The Future of Wealth Management: Incorporating Behavioral Finance into Your Practice

By Michael M. Pompian, CFA, CFP and John M. Longo, Ph.D., CFA

Michael M. Pompian, CFA, CFP is a Wealth Management Advisor at a global financial services firm and is based in northern New Jersey. He advises private clients in portfolio construction, financial planning, and wealth transfer strategies. Dr. John M. Longo, CFA is Chairman of the Investment Committee at The MDE Group, an investment advisory firm. He is also a faculty member in the Finance & Economics Department at the Rutgers Business School. Mr. Pompian and Dr. Longo have published several articles on the subject of practical application of Behavioral Finance. Mr. Pompian can be reached at (888) 807-1753 or mpompian@investorpsych.com. Dr. Longo can be reached at drfinance@comcast.net or (609) 730-8281.

Executive Summary

- Irrational investor behavior is commonly observed by wealth management practitioners when creating and administering investment solutions for their private clients. Many advisors would like to address behavioral issues, but lack diagnostic tools and application guidelines to employ behavioral finance research with clients.
- Many clients would be well served by adjusting their asset allocations to account for biased behavior. By doing so, they would stand a better chance of adhering to their investment programs and enjoy better long-term investment results.
- In applying behavioral finance research to client situations, practitioners must decide whether to attempt to change their clients' biased behavior or adapt to it. Furthermore, quantitative guidelines need to be available when modifying asset allocations to account for biased behavior.
- Practitioners should adapt to biases at high wealth levels and attempt to modify behavior at lower wealth levels. They should adapt to emotional biases and moderate cognitive biases. These actions will lead to a client's *best practical allocation.*
- Three case studies illustrate how these guidelines are applied. A quantitative model is also unveiled that calculates acceptable discretionary distances from the mean-variance output for determining the *best practical allocation*.
- The article offers practitioners a framework to better understand how behavioral finance can be applied to their individual clients.

Introduction

For many experienced wealth management practitioners, the task of creating and delivering investment solutions to private clients cultivates both a keen awareness of "less than rational" decision-making and a potential interest in the branch of economics—behavioral finance—that provides insights into irrational investor behavior. Why, then, has the robust body of behavioral finance research not enjoyed mainstream application? Practitioners employ but a few of the significant number of investors' behavioral "biases" – defined as systematic errors in judgement – that have been identified by researchers. Why not more, and why have practitioners failed to consider behavioral biases in the critical duty of designing asset allocation programs for their clients? The authors offer two primary explanations for this phenomenon, and contend that once these issues are resolved, behavioral finance will represent a new and vast frontier in serving clients.

Firstly, behavioral biases, as presently articulated, are not user-friendly because there is not a widely accepted "industry standard" methodology of identifying an individual investor's biases. Researchers have done a significant amount of work to reveal behavioral biases, which are certainly usable, but practitioners would enormously benefit from a comprehensive volume, which does not presently exist. Secondly, if an investor's behavioral biases *have* been identified, practitioners lack the guidelines necessary for applying these biases during the asset allocation decision-making process.

Developing proper guidelines for applying biases to asset allocation decisions - the focus of this paper - requires answering a central question: when should advisors attempt to **moderate** the way clients naturally behave to counteract the effects of behavioral biases, so that they can "fit" a pre-determined asset allocation (for purposes of this paper we will call this *moderating a client*); and when should advisors create asset

allocations that **adapt** to clients' biases, so that clients can comfortably abide by their asset allocation decisions (for purposes of this paper we will call this *adapting to a client*)? And, once the decision is made to either moderate or adapt, what quantitative parameters should be in place when putting the moderate or adapt recommendation into action?

These questions will be explored, and guidelines will be delineated for taking investor biases into account to create what the authors have termed the ***best practical allocation*** for a client. Thus equipped, practitioners may more easily and fruitfully apply the body of behavioral finance research.

Best Practical Allocation

Practitioners are often vexed by their clients' decision-making process when it comes to allocating their investment portfolio. Let's explore why this may happen. In designing a standard asset allocation program with a client, practitioners first administer a risk tolerance questionnaire, then discuss the client's financial goals and constraints, and then typically recommend the output of a mean-variance optimization. Although this process may work well for institutional investors, it often fails for individuals, who are susceptible to behavioral biases. In a common scenario, a client demands, in response to short-term market movements and to the detriment of the long-term investment plan, that his or her asset allocation be changed.

Nobel prize-winner Daniel Kahneman and co-author Mark Riepe, who have made significant contributions to behavioral finance, describe financial advising as "a prescriptive activity whose main objective should be to guide investors to make decisions that serve their best interest." Serving the best interest of the client may be the

recommendation of an asset allocation that suits the client's natural psychological preferences – and may not be one that maximizes expected return for a given level of risk. More simply, a client's *best practical allocation* may be a slightly under-performing long-term investment program that the client can comfortably adhere to. Conversely, another client's *best practical allocation* may be one that goes against his or her natural psychological tendencies, and the client may be well-served to accept more risk than he or she might otherwise be comfortable with - to maximize return for a given level of risk.

Guidelines for Determining Best Practical Allocation

The authors offer two propositions for guiding practitioners in identifying *the best practical allocation* for their clients while considering behavioral biases:
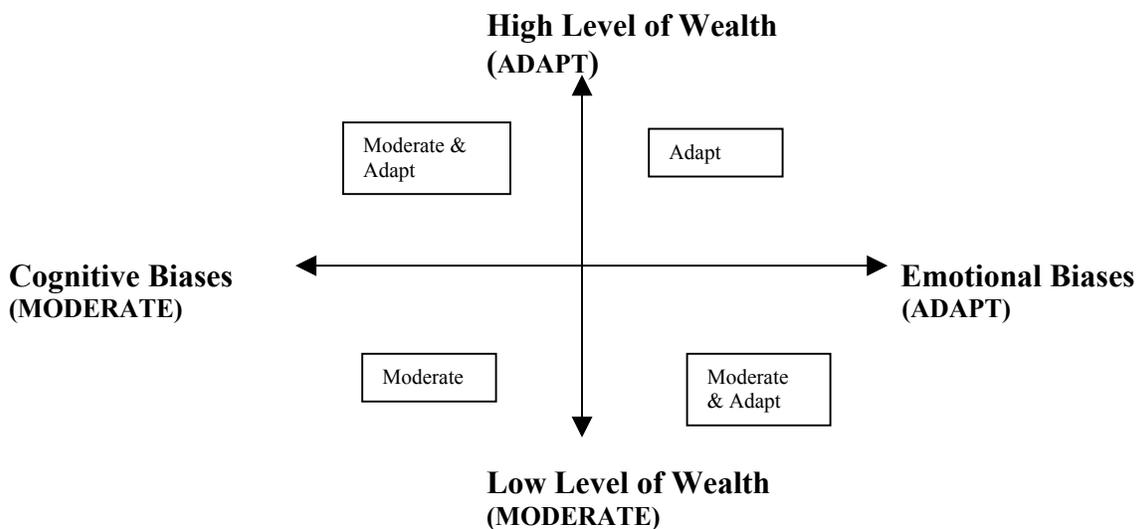
Proposition I: The decision whether to *moderate* or *adapt* to a client's behavioral biases during the asset allocation process depends fundamentally on the client's level of wealth. Specifically, the wealthier the client, the more the practitioner should *adapt* to the client's behavioral biases. The less wealthy, the more the practitioner should *moderate* a client's biases.

Rationale: A client's outliving his or her assets constitutes a far graver investment failure than a client's inability to amass the greatest possible fortune. In the former case, the client's standard of living may be jeopardized; in the latter, the client's standard of living will remain in the 99.9^{th} percentile. In other words, then, if bias is likely to endanger a client's standard of living, *moderating* is the best course of action. But if only a highly unlikely event such as a market crash for those clients with market-created wealth could jeopardize the client's standard of living, bias becomes a lesser consideration, and *adapting* may be the more appropriate action.

Proposition II: The decision whether to *moderate* or *adapt* to a client's behavioral biases during the asset allocation process depends fundamentally on the type of behavioral bias the client exhibits. Specifically, clients exhibiting cognitive biases should be *moderated*, while those exhibiting emotional biases should be *adapted* to.

Rationale: Behavioral biases fall into two broad categories, cognitive and emotional, though both types yield irrational decisions. Because cognitive biases stem from faulty reasoning, better information and advice can often correct them. Conversely, because emotional biases originate from impulsive feelings or intuition —rather than conscious reasoning—they are difficult to correct. Cognitive biases include heuristics, such as anchoring and adjustment, availability, and representativeness biases. Other cognitive biases include selective memory and overconfidence. Emotional biases include regret, self-control, loss aversion, hindsight, and denial. These biases will be described in more detail in the next section of the paper.

Propositions I and **II** can, for some clients, yield a blended recommendation. For instance, a less wealthy client with strong emotional biases should be both *adapted* to and *moderated*. Chart 1 illustrates this concept. Additionally, clients may exhibit the same biases, but should be advised differently. The cases of three hypothetical investors— Mrs. Smith, Mr. Jones, and the Adams family—will add clarity to these complexities, while illustrating how practitioners can apply these propositions to determine *best practical allocation*.

High Level of Wealth
(ADAPT)

| Moderate & Adapt | | Adapt |

Cognitive Biases   **Emotional Biases**
(MODERATE)   **(ADAPT)**

| Moderate | | Moderate & Adapt |

Low Level of Wealth
(MODERATE)

Chart 1 – Visual depiction of Propositions 1 and Proposition 2

Case Studies

CASE A: Mrs. Smith is a single, sixty-five year old with a modest lifestyle and no income beyond what her investment portfolio of $1,000,000 generates. Her primary investment goal is to not outlive her assets; she does not, under any circumstances, want to lose money because she recalls that her relatives lost money in the crash of 1929. Mrs. Smith exhibits these behavioral biases:

- **loss aversion** (the tendency to feel the pain of losses more than the pleasure of gain),
- **anchoring and adjustment** (the tendency to believe that current market levels are "right" by unevenly weighting recent experience), and
- **selective memory** (the tendency to recall only events consistent with one's understanding of the past).

CASE B: Mr. Jones is a single fifty year-old pharmaceutical executive earning $250,000 per year. He lives extravagantly, occasionally spending more than his income, but has saved approximately $1,500,000. His primary investment goal is to donate $3,000,000 to his alma mater, but cannot obtain life insurance. Mr. Jones exhibits the following biases:

- **loss aversion**
- **overconfidence** (the tendency to overestimate one's investment savvy), and
- **self-control** (the tendency to spend today rather than save for tomorrow).

CASE C: The Adams family includes a financially well-informed couple, both aged thirty-six, and two children aged four and six. They are financially sound, but

were not in the market during the bull market of the 1990's as many of their neighbors were. The couple's total income, $120,000, is, like the family itself, not expected to grow significantly. They have saved $150,000, which they hope will be the financial foundation from which they will send their children to college and retire comfortably. The Adams's suffer from:

- **loss aversion**

- **regret** (the tendency to feel deep disappointment for having made incorrect decisions), and

- **availability bias** (the tendency to believe that what is easily recalled is more likely)[*].

Further assume that it is 2001; capital markets are off their highs (for stocks) and lows (for bonds), but not yet at the extremes of the recent market cycle. After you, the practitioner, administer a risk tolerance questionnaire, the mean-variance optimizer yields the following allocations for each of the three investors:

a) **Mrs. Smith: 75% bonds, 15% stocks, 10% cash**

b) **Mr. Jones: 85% stocks, 10% bonds, 5% cash**

c) **The Adams family: 70% stocks, 25% bonds, 5% cash**

These case studies were designed to help practitioners answer three fundamental questions:

1) What effect do a client's biases have on the asset allocation decision?

2) Should you moderate or adapt to these biases?

3) What is the *best practical allocation* for each investor?

Solutions to Case Studies

---

[*] For purposes of this paper assume that Mr. and Mrs. Adams have a common set of behavioral biases.

CASE A: Mrs. Smith

1. Effect of Biases: Mrs. Smith's biases are very consistent and lead to a clear allocation preference. Because Mrs. Smith does not tolerate risk (loss aversion) and recalls that her relatives' lost money (selective memory), she would naturally prefer a safe and secure allocation. Additionally, since the market has dropped recently, she will likely make faulty conclusions about current market prices (anchoring and adjustment); she will be wary of any exposure to equities. Thus, if you as her advisor presented her with an allocation of 100% bonds, she would be likely to immediately agree with that recommendation. However, you need to consider her bias toward such an allocation.

2. Moderate or Adapt?: Given Mrs. Smith's level of wealth, if you *adapt* to her biases, and recommend an allocation to 100% bonds, your financial planning software tells you that Mrs. Smith runs the risk of outliving her assets, a clearly unacceptable outcome. Additionally, her biases are principally cognitive (**selective memory, anchoring and adjustment**), and these types of biases can be corrected with advice and information that will help her to understand that she would be at risk if she accepted a 100% bond portfolio. This being the case, the correct course of action is to *moderate* her bias preferences and recommend that she accept some risk in her portfolio. Your recommendation is to help her overcome her behavioral biases and advise her to "fit" the slightly more aggressive allocation the optimizer recommended.

3. Best Practical Allocation Decision: As we have decided to *moderate* Mrs. Smith's biases, the best practical allocation is the precise allocation that the mean-variance optimizer provided, **75% bonds, 15% stocks, 10% cash**. You recommend this allocation to Mrs. Smith, and administer a continuing program of investor education on the risk of outliving one's assets.

CASE 2: Mr. Jones

1. Effect of Biases: Mr. Jones's biases do not provide a clear indication of what allocation he would naturally prefer. On the one hand, Mr. Jones's overconfidence may lead him to be more comfortable with equities than is appropriate for him. On the other hand, because he does not tolerate losses (loss aversion) and has a high need for current income that supplements his "spend today" mentality (self-control), he sees the benefit of fixed income investments. In this case, biases favoring fixed income outweigh those favoring equities, but further analysis is required.

2. Moderate or Adapt?: When considering level of wealth, Mr. Jones clearly does not run a 'standard of living' risk. Additionally, his behavioral biases are principally emotional **(loss aversion, self-control)**. Given these two facts, and given that he naturally prefers an allocation favoring fixed income, you decide that indeed the appropriate recommendation is to *adapt* to his biases and create a less aggressive portfolio with which he will be able to adhere to and be comfortable with.

3. Best Practical Allocation Decision: The mean-variance optimizer's recommended allocation was 85% stocks, 10% bonds, 5% cash. Using guidelines presented in the final section of this paper entitled, "The Degree to Which Practitioners Should Moderate or Adapt to Biases in Determining Best Practical Allocation", your judgement is that an allocation of **75% stocks, 15% bonds, 10%** cash is appropriate. You also caution Mr. Jones that his alma mater may receive $2,500,000 versus his original goal of $3,000,000.
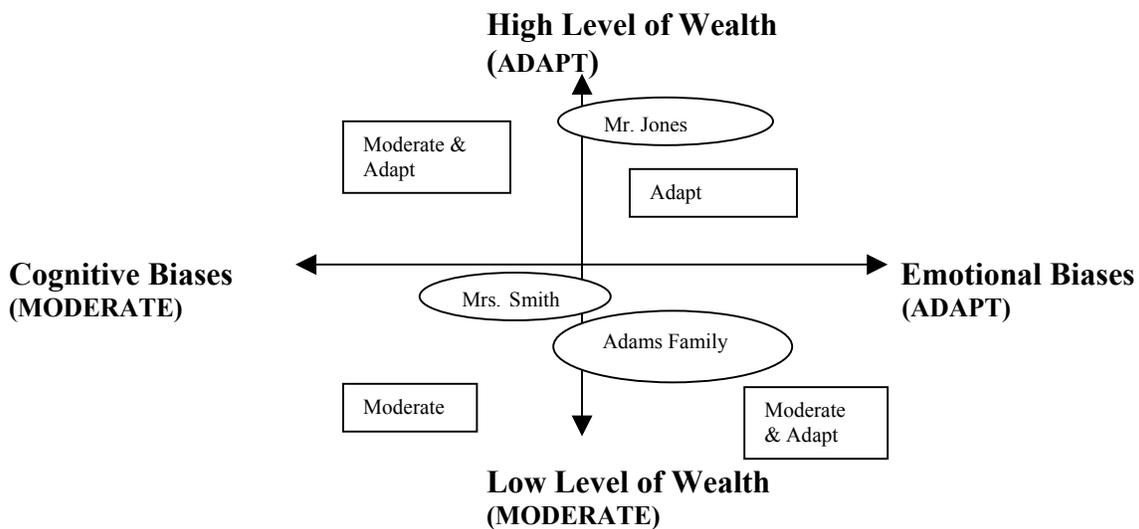
CASE C: The Adams Family

1. Effect of Biases: We are once again presented with biases that lead us in different directions. Because the Adams Family's portfolio has not kept pace with their neighbors', the Adams's regret having made incorrect decisions in the past which may

prompt them to take on more equity risk than may be appropriate. However, because they do not tolerate risk (loss aversion) and have shrunk at the latest information about the skidding equity market (availability), they are more comfortable with less exposure to equities. Again in this case, biases favoring fixed income appear to outweigh those favoring equities – we need to thoughtfully consider the situation further.

2. Moderate or Adapt?: The Adams's biases are mainly emotional **(loss aversion, regret)**. Thus, your instinct is to adapt to a lower allocation to equities of 50% because you believe that the Adams' are likely to be comfortable with and be able to adhere to such an allocation. However, given their level of wealth, your financial planning software suggests that a lower equity allocation would not provide a secure retirement given their college expenses; that is, their standard of living is at stake. You decide to compromise, and your recommendation is to *moderate* <u>and</u> *adapt*, striking a balance between their investment goals and biases.

3. Best Practical Allocation Decision: The mean-variance optimizer's recommended allocation was 70% stocks, 25% bonds, 5% cash. You had contemplated dropping the equity allocation to 50% based on their biases, but realized that such an allocation would present a 'standard of living' risk. Thus you brought the equity allocation up to 60%, which results in a compromise of **60% stocks, 35% bonds, 5%** cash allocation. You recommend this allocation to the Adams's.

These case studies have demonstrated the process by which we can arrive at the *best practical allocation* while considering behavioral biases. Chart 2 supplements Chart 1 by providing a visual description of these three cases.

High Level of Wealth
(ADAPT)

Moderate &
Adapt

Mr. Jones

Adapt

Cognitive Biases
(MODERATE)

Mrs. Smith

Adams Family

Emotional Biases
(ADAPT)

Moderate

Moderate
& Adapt

Low Level of Wealth
(MODERATE)

Chart 2 - Illustration of outcomes of individual investor case studies.

The Degree to Which Practitioners Should Moderate or Adapt to Biases in Determining Best Practical Allocation

The decision to override the mean-variance optimizer will cause a deviation from the "rational" portfolio. The authors offer a method of calculating acceptable discretionary "distances" from the mean-variance output. It is recommended that allocations not stray more than 20% from the mean-variance optimizer without extensive client consultation. The justification for the 20% range is that most investment policy statements permit discretionary asset class ranges of +/- 10% in either direction. For example, if a "sample" balanced portfolio is defined as 60% equities/40% fixed income, practitioners normally have the discretion to have equities range from 50% to 70%, and fixed income might range from 30% to 50%.

Method for Determining Appropriate Deviations from the Rational Portfolio

1. Subtract each bias-adjusted allocation from the mean-variance output.

2. Divide each mean-variance output by the difference. Take the absolute value.

3. Weight each percentage change by the mean-variance output base. Sum to determine

    bias adjustment factor.

The following are the calculations that justified the best practical allocations for Mr.

Jones and the Adams Family. Mrs. Smith's bias adjusted allocation did not differ from

the mean-variance output; her bias adjustment factor is 0%.

	Mean Variance Output	Bias Adjusted Allocation	Difference	Change in Absolute Value Percent	Change in Weighted Average Percent
Fixed Income	10	15	-5	50%	5%
Equities	85	75	10	12%	10%
Cash	5	10	-5	100%	5%
	100	100	Bias Adjustment Factor=		20%

Table 1 – Distance from Mean-Variance Output for Mr. Jones

	Mean Variance Output	Bias Adjusted Allocation	Difference	Change in Absolute Value Percent	Change in Weighted Average Percent
Fixed Income	25	35	-10	40%	10%
Equities	70	60	10	14%	10%
Cash	5	5	0	0%	0%
	100	100	Bias Adjustment Factor=		20%

Table 2 – Distance from Mean-Variance Output for The Adams Family

Conclusion

The propositions and cases presented here provide guidelines for practitioners to

incorporate behavioral finance into asset allocation design to create what the authors have

termed the *best practical allocation* for a client. The authors undoubtedly believe that the

future of advising private clients will include behavioral finance research, and the result

will be that practitioners will better serve the client's best interest.

References

Darst, D. 2003. The Art of Asset Allocation. New York: *McGraw-Hill.*

Kahneman, D. and Riepe, M. 1998. "Aspects of Investor Psychology." *Journal of Portfolio Management*, (Summer): 52-64.

Montier, J. 2002. Behavioural Finance: Insights into Irrational Minds and Markets. West Sussex, England: *John Wiley & Sons Ltd.*

Pompian, M. and J. Longo, 2004. "A New Paradigm for Practical Application of Behavioral Finance: Creating Investment Programs Based on Personality Type and Gender to Produce Better Investment Outcomes", New York: *Institutional Investor's Journal of Wealth Management (Fall 2004) 9-15.*

Shefrin, H. 2000. Beyond Greed and Fear: Understanding Behavioral Finance and the Psychology of Investing. Boston, MA: *Harvard Business School Press.*

CONTINUING EDUCATION QUESTIONS

1. During the asset allocation process, practitioners should *moderate* their client's behavioral biases at high wealth levels. T or F? Answer: False, Practitioners should **adapt** to client's behavioral biases at high wealth levels.

2. During the asset allocation process, practitioners should *adapt* to emotional biases. T or F? Answer: True

3. A client's *best practical allocation* may not be the one that maximizes return for a given level of risk. T or F? Answer: True

4. Anchoring and Adjustment bias is the tendency to believe that current market prices are "right" by unevenly weighting recent experiences. T or F? Answer: True.

5. Availability bias is the tendency to use readily available information rather than seeking out information that is more difficult to find. T or F? Answer: False. Availability bias is the tendency to believe that what is easily recalled is more likely to be true.

LIST OF HELPFUL WEB SITES

Investor Personality Type Assessment – www.investorpsych.com

Journal of Psychology and Markets – www.psychologyandmarkets.com

Journal of Wealth Management – http://www.iijournals.com/JPPM/default.asp

Meir Statman – www.lsb.scu.edu

Richard Thaler – www.gsb.uchicago.edu

Robert Schiller – www.econ.yale.edu

Daniel Kahneman – www.princeton.edu