



CLS Advisor IQ Series

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UNDERSTANDING INVESTORS:

An Overview of the Research



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Project Overview

Globally, money and personal finances are one of the largest sources of stress for people. Despite the criticality of personal finances for our lives and futures, research shows a pervasive financial illiteracy at even a basic level of knowledge for most people. The knowledge gap in personal finances is not the only (nor the most predictive) factor influencing people's financial story—nor are intelligence, statistical abilities, or wealth. Indeed, even if in an ideal world we were to pass a national initiative to increase financial knowledge through targeted education, the reality is that individual decisions about money and personal finances are often emotional and reactive, rather than rational or strategic.

What if we were to take the broader notion of personal finances out of the equation, and focus specifically on investments and investoradvisor relationships? Surely, people who are of the mindset to seek out a financial advisor are more rational in financial decisions than the broader population. At a minimum, we may hypothesize that these individuals are rational enough to delegate the strategic decision making to their advisor rather than themselves. This line of thought, though grounded in logic, ignores the broader issue that human beings are not inherently rational, particularly when making personal decisions. There is actually a systematic irrationality to people that has been repeatedly shown to be more predictive in decision-making outcomes than the mathematical odds underlying that decision.

Human beings' emotional connection to personal finances leads to errors in cognition that are related to individual differences in motivation and personality, and ultimately results in less reliable decision-making strategies. The core issue underlying this discussion is that investors have their own thoughts about any investment decision that are influenced by a range of individual characteristics that cannot be captured through rational probabilities and odds regarding decision outcomes. Financial advisors have the unique responsibility to guide people into making better financial decisions. They can accomplish this through a deeper understanding of their client whereby building trust in the investment relationship.

Here, we provide a high-level overview of a robust body of research from the disciplines of psychology, behavioral economics, and cognition. Though the research is broad, it currently lacks a level of connectivity that is needed to quantify characteristics of individual investors. We begin with an overview of the key findings across disciplines that reflect the current state of our understanding of individual investors, and then discuss the gaps that can be connected through better measurement.

Theoretical Foundation

Traditional approaches to decision making assume rationality. The field of economics was founded on models such as Utility Theory and Rational Choice Theory that consider human beings to be rational thinkers who make decisions strategically and logically after evaluating all information. These theories posit that making decisions that maximize utility leads to the highest satisfaction with individual choices—a conclusion that highlights the bias in early work towards human rationality.

The field of behavioral economics was the next major trend in understanding decision making through the lens of human error. This approach stems from Prospect Theory, which considers how people make decisions in a state of uncertainty. Prospect Theory departs from the outcome-driven theories of traditional approaches, and considers that human beings actually make decisions by considering the probabilities of gains and losses associated with competing alternatives, rather than solely considering the end-state. Behavioral economists were among the first to consider human irrationality in decision making. For instance, research showed that in scenarios where people could choose certain loss of a small amount or potential loss of a great amount, many people consistently chose the option that was likely to result in much greater loss because it had the benefit of uncertainty. The same model framed as gains led to the opposite result. Ultimately, this led behavioral economists to conclude that the results of these experiments suggest that utility in decision outcomes is a perception held by individuals, rather than an objective state.

As this research evolved, the understanding that probabilities and utility alone do not account for differences in how people make the same decisions became apparent. Three different investors with the same portfolios, information, and risk often do not make the same choice, meaning that probability, odds, and systematic irrationality are not the sole factors that explain financial decisionmaking. Accordingly, behavioral economics—or more specifically, behavioral finance—progressed to consider the cognitive and psychological mechanisms at play that influence financial and investment decision-making. These disciplines provide the benefit of exploring the human element counterpart to systematic irrationality that disrupt the utility of mathematical models designed to predict the best alternative objectively, and consider the subjective factors that investors bring to financial decisions.

The literature on this topic can be summarized into three main areas: cognition (i.e., biases, heuristics), biodata (i.e., experiences, demographics), and individual factors (i.e., personality, motivation). In the following sections, we provide a high-level overview of the most prevalent research from these areas, and then discuss the implications of integrating this information.



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Cognition

Cognitive biases refer to the systematic component to irrationality discussed previously. All people have the potential for these biases depending on their characteristics, the situation framing, and environmental factors. Before discussing the role these biases have in understanding investors, we would like to clarify what is meant by cognitive biases since there is some inconsistency in the literature. When economics and psychology merged, the verbiage was somewhat miscommunicated in the application of one field to the other. In the same way that psychologists are not experts in finance or economics, economists are not experts in the study of human thoughts and behavior. Accordingly, what psychologists refer to as cognitive factors influencing financial decision-making are commonly referred to as “behavioral” biases in the field of behavioral finance.

This focus on behavior led to some criticism of behavioral economics in early work because the field focused solely on the observable without explanation of what was driving those behaviors. The behavioral piece is what is observable, whereas cognition refers to the processes that underlie those behaviors. These cognitive mechanisms are subject to biases that can be measured through their manifestation in systematic and observable behaviors, and that is the point where the two fields ultimately meet. Now, the two disciplines have merged and discuss the drivers behind these observable errors that decision makers are subject to. For the sake of precision, we refer to these as cognitive biases, because the cognition piece is what can be connected to those individual differences that are critical regarding investors.

Many observable outcomes resulting from biases are actually the result of a reliance on heuristics, which are essentially cognitive strategies that facilitate decision making by disregarding some information or cues in order to allow the individual to make a judgment. In a perfect world, we would evaluate all information and evaluate it in order to make decisions. But the reality is that human beings do not have the cognitive and memory capacities to retain the vast amount of information available in most scenarios, let alone the resources available to make decisions in that manner.

The problem is not the quantity of information people consider, it is that people are inherently poor at evaluating what information is relevant, particularly in domains where they may have less expertise (such as financial investments). In fact, there is research showing that investors consistently make better decisions and are subject to less bias when advisors present them with information that has been aggregated. In other words, when advisors sort through the relevant information and present it in a shorter form that is easier to process, investors are more likely to make good investment decisions than when the same information is presented in a disaggregated form.

Information use and misuse through reliance on heuristics is the crux of many of biases that influence decision-making. Biases themselves are fairly systematic, and they can account for a lot of the variance in financial decisions and investment success. In a scan of the literature, nearly all of the most critical biases relate to how information is sought, evaluated, used, or discarded. The flaw in the current literature on biases is that the research mostly shows what the outcomes are as a result of reliance on a faulty heuristic. We know that systematically, people who evaluate information improperly will almost always make the wrong decision. The consistency of this finding is in the outcome of the decision, rather than in the proneness towards that bias.

One goal of our research is to identify those individuals that are more susceptible to certain biases or heuristics, because of measurable individual differences about those people.

To initiate this process, we describe some of the most prominent and predictive biases found in the literature here (though many more exist that are less differentiating psychologically).

INFORMATIONAL BIASES

Stemming from the discussion of decisions heuristics, informational biases are among the most common factors leading to decision failures. For instance, confirmation bias is a heuristic in which information confirming a previously-held belief or a prior decision is evaluated as more reliable or valuable, and disconfirming information is disregarded as unstable or irrelevant. In financial situations, confirmation bias tends to lead investors to hold an investment longer because they will continue to weigh information favoring that investment as more valuable. Research shows that investors who are least prone to confirmation bias tend to be more successful than their counterparts. Another common informational bias is the tendency to rely on information that is easily available, which may lead to patterns of similar investment decisions due to familiarity and ease. Investors also tend to prefer information that seems broadly known or accepted, over other information (such as guidance from an advisor).

REFERENTIAL BIASES

Many heuristics result in faulty decisions because they lead people to choose a point of reference that is not necessarily representative of the scope of the market. One of the most prominent of these is the disposition effect, which refers to the tendency to sell assets that have appreciated in value, and retain assets that are underperforming. Statistically speaking, we could relate this bias to regression towards the mean. However, that represents the faulty heuristic underlying the disposition effect. People assume the average performance of an asset is the price they bought the asset at, and they use that point as their reference, a heuristic known as anchoring. People assume that in a state of loss, the asset will inevitably return to the original cost. Similarly, they assume a gain indicates an asset that will inevitably plummet, because they believe the price they paid is the neutral point for that asset. People referencing their own experience as representative of the market as a whole will often make poor decisions about their investments. The representativeness heuristic causes people to focus on similar characteristics of two things and assume that they are alike in other ways. Psychologically speaking, this is actually similar to the heuristic that causes stereotyping. Investors might, for instance, consider stock in a good company as an indicator of a good investment. However, the characteristics of a good company are not necessarily the same as those of a good investment. People also succumb to this heuristic when evaluating past performance of an investment as the reference point. A recent history of lower performance leads investors to conclude that poor performance is representative of that investment in the future. Often this will perpetuate the cycle of other heuristics, such as confirmation bias or anchoring. Research also shows that individuals employing the representativeness heuristic will be more likely to buy a stock if it has recently shown gains, because they believe that the trend will continue.

PREDICTIVE BIASES

Predictive biases refer to heuristics that influence someone's perception of expected outcomes, such as overconfidence. Though overconfidence is typically measured as an individual difference in the psychology literature, the behavioral finance literature describes it as a cognitive bias that is common to many people. In the heuristic sense, overconfidence refers to the tendency for people to overestimate the likely occurrence of an event because they have faulty perceptions about their own knowledge. Often, this bias occurs as people review information. As mentioned previously, most heuristics involve the process of editing or disregarding some information when making decisions. With overconfidence, people typically make the mistake of relying too heavily on the information they consider as representative of all information. This leads them to overestimate their ability to predict an outcome. In practice, research shows that the overconfidence bias tends to lead to a statistically higher number of trades with an absence of equivalent returns. The less knowledge someone has in a domain, the more prone to overconfidence that individual is. Related to overconfidence is a predictive bias towards certainty and against risk. People are highly influenced by recent performance, and their regret or satisfaction related to that performance often causes them to make poor predictions in subsequent decisions.

Informational Biases

This bias tends to lead investors to hold an investment longer because they will continue to weigh information favoring that investment as more valuable.

Referential Biases

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Predictive Biases

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BioData

Behavioral finance has become the forefront in investment research because it has illustrated the systematic biases that account for a portion of the irrational behavior in rational decision tasks. The discipline's primary investigations into addressing the remaining gap in behavior not accounted for by systematic bias has been to focus on the surface-level diversity of investors. As opposed to deep-level diversity, which considers core, intangible characteristics of individuals, surface-level diversity are those categorical differentiators that are easily measured and assessed for differences in performance, such as gender, race, wealth, or education. These factors are not without merit in understanding investors, because they are tangible and related to our outward identities. In addition, these characteristics are easily measurable with a high degree of accuracy and minimal effort. For instance, one advantage of biodata from the psychology perspective is that it is extremely difficult for people to lie when they report this type of information. This is due to a psychological phenomenon where people will be more honest if they believe their responses could be easily fact checked.

Demographic characteristics should be mentioned in any comprehensive understanding of the person element to financial decision-making. However, the caveat to the utility of demographic information in predicting investor behavior is that though these tangible characteristics have very little measurement error in what they are intended to measure (e.g., biological sex is an extremely accurate metric), they have a high degree of measurement error when we apply them to other intangible characteristics (e.g. risk propensity). Another way of explaining this is to consider what is meant when we talk about gender differences in investment performance. What these studies are saying is that when we consider all the males from a group of investors and compare them with the females, on average males tend to trade more frequently. This leads us to conclude that males are more risk-seeking than females, or are more prone to overconfidence.

In reality, we really find that a subset of males in the sample is pulling the average for that group up, leading to statistical differences between genders. For instance, recent research shows that males who are higher on optimism and promotion focus are accounting for the proneness towards overconfidence in investments that leads males to perform better than females. This suggests that measuring intangible characteristics of investors is critical to consider in addition to their demographic characteristics. These studies also do not account for other differences that may be important, such as experience with investing, the level of wealth for groups in the sample, and the culture of the investors (e.g., Eastern cultures are much more likely to show gender differences than Western cultures). Another factor to consider is the population of investors overall, and how representative a sample is of the broader population. For instance, historically males are more likely to invest than females, though this gap is closing in recent years. Therefore, gender studies from two or more decades ago are less predictive in the current market.



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SOCIAL DEMOGRAPHICS

The previous discussion is not intended to imply that demographic information is not predictive or important. There is support from research showing that gender does relate to proneness towards certain cognitive biases. What we can use demographic information for is a proxy for social and environmental factors that shape our tendencies. Research shows that both racial characteristics and gender can both lead to a psychological phenomenon known as stereotype threat (i.e., people are aware of their surface-level identity, and match their behavior to the stereotype norms they believe are expected of them). In social situations, such as meeting with investment teams, this phenomenon may lead people to act in accordance with their perceptions about their identity. For instance, males may be more prone to risky investments because they believe others expect them to be dominant or action-oriented. Females may act more cautious with investments because they are aware of the negative connotations associated with dominant females. These tendencies, though they are socially influenced rather than genetic, are no less important for understanding investors. Advisors should be aware of these behavioral patterns in order to connect with their clients' needs and understand their clients better.

RESOURCES

Access to resources have also been shown to impact investment strategies and performance. For instance, research shows that the level of wealth an investor has and their age are related to their investment performance. Some research considers that wealthier investors are less prone to cognitive biases because they have more resources to work with. Age and experience with investing have also been determined to have an effect on investment performance. However, age, experience, and wealth are also positively correlated, meaning that older people are also more likely to have greater wealth and more experience with money. Therefore, the effects of these three factors independently may be confounded by the combined effects.

Though there is evidence that age, wealth, and experience show differences in investment performance, recent research indicates that those differences may be more relevant in reactions to outcomes, rather than the motivators leading to those outcomes. Specifically, more experienced investors may make poor investment decisions, but their experience offers more perspective on a loss than a novice investor does. Essentially, the studies are capturing lower reactivity to loss among wealthier and more experienced investors, rather than better decision-making capacities.

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Individual Factors

The field of behavioral finance has created a substantial body of work illustrating the impact of cognitive biases across a variety of cultures, investment scenarios, and financial outcomes. However, the discipline has reached a point where the next direction is identified but largely untapped by research. To date, the majority of the work has focused on the observable characteristics (biodata) and behaviors (cognitive biases), which is a standard approach to a new discipline. However, the predictive ability of these metrics is limited by their observable nature. The field of behavioral finance is currently missing an understanding of the internal, core characteristics of people who interact with these observable characteristics, and predict how people make decisions about finances and investments. These characteristics may refer to personality traits, emotional tendencies, or individual motivators.

The past decade has seen some of the more prominent behavioral finance researchers expressing the need to understand intangible characteristics of investors, and a small amount of research has begun exploring those characteristics. We summarize what has been done here, but highlight the need to connect this work with the broader model of investor profiles. Currently, the research has not addressed the individual characteristics that predict the tendency to rely on certain heuristics when making decisions, or proneness towards certain cognitive biases. Accordingly, the research applying psychological characteristics of individuals to the realm of investment is light and relatively new as an approach to investor profiling.

In addition to exploring what work has been done to understand the core psychological characteristics of investors, we should consider what we know from the field of psychology about how to measure and use these characteristics to differentiate among people. For instance, the more elegant and informative research on individual differences in psychology considers the constellation of characteristics to be more defining than individual traits. For instance, a person who is extraverted and high on neuroticism responds to stimuli differently than a person who is extraverted and low on neuroticism. The interactive effects of these traits is useful for differentiating among people.

Another area we should consider from psychology is the precision of measurement. Many measures that rely on self-report are subject to some error because people have a hard time rating their internal states without context. We can address this by asking more specific, domain-relevant items and by building in discrete indicators. Discrete indicators are questions that have low face value. In other words, questions that get at an underlying behavioral tendency without the individual knowing and editing their response. So for instance, if you ask someone how much information he or she needs before making a decision, they may answer that they need a high amount of information. However, if you ask someone if they always read the full contract before signing something, people are able to contextualize the question and answer more honestly. Research shows a combination of both types of questions can help with more precise, domain-specific measurement.

In the following sections, we briefly review the work that has been done to examine individual differences in investors that contribute to their investment decisions. It may be noted that the results of this research are light, and at times conflicting, because the outcome metrics related to investment decisions are not consistent across studies. In the process of developing an assessment, this work should be combined with approaches to understanding individual people from psychology, and then applied to the cognitive biases and specific investment outcomes studied in behavioral finance.

Personality

The two primary personality models that have been investigated in behavioral finance are the Big Five personality traits and, more recently, the Myers-Briggs model.

Motivation and Emotion

Some research has begun to consider the emotional elements of motivation and personalities that influence investment behavior.

PERSONALITY

The two primary personality models that have been investigated in behavioral finance are the Big Five personality traits and, more recently, the Myers-Briggs model. The Big Five personality traits are openness, agreeableness, conscientiousness, extraversion, and neuroticism. The Big Five is one of the most widely-used personality models across disciplines and has shown some predictive power in investment performance. Extraverted individuals have been shown to make fewer investment trades compared with introverts, but tend to have a higher propensity for short-term investments and for risky investments. Extraverts have also been shown to have a higher propensity for engaging in hindsight bias and are more prone to the disposition effect. People who are high in openness to experience are more prone to long-term investments than other investors are, and are more open to risky investments. Investors who experience loss and are high on agreeableness or low on conscientiousness tend to have the more positive reactions and coping styles with financial loss. Neuroticism, which is characterized by heightened emotional responses, anxiety, and fixation-tendencies, was found to be related to risk-taking but also to greater discomfort and dissatisfaction with risky decisions.

The Meyers-Briggs model considers four dimensions of personality: extraversion, information processing (sensing versus intuitive), decision-style (thinking versus feeling), and preference for structure (judging versus perceiving). The Meyers-Briggs has lower reliability as an instrument than the Big Five, but is extremely popular in many industries because it categorizes people into types based on their approach to different situations. Research applying the Meyers-Briggs to financial decision making has shown that individuals prone to a thinking decision-style (preference for objective decisions and fairness) are more risk-tolerant than individuals who are prone to a feeling decision-style (preference for subjective decisions and congruence). Those who are more sensing in their information processing (concrete thinkers) are more able to tolerate higher potentials for gains or loss than intuitive processors (abstract thinkers) are. However, intuitive or abstract thinkers tend to be more prone to risk-taking.

Though we have discussed the main personality models that have been applied to financial research, several other personality traits have been studied. Impulsivity and sensation-seeking have been linked to high-levels of risk-taking in financial decisions. People high on venturesomeness or risk-taking and self-efficacy have been shown to be less susceptible to overconfidence and more rational in financial decisions. People who are high on sociability characteristics, such as conformity, extraversion, and risk aversion, tend to be more susceptible to the influence of others when making financial decisions. Overall, the results of the personality research to date are relatively inconclusive. There is substantial evidence that individual characteristics are predictive and important in financial decision-making, yet little research that has comprehensively considered personality constellations of investors.



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MOTIVATION AND EMOTION

One of the most compelling motivational theories that applies to financial decision making is regulatory focus. Regulatory focus as a construct measures how promotion- and prevention-oriented an individual is. Typically, these orientations have both a stable, person-level component, as well as a domain-specific component. When a person is promotion-oriented in the financial domain, it indicates that they are motivated to seek out the potential for high gains. Conversely, when a person is prevention-oriented in the financial domain, it indicates that they are motivated by avoiding losses. Though these motivational tendencies seem at odds, some people are high on both of these factors, but may have one that is more prominent. For example, someone that is both promotion and prevention-oriented may seek out high gains, but only when the potential for loss is also low. There is some evidence that these motivational tendencies not only predict how people will make decisions in the financial sector, but also differentiate between the types of investments people will pursue. For instance, the level of promotion-orientation a person has in the financial sector is related to the propensity to engage in stock trading and short-term investments. Promotion-orientation is also associated with lower propensity to engage in escalation of commitment following shifts in the performance of an investment. Prevention-orientation is more predictive of investment in mutual funds and retirement accounts, as well as long-term, stable investments. In addition, the ways in which investors use their funds has been shown to differ according to promotion- and prevention-orientation.

Other motivational constructs that have applications for financial decisions making include information seeking and locus of control. Information seeking refers to behavior that investors may engage in to gather, evaluate, and use information to aid in their decisionmaking process. Guidance from an advisor is one primary source of information that investors may use, but they may also seek out information from media sources, friends or colleagues, and the internet. Research considering this motivational characteristic considers not only the sources of information investors prefer, but also their preference for how much information they receive. For instance, low-information investors and “reluctant” investors both tend to prefer only receiving information and guidance from an advisor. When they are tasked with reviewing additional information or sources of information, these investors tend to become more risk averse and are less likely to make prudent investment decisions. Investors with high-information motivation are much more likely to consult a variety of information sources, though their preference for information sources varies by typology (e.g., locus of control). The higher an individual's need for information is, the more involved they tend to be in the financial decision-making process. Investors with a high need for information and an internal locus of control tend to value their own information gathering above advice from others, and prefer to be the ultimate decision-maker for their investments. Investors with an external locus of control are more trusting of the advisement from others, and prefer less involvement in investment decisions.

Finally, some research has begun to consider the emotional elements of motivation and personalities that influence investment behavior. These characteristics tend to be trait-based, as opposed to moods or affect which are temporary states that individuals experience. One emotional motivator for investors is regret aversion. Research has shown that individuals with strong regret aversion are much more cautious when making financial decisions, and are less prone to action. Regret aversion relates to neuroticism (another emotional motivator), because often the emotions the individual experiences are related to the anticipation of regret, rather than actual regret. This phenomenon is related to their manifestation of anxiety behaviors, which influence their decisions and in general leads to better, more calculated decisions. As opposed to people with trait anxiety, such as neuroticism and regret aversion, those who exhibit trait anger are prone to medium-risk portfolios, and are slow to sell investments regardless of whether they are experiencing gains or loss. This is due to the tendency for people with trait anger to experience overconfidence and overestimate their control over investment outcomes.

Summary

The research reviewed from behavioral finance, cognition, and psychology provide a strong theoretical foundation for understanding investors and how they make decisions about their financial assets. Though behavioral finance has initiated the process of considering other factors about individual investors, above and beyond their demographic characteristics, that contribute to their investment performance, there is a need to examine the interaction among those characteristics to predict typologies of investors that will differ in their approach to investment decisions. Key motivational and personality characteristics provide compelling evidence that investors differ according to several core traits that may be used to better understand how they approach financial decisions.

KEY TAKEAWAYS

- Cognitive biases and heuristics are useful metrics for understanding potential causes for poor investment performance and irrational decisions, but they are less informative for understanding what investors are prone to engaging in those faulty heuristics.
- Demographic information and biodata are predictive of cognitive biases, but they may be more useful as proxies for other social phenomena that influence individual behavior.
- Personality has very limited support currently, but shows promising results related to its predictive capabilities for understanding investors and investor behavior.
- Motivation and emotional traits are among the most compelling characteristics to consider when profiling investors, although the current state of the research is limited.
- Considering the constellation of individual characteristics is the most promising method of differentiating among typologies of investors, which may facilitate understanding with their advisor in early communication.

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