easily overcome this by creating more objective frames; for example, by looking at performance over multiple time periods, by measuring whether value added was simply a result of incurring greater risk, by making sure the performance benchmark is appropriate, and so on.

Our **selective memory** also leads us to frame some issues in a certain way, skewing the decisions we make. For example, many committees were deeply opposed to investing in commercial real estate in the early 1990s, when pricing was unusually favorable, because they remembered only the terrible performance of the real estate investments they had made in the late 1980s, when prices were high. This is both an example of decision-making unduly colored by regret (see below), and of selective memory, since committees tended to focus exclusively on that single period of poor performance, rather than recalling it as one among many periods of varied results from such investments. The antidote to such powerful, subjective feelings is to ask oneself whether one's instinctive responses are supported or undermined by whatever *objective* data are available on the subject.

Regret. We all like to believe our investment decisions are based on sound reasoning; in fact, in this, as in other spheres, we often surrender to impulse buying. And regret is among the most powerful of all impulse motivators. Again and again we see investors allocating money to an asset class that has recently performed well, motivated in part by the misplaced assumption that it will therefore perform well next year, but also in part by regret at having missed the boat last year or the year before. We all know this is irrational, that it often results in allocations to real estate in the late 1980s, for example, or to emerging markets in 1994, but the impulse is universal and well-nigh irresistible. The antidote is to focus constantly on the question of what the asset class is priced to return *tomorrow*; that is, to try as hard as possible to ignore what it returned *yesterday*, which is water over the dam. Today, the clearest example of regret in full spate is the current rage for venture capital, the returns to which have been spectacular of late, with the inevitable result that it has attracted vast amounts of new capital-which has the effect, of course, of dramatically *lowering* future expected returns.

Agency Issues and Competing Time Horizons

How would you like to join the investment committee of an institution that had ranked in the top quartile of its peers during the preceding five years, only to have its relative performance sink to the bottom quartile during your five-year tenure? Obvious answer. And yet this sort of variability of relative performance may well be exactly what one should expect, given the institution's long-term asset allocation. In other words, the price of long-term (i.e., 25+ years) success may well be occasional short-term (i.e., five-year) periods of bottom quartile performance. From long experience advising endowment funds, we know with certainty that while there are numerous different routes to success in endowment fund management, the one sure-fire route to failure is constantly chopping and changing course in mid-stream. For the investment committee members whose tenure coincides with a period of severe relative underperformance, however, the temptation to change course can be overwhelming even if the only real problem is that their investment time horizon (e.g., five years) does not coincide with that of the institution, whose horizon should be very much longer.

In his new book, *Pioneering Portfolio Management*, David Swensen, Yale's chief investment officer, speaks to this point when he writes,

> *The wedge between principal goals and agent actions causes problems at the highest governance level, causing some fiduciary decisions to fail to serve the highest interests of a perpetual life endowment fund. Individuals desire immediate gratification, leading to overemphasis of policies expected to pay off in a relatively short time frame* (p. 5).
>
> *Because investment staff and trustees desire to leave their marks on the portfolio, potential problems exist if the investment fund's horizon exceeds a staff member's expected tenure or trustee's term* (p. 321).

As a first step towards countering this potential problem, committees should recognize that their natural desire for short-term results may conflict with the disciplined application of long-term policies. Then they should ask two questions before impulsively changing direction in an effort to catch whatever winds have blown in recent years (and may already have blown out):

- Is our long-term asset allocation policy sound? That is, do we still believe it will enable us to meet our investment objectives *over the long term*? If not, why not? What has caused us to change our mind in this regard?
- Are we managing the portfolio effectively? Or are we subverting our long-term objectives through poor *implementation* of sound asset allocation policies?

The first of these can be answered by analyzing the shortfall risk of the policy portfolio, and the second by analyzing the performance of the actual portfolio, in risk-adjusted terms, relative to policy.

Biases in Group Decision-Making

Many of the behavioral traits noted above apply equally to individuals as to groups. However, groups are particularly susceptible to certain decision-making biases engendered by group dynamics, and these frequently infect investment committees.

Diffusion of Responsibility

When the onus of accountability for managing a pool of assets rests squarely on the shoulders of a specific individual, that person is less likely to make a rash or ill-considered decision than might be the case if he or she did not bear such responsibility. When a committee is in charge, however, responsibility is diffused and accountability diluted, with the result that committees are often more cavalier in their decision-making. This can be particularly true among endowment funds, whose investment committee members are unpaid volunteers devoting only a fraction of their busy schedules to the management of the endowment. Over the years, larger funds that can afford professional investment staffs have consistently outperformed smaller endowments whose investment committees make virtually all portfolio management decisions. This is less a result of professionals beating amateurs, since investment committees generally include investment professionals, but more a result of the larger funds expending more time and resources on endowment management, and of the professional staff being largely accountable for the fund's performance.

There are several solutions to this problem. The first is for the full board to request brief, periodic reports from the investment committee. Even among collegial trustees, the scrutiny of ones' peers serves as a sharp stick encouraging investment committee members to discharge their responsibilities as best they can. The second is to work hard to ensure that investment committee members are not only possessed of some investment expertise, but are also willing and able to devote the time necessary to manage the fund. The third is to hire professional investment staff, paid for out of the fund itself, as soon as the fund is large enough to justify this expense. Most mid-sized endowments (i.e., $200 million to $1 billion) pay too little attention to cost control and are often penny-wise and pound foolish, spending lavishly on management fees while underfunding simple oversight and operational functions that can also add or detract value. The math is compelling: to break even on the addition of a full-time investment staffer, paid $150,000 annually, a $400 million fund only has to earn an additional 3.75 basis points each year.

Herding

There is a fine line between going out on a independent limb and following the crowd. Too often, investment committees are unduly influenced by how other endowment funds are investing, without regard to whether such investments are appropriate for their particular institution. "Sensible portfolio management processes encourage creation of portfolios appropriate for the institution, not replication of other institutional asset mixes" (Swensen, p. 324). At its worst, herd behavior becomes lemming-like, as summed up neatly in a Fortune article of July, 1973, about the extraordinary concentration of the U.S. stock market in a few very highly valued growth stocks:

> *The game also forcibly suggests to many investment managers that it is a mistake to be unorthodox and that the percentage play is to do what everyone else is doing. One Wall Street professional who talks regularly to bank portfolio managers counts as all too typical a remark made recently to him by one of them: "It doesn't really matter a lot to me what happens to Johnson & Johnson as long as everyone has it and we all go down together."*

In the event, the manager was wrong: it *did* matter; they all did go down together; he lost his job; and institutional investors never again entrusted significant assets to bank trust departments.

Although it makes eminent sense for investment committees to keep an eye on how other endowment funds are investing and to be skeptical of radical deviations from the general trend, the purpose of an endowment fund is to serve the needs of a particular institution, not to mirror what others are doing.

Lowest Common Denominators and Bull Elephants

These are opposites. Some committees attempt to work entirely by consensus and will not make a decision unless every member is 100% on board. Paralysis often results. The mistake here is to assume that deferring a decision or standing pat is somehow safer or more conservative than making a change, and of course this is not necessarily true at all. The solution is a strong chairperson, who ensures that all members of the committee get to voice their opinions and then puts the question to a vote.

Conventional wisdom holds that groups tend to make less risky or aggressive decisions than individuals because extreme positions are diluted by group decision-making and pulled back towards a more conservative, consensus position. This may be true for heterogeneous groups, whose diverse members start with divergent opinions and then have to work out some compromise that satisfies at least a majority. However, studies have shown that extreme positions often carry the day among more homogeneous groups, whose members implicitly accept each other's credentials and are therefore less likely to challenge

each other's views. In a meeting of white supremacists, for example, opinions most of us would regard as evidence of loony paranoia are expressed and accepted as everyday truths, beyond questioning. In homogeneous investment committees, a situation can easily develop in which a position is advocated that no one except the proponent, in fact, feels entirely comfortable with, but each is unwilling to oppose for fear of being isolated from the group, and is reluctant to delay a decision each thinks the others accept. Thus, the opinions of more aggressive and vocal committee members may carry the day, even if they are relatively deficient in knowledge and expertise.

To counteract this dangerous propensity, institutions should strive for diversity in the composition of their investment committees, and committee chairs should actively promote a climate of challenge and debate in meetings, while ensuring that enough time is devoted to important issues so that snap decisions are not made on the say-so of one person's poorly-informed opinion. (However, one of the most common mistakes among investment committees is trying to cram too many decisions into too little time, with detrimental effects on the quality of those decisions.)

Conclusion

Most of us can make successful decisions under conditions of near certainty. And we can usually make mostly successful decisions when we are handed clear probabilities (e.g., when we know that the probability of A occurring is 80% and of B occurring is 20%). The difficulty with investment decisions is that probabilities can be hard to define with any confidence and much uncertainty prevails. Under these conditions, we tend to fall back on what we think we know, and to assume this is sufficient and relevant, even when the evidence suggests otherwise. In groups like investment committees, it is especially important to determine just what is and is not known, and to understand what cognitive errors members are most prone to commit. Conventional wisdom should be treated with suspicion and consensus opinion subject to scrutiny. Committee members should be encouraged to challenge each others views, playing devil's advocate if necessary. Not only decisions, but the rationale for those decisions and the ensuing results should be documented and reviewed. Sufficient time and resources should be devoted to deliberations so that the committee does not rush into important decisions without adequate information and enough time for thorough discussion-as Swensen writes, "Casually researched, consensus-oriented investment positions provide little prospect for producing superior returns in the intensely competitive investment management world."

At the end of the day, a better decision-making process does not guarantee superior results, but it certainly improves the odds.

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