THE FUNDAMENTALS OF BEHAVIORAL FINANCE AND FINANCIAL PLANNING
What Is Behavioral Finance and How Can It Help Investors?

Behavioral finance is a relatively new discipline that seeks to understand why investor and market behavior differ from expected outcomes. Traditionally, expected outcomes or predictions have been based on classical or standard finance theory, comprising Efficient Markets Hypothesis (EMH), Capital Asset Pricing Model (CAPM) and Modern Portfolio Theory (MPT). These theories assume that people act in a rational, maximizing way and base their conclusions on that assumption. In the 1980s, economists began questioning why real-world behaviors and outcomes did not align with the predictions derived from classical economic theories. The anomalies or differences could not be explained by conventional economic theory, so economists began to turn to behavioral and cognitive psychology for answers and behavioral finance was born.

Behavioral finance is not a refutation of standard finance but a way for investors and advisors to operate within a realistic framework — one that takes the effect of human emotions on investment decisions into account — and improve saving and investing behavior. The behavioralist approach has become so popular that it has branched into behavioral investing, behavioral financial planning (goals-based planning) and behavioral social policy, among others.
Goals-based planning is an expression of behavioral finance and uses its principles and research to improve the saving habits of investors. It uses mental accounting to separate assets into different categories: current spending, current wealth and future wealth. The categories are further earmarked by creating sub-portfolios, assigning tangible goals to each and determining the appropriate risk capacity and time horizon. By naming a goal and allocating money to it, a person is more inclined to regard that money as untouchable.

Goals-based planning also frames savings and risk in terms of the amount needed to reach a goal and the probability of not reaching that goal, respectively. By focusing on a goal rather than performance numbers, it removes the human urge to compete and chase returns. A person’s goals are not comparable to another’s, unlike a rate of return or absolute portfolio performance.

Goals-based planning also provides a more intuitive way to talk about saving and investing with clients. Though effective, MPT is not intuitive to the layperson. Investors have a hard time envisioning their level of risk in terms of units of standard deviation, whereas it is easy for them to define it by the probability of not attaining a goal (i.e., threshold).
The History of Behavioral Finance

The deans of behavioral finance, Daniel Kahneman, Amos Tversky and Richard Thaler, were the first to bring together the fields of psychology and economics. Though studies of the limits of human cognition concerning economics came before these three men, they were instrumental in codifying the discipline and formalizing it as a worthwhile academic and real-world pursuit.

Daniel Kahneman and Amos Tversky, two Israeli psychologists who studied judgment and decision-making, began collaborating in 1969. In 1974, they first described three particular heuristics humans use to make decisions under uncertainty: representativeness, availability, and anchoring and adjustment. Their work built on that of economist, social scientist and psychologist, Herbert A. Simon, who coined the term “bounded rationality” as an alternative to mathematical modeling to explain how humans make decisions with limited cognitive power and time, differentiating between real-world decision-making and that of rational optimizers in economic models. He concluded that humans use shortcuts or heuristics when they make decisions — more commonly known as “rules of thumb.” These heuristics often result in biases, which contribute to irrational decision-making and can lead to market inefficiencies.

Economist Richard Thaler saw a correlation between Kahneman and Tversky's ideas and his own work in economics. He had noticed anomalies in market behavior that couldn't be explained by existing economic theory — EMH, CAPM and MPT. People are not always rational like homo economicus (the name given to the “people” in financial models). The work of these three men combined psychology and economics, creating the field of behavioral finance.

Efficient Markets Hypothesis (EMH) states that the markets are wholly rational and at any given moment in time the price of any and all assets and securities being traded is correct and reflects all available information.

Capital Asset Pricing Model (CAPM) helps calculate investment risk as defined by the volatility of individual securities and what return on investment (ROI) investors should expect. These are calculated by comparing stock movements with the movement of the market as a whole.

Modern Portfolio Theory (MPT) was developed by Harry Markowitz in the 1950s and has been the standard for portfolio construction and optimization ever since. In MPT, risk is defined in terms of mean variance — how far a portfolio's performance deviates from a benchmark — and investors decide what their risk tolerance is and apply that to their entire portfolio.
Anomalies

If it weren’t for anomalies, there wouldn’t be a study of behavioral finance. It was the variances from standard finance assumptions that led economists and psychologists to question the status quo. “The End of Behavioral Finance,” a 1999 article Thaler wrote for the CFA Institute, highlights five reasons why behavioral finance shouldn’t be dismissed. Though not a complete list of anomalies, these five provide a fundamental understanding of how real-world behavior does not always match theoretical expectations.

**Volume** — The average daily volume of shares traded on the New York Stock Exchange is 3.6 billion. In an efficient market, volume would be minimal because rational investors (who only trade based on news) would wonder why other rational investors want to buy or sell their stock: “Do they know something I don’t?”

**Volatility** — First brought to attention by Robert Shiller in 1981, the degree of stock market volatility that exists cannot be explained or predicted by EMH.

**Dividends** — Under U.S. tax law, dividends are taxed at a higher rate than capital gains, so shareholders benefit more from stock repurchases. Why then, do stock prices increase after dividends are initiated or increased? Why do dividends even exist? In a rational market, companies would repurchase shares and investors would shun dividend-producing stocks for tax purposes.

**Equity Premium** — Investors expect a higher return on stocks compared with bonds because there is an increased level of risk in holding equities in a portfolio. Historically, the risk premium has been much larger (7%) than expected or warranted. According to standard finance, expected returns are defined by risk and risk alone; this real-world occurrence does not fit within that framework.

**Predictability** — EMH says that no asset price movement should be predictable based on past experience because movements occur solely in reaction to news. In actuality, there are known triggers of price movements and investors trade on those every day.

So how does an economist explain these anomalies? This gap is where behavioral finance complements standard finance.

**Heuristics and Cognitive Biases**

Heuristics and cognitive biases affect investors and, therefore, market behavior. Since Kahneman and Tversky first studied these decision-making tools in the 1970s, the list of heuristics and biases has grown alongside behavioral finance. The following examples, though not comprehensive, serve to illustrate how the human factor disrupts the elegance of the EMH.
Representativeness Heuristic/Bias — This occurs when a judgment is made based on the similarity of two objects, not on the probability of something occurring. For example, it would be faulty to assume that stock A will be worth $500/share one day (though it is only worth $.01 today) because it was issued by a computer company with similarities to Apple. Focusing on the similarity to a wildly successful company is ignoring that the probability of another computer company replicating Apple’s success is low.

Availability Heuristic/Bias — If someone hears something a bunch of times they are more likely to believe the likelihood of it occurring. Whether this is a rumor about a company or the rule of thumb about not raiding retirement accounts for cash, this heuristic can positively and negatively affect decision-making.

Anchoring and Adjustment Heuristic/Bias — In a numerical prediction, fixating on a set number or target, regardless of new information, and then adjusting from that target is referred to as anchoring and adjusting. The target “anchors” the investor and hinders accurate adjustment to reflect the intrinsic value of an asset. For example, when an investor fixates on the purchase price of a stock and refuses to sell when it drops below that price because they irrationally believe the purchase price represents the intrinsic value.

Mental Accounting — Like the availability bias, this can have either a positive or negative effect on decision-making. It entails an investor mentally subdividing their assets into different accounts with different characteristics, restrictions and liquidity. Mental accounting is integral to what makes goals-based planning different from traditional financial planning.

Default Heuristic — Research has shown that making contributions to savings accounts the default option in defined contribution (DC) retirement plans can improve real-world outcomes. When contributions and eventual savings rate escalations were the default option in a company’s DC plan, 78% of participants accepted the assigned contribution rate and future escalations, and the savings rate increased from 3.5% to 13.6% in four years (Benartzi and Thaler 2013).

Loss Aversion/Prospect Theory — People feel losses more acutely than gains and they will make irrational decisions to avoid the prospect of loss — loss aversion (Kahneman and Tversky 1979). For example, if an investor holds two stocks, A and B, and stock A rises above its purchase price while stock B goes into freefall, the rational decision would be to sell the loser stock (B), claim the tax advantages that accrue, and hold the winner stock (A). In an efficient market, one would not hold a stock that is losing money. But, in real life, investors will hold onto the losing stock and sell the winning stock to avoid realizing the loss, falling prey to the loss aversion bias (as well as the disposition effect).
Applications for Financial Planning

Behavioral finance discoveries have real-world applications for financial planning and investing. Applying the insights from behavioral finance can help increase savings rates by recognizing a client’s cognitive biases and using techniques to neutralize them. Essentially, it helps explain why people do not act rationally when it comes to making decisions about how to use their resources. For example, goals-based planning is a practical method of using mental accounting to overcome the tendency of people to procrastinate when it comes to savings and counteract the lack of self-control and tendency to procrastinate that prevents people from saving, as they value spending more in the present than in the future (i.e., present biased and/or hyperbolic discounting).

Behavioral finance can also help during times of market turmoil. Advisors can remind their clients that their financial plan was developed to weather all market conditions, explaining the causes of the current upheaval, assuaging their concerns and reinforcing the need to let the plan work. After all, the likelihood of making poor decisions when under duress is exactly why they created the plan in the first place. When advisors can explain market turbulence and the portfolio mechanisms that were put in place to protect assets in this exact situation, they build credibility, assuage client fears, and keep them from making rash, emotional decisions.

Behavioral finance and its use of mental accounting can also prevent investors from over- or under-reaching when it comes to risk. By assigning a specific time horizon and risk capacity to different sub-portfolios, investors can take on the appropriate amount of risk for each goal. In MPT, risk is assessed for the overall portfolio, and what may be appropriate to attain a performance target may not be an optimal level of risk for certain goals.

By using the concepts of behavioral finance to analyze and discuss client heuristics and biases and the reasons behind them, advisors and investment managers can work to subvert them and help clients navigate the irrational movements of the market and market actors.

Understanding behavioral finance and incorporating it into everyday planning will help investors recognize their biases and devise strategies to overcome them and improve decision-making. HilltopSecurities embraces the teachings of behavioral finance and our goals-based planning process, the Certainty Circle of Life, was designed to help our clients define success for themselves and reach it. We offer straightforward advice and a goals-based planning investment platform, MoneyGuide Pro, to work with our clients and find the right path forward.
Glossary of Behavioral Finance Terms

1/n Strategy/Diversification Heuristic — When investors are told they have to simultaneously allocate their money to various investment options (e.g., funds), they tend to choose evenly across all options without proper weighting. For inexperienced (i.e., naïve) investors, this could result in sub-optimal asset allocations.

Anchoring and Adjustment Bias — Anchoring is the act of fixating on a particular number that, in actuality, doesn’t have any significance. By using this number as a reference point, any adjustments to it are potentially going to be sub-optimal and irrational.

Arbitrage — The simultaneous purchase and sale of an asset to profit from a difference in price. According to EMH, arbitrage is the mechanism by which smart money (i.e., professional investors) will correct market inefficiencies. In reality, there are limits to arbitrage and smart money can’t always neutralize irrational behaviors.

Availability Heuristic — The tendency to give credence to something because it easily comes to mind — it is available.

Behavioral Portfolio Theory (BPT) — Hersh Shefrin and Meir Statman developed a portfolio where investors chose portfolios based on “expected wealth, desire for security and potential, aspiration levels, and probabilities of achieving aspiration levels.” BPT was developed as an alternative to MPT.

Beta — Measurement of a stock’s relative volatility (i.e., how much the price of a particular stock moves up and down) compared with how much the stock market overall or an index fluctuates.

Bounded Rationality — The human brain cannot process all the information it receives so it uses heuristics or “rules of thumb” to make decisions.

Bubble — A bubble occurs when prices in the capital markets become unsustainably overinflated — the stock is more valuable than the company it represents (i.e., issuer). This is typically the result of investors making decisions based on word-of-mouth instead of actual information. When it bursts, the shockwaves can be catastrophic to the markets (e.g., dotcom 2000, housing 2007–2009).

Capital Asset Pricing Model (CAPM) — A foundational mathematical model in classical/standard finance theory; it helps calculate investment risk, defining it by the volatility of individual securities and the ROI investors should expect. These are calculated by comparing individual stock movements (unsystematic) with the movement of the market as a whole (systematic). The concept of beta comes from CAPM.

Cognitive Bias — The tendency to acquire and process information by filtering it through one’s own likes, dislikes and experiences, leading to faulty decision-making and errors in judgment.

Descriptive — Theories that model how people actually choose in comparison with normative behaviors, often stressing systemic departures from the rational choice.
Disposition Effect — The tendency of investors to sell a stock that is increasing in value too soon and hold onto one that is decreasing in value too long. They are quick to realize gains and reluctant to realize losses.

Efficient Frontier — The set of optimal portfolios that offers the highest expected return for a defined level of risk or the lowest risk for a given level of expected return. Portfolios that lie below the efficient frontier are sub-optimal, because they do not provide enough return for the level of risk. It is closely associated with MVT/MPT.

Efficient Markets Hypothesis (EMH) — The foundation for classical/standard finance theory states that at any given moment in time the price of any and all assets and securities being traded is correct and reflects all available information.

Heuristics — Mental shortcuts used to make decisions when people are uncertain, more commonly called “rules of thumb.”

Homoeconomicus/Econ — The purely rational actors who theoretically represent human investors in classical finance models.

Hyperbolic Discounting — Hyperbolic agents procrastinate because they (wrongly) think that whatever they will be doing in the future will not be as important as what they are doing now (results in undersaving for retirement).

Indexing — A form of passive investing, investors can achieve the same risk and return as an index by investing in an index fund. Stock market indices (e.g., S&P 500, DJIA) measure the value of groups of stocks and are used to track market movements over long periods of time. They are also indicative of market health.

January Effect — The stocks of some companies have unusually high returns in January; this behavior cannot be explained by CAPM and EMH. It is an example of an anomaly.

Law of One Price — This law states that there is only ever one price for an asset at any moment in time.

Life-Cycle Theory of Saving — Households are assumed to want to smooth consumptions over the life cycle and are expected to solve the relevant optimization problem in each period before deciding how much to consume and how much to save.

Loss Aversion — An important concept in behavioral finance that illustrates how loss is felt more acutely than an equivalent gain (explaining the disposition effect). It is closely associated with Prospect Theory.

Mean-Variance Portfolio Theory (MVT)/Modern Portfolio Theory (MPT) — Standard finance theory introduced by Harry Markowitz in 1952; it posits that risk-averse investors can construct portfolios to optimize or maximize expected return based on a given level of market risk, emphasizing that risk is an inherent part of higher reward. Risk is defined in units of standard deviation from a benchmark.

Mental Accounting — The act of mentally separating money into individual accounts, each assigned to a different category (e.g., bills, retirement, travel), ignoring the fact that money is fungible. This framing is fundamental to goals-based financial planning.
Mental Accounting (MA) Framework — In 2010, Harry Markowitz and colleagues responded to BPT with this framework in which they stated that it was possible to mathematically map the MA sub-portfolios to the efficient frontier.

Naïve Agent — One who fails to realize at least the extent of their optimization problem and doesn’t counteract their hyperbolic preferences.

Normative — Theories that characterize rational choice and are often derived by solving some kind of optimization problem.

Optimization Problem — Making sub-optimal use of one’s resources is an optimization problem in economics. Choosing to spend now instead of saving for later foregoes the benefits of earning interest, ROI and/or capital gains; it is a preference for a smaller reward now in lieu of a larger reward later (i.e., present biased or hyperbolic discounting).

Overconfidence Bias — Overconfidence can be detrimental to investment managers over the long run. Statistically overconfident investors make more trades and have an overall lower yield.

Overweighting/Confirmation Bias — Investors and people in general tend to give more importance to information that supports beliefs they already have. For example, an investor might overweight information (e.g., data, evidence) that supports their investment thesis without assessing it critically.

Prescriptive — Theories that are attempts to offer advice on how people can improve their decision-making and get closer to the rational choice.

Prospect Theory — Idea presented by Daniel Kahneman and Amos Tversky in 1979 that corrected the misconception that people evaluate potential gains and losses equally when making a decision. In fact, people value gains and losses differently and, if given two choices, one framed in terms of gains and the other in terms of losses, they will choose the former. Mathematically, there is an approximate 2:0 ratio, with losses affecting investors twice as much emotionally as an equivalent gain — this is loss aversion.

Rational — In economics, a rational actor or investor makes all decisions based on all available news at that point in time. Decision-making is not affected by cognitive biases or emotions.

Representativeness Bias/Heuristic — The tendency to make decisions based on past events or traits that are representative or similar to a current situation.

Short Selling — Shorting a stock is when an investor sells securities borrowed from a third party with the intention of buying them back later at a cheaper price to return them to the original lender. Though the potential for gain is great — the difference between the value of the securities when they were bought and when they were sold is pure profit — so is the potential for loss should the stock not fall. One shorts a stock when they believe a company (or industry in the case of the housing market in 2007) is overvalued and on the brink of a crash.
Smart Money — Professional investors who, according to the EMH, will correct any market inefficiencies caused by uninformed, casual or novice investors. Theoretically, should a stock become overinflated because uninformed or casual investors are acting irrationally, smart money will short the stock, bringing the price down and correcting the market (i.e., complete arbitrage).

Sophisticated Agent — One who realizes that they have hyperbolic preferences and takes steps to deal with the problem.

Status Quo Bias/Inertia — The tendency to resist change and therefore not investigate new investment opportunities, returning to the same choices over and over again.

Bibliography


Websites

www.investopedia.com
www.wikipedia.com
www.referenceforbusiness.com
www.hbr.org
www.wsj.com
www.nytimes.com
www.investmentnews.com
Disclosure Statements:
Hilltop Securities Inc. (HTS) is a registered broker-dealer and registered investment adviser that does not provide tax or legal advice. Material presented herein is for informational use only. This information may not be duplicated or redistributed without prior consent of HTS, and distribution or publication of this material does not represent a solicitation to complete a financial transaction with the firm. Though information was prepared from sources believed reliable, HTS, does not guarantee its accuracy or completeness. Securities offered by HTS (1) are not insured by the FDIC (Federal Deposit Insurance Corporation) or by any other federal government agency; (2) are not bank deposits; (3) are not guaranteed by any bank or bank affiliate; and (4) may lose value. HTS is a wholly owned subsidiary of Hilltop Holdings Inc. (NYSE: HTH) located at 1201 Elm Street, Suite 3500, Dallas, Texas 75270, 214.859.1800. Past performance is no guarantee of future results. Direct access or “links” to other websites provided herein contain information that was created, published, maintained or otherwise posted by institutions or organizations independent of HTS. HTS does not endorse, approve, certify or control these websites and does not assume responsibility for the accuracy, completeness or timeliness of the information located therein. Visitors to these sites should not use or rely on the information contained therein until after consulting with an independent finance professional. HTS does not necessarily endorse or recommend any commercial product or service described on these independent sites.

©2017 HilltopSecurities Inc. | All rights reserved | MEMBER: NYSE/FINRA/SIPC | RET0917135

HilltopSecurities.com
800.678.3792

HilltopSecurities
1201 Elm Street, Suite 3500
Dallas, Texas 75270