BHP Capstone Research Paper

Behavioral Corporate Finance: How Psychology affects Corporate Financial Decisions

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Introduction

All financial decisions are related to behavioral finance, no matter how much analytical work is done to make a financial decision. Studying the connection between finance and psychology allows for deeper understanding of the financial world. Why do finance professionals make the decisions they do? It is based on their psychological reasoning, but how can they avoid hindering their decisions? Behavioral finance is important to know as a finance professional but is not taught as part of main finance curricula. Knowing formulas and analytical skills is extremely important for a career in finance, but understanding why and how people make decisions is just as important. Financial analytics is the traditional form of financial decision making. By combining psychology and finance to take into consideration behavioral finance, executives have multiple ways of making financial decisions.

Behavioral finance is defined as "the study of the influence of psychology on the behavior of investors or financial analysts" as well as the "subsequent effects on the markets. It focuses on the fact that investors are not always rational, have limits to their self-control, and are influenced by their own biases" (Park, 2022). There are many theories why a finance professional may act in financial situations the way they do. *Heuristics*, *prospect theory*, *cognitive dissonance*, and *overconfidence* are some concepts that explain the psychology of behavioral finance (see sections below). Diving into *self-attribution* versus *loss aversion* may provide explanations as well.

Behavioral corporate finance intersects the disciplines of psychology and corporate finance to explain how all financial decisions are inherently related to behavioral finance. To determine behavioral finance in a corporate setting, one must look at position holders who make

the financial decisions for the firm. After all, it comes down to an individual's perspective on the

financial decisions.

To make corporate financial decisions, business executives use financial modeling. Jeff

Schmidt from the Corporate Finance Institute describes financial modeling as "combining

historical and projected financial information to make business decisions" (2023). In order to use

financial modeling, assumptions of the future must be made and calculations must be done in

order to achieve correct results. If the financial model contains an error, the mistake can be

extremely costly to an organization. Data analysis is not the only way to evaluate financial

decisions: people also use behavioral finance to make their decisions. The Covid-19 pandemic

has re-raised the question of "are financial analytics enough for a company?". The pandemic

forced companies who are heavily invested and reliant in data analytics to use their data to make

decisions for the company during this difficult time. The only problem was they did not have any

prior data to use to make predictions or decisions for the company. This was an event no one

anticipated, therefore, data analytics are not particularly helpful and not the end all be all of

financial decisions (Collins & Harper, 2020).

The American Productivity & Quality Center's research shows that companies

investment in analytics is growing at a high rate since 2017. Of the 200 finance executives in the

study, half have been implementing analytics since 2010. This number rose to 68% since 2014

(data until 2020). A majority of the executives in the study take into account business operations,

sales, supply chain, marketing, human resources, and customer experience in addition to their

financial analytics. Only one-third of the companies take into account external factors such as

industry trends, competitors, market trends, and benchmarks. Some companies are behind in

using prescriptive analytics, the most advanced form of analytics, with only about one-third

saying they use this form of analysis. Financial Planning and Analysis can analyze and predict

company needs, but is accomplished by machine learning (Collins & Harper, 2020).

Only 24% of the executives involved in the study believe their company's form of

financial analysis is "very effective". The majority believe their analysis is "average". This

shows that executives rely heavily on data analysis, but understand more needs to be done to

either improve the analytics, or use another decision making process, such as behavioral finance

(Collins & Harper, 2020).

Together, information gathered above about corporations, investors, and executives all

show a potential benefit from the addition of behavioral finance to analysis. Below, influential

concepts will be discussed before closing sections on paths forward.

Heuristics

Heuristics, also known as rules of thumb, are used to simplify problems and avoid

cognitive overload. Heuristics are shortcuts for simplifying the methods of assessing

probabilities and values and eliminate the need for extensive calculations. The theory

understands that people's assessments of risk are not known to be exact to the laws of probability

(Hugh Schwartz, nd, Chapter 4, p. 57).

The advantages of using heuristics is that they are meant to assist in making fast

decisions that are deemed "good enough" without having to do complex calculations. The

disadvantages of using heuristics are not being able to come to the best possible decision, and

there may be instances where the decision made by heuristics is entirely wrong. Heuristics also

allow bias to get in the way of data (Hugh Schwartz, nd, Chapter 4, p. 60).

There are multiple categories of heuristics including *representativeness*, *availability*,

anchoring and adjustment, *overconfidence*, and *memory*. Representativeness uses similarities to

past events to determine the likelihood of an event. It is the brain's way of determining

probability quickly in order to form judgments. Availability heuristic reflects the weight given to

information in place of profitability or frequency. Availability takes into account a recent news

event, for example and is heavily reliant on information coming from memory, which may not

always be reliable which then leads to errors. Anchoring and adjustment involves adjusting in the

start. Someone may look at recent data, or in most cases look at false or insignificant data that

negatively affects the decision outcome. People will use the inaccurate data and adjust it until

they come to a conclusion that sounds correct to them. Overconfidence leads to people making

decisions they may not have because they assume data. Overconfidence is related to multiple

behavioral finance theories and will be described in more detail in a later section. There are also

contamination effects due to multiple factors such as overconfidence and the hindsight bias. The

hindsight bias in which a person places more probability in their prediction of an outcome of a

decision after the outcome of the decision has already been made known to them. Lastly,

memory problems can introduce biases with heuristics. This introduces the idea of cognitive

dissonance (Hugh Schwartz, nd, Chapter 4, p. 45-47, 61-64).

Cognitive Dissonance

Cognitive dissonance is defined by its founder, Leon Festinger as "the state of mental

tension that occurs whenever a person holds two cognitions (ideas, beliefs, etc.) that are

psychologically inconsistent" (Olsen, 2008, p. 1). Financial models are based on assumptions of

personal behavior, institutional practice, and the larger environment of the organization. One

executive from one organization may have an idea of a financial market that is contradictory

from an executive's idea from another organization. Cognitive dissonance usually allows a

person to stay with one's currently held beliefs and not the newer belief that is contradictory.

Cognitive dissonance suggests that humans need an external corrective mechanism to change their ideas, they cannot do it themselves (Olsen, 2008).

Prospect Theory

Prospect theory, developed originally by Daniel Kahneman and Amos Tversky in 1979, to determine the likelihood of monetary decisions. There are two phases to prospect theory: first, editing, which is the initial analysis of the choices. Second, there is evaluation which is when the highest value prospect is chosen. Also essential to prospect theory is to keep in mind the changes in financial states rather than just the final product (Kahnesman and Tversky, 1979).

Morris Altman looked further into the prospect theory. Altman explained that "prospect theory is a theory of average behavior, not individual. It theorizes how an individual or group of individuals behaves, on average, in a world of uncertainty" (Nd, Chapter 11, p. 191). Prospect theory focuses on how individuals evaluate their risk and involve themselves in risky behaviors. People, on average, prefer specific outcomes of their monetary endeavors. Prospect theory may suggest that individuals dealing with the financial markets are irrational. The irrational behavior being shown may be a result of reacting to information that is imperfect and cannot be dealt with in a uniform fashion. Being able to change the way individuals make decisions on a case by case basis instead of a conventional, average fashion (Morris Altman, nd, Chapter 11, p. 191).

Prospect theory is also known as loss-aversion theory. It assumes that people view value losses and gains differently. It also assumes people have an inherent tendency to loss aversion. When given two choices, one that is a gain and one that is a loss, a person will make a decision based on the gain. For example, a gain versus a loss can be assumed to be 50/50, but the possibility of a gain can be perceived as greater. "Tversky and Kahneman proposed that losses cause a greater emotional impact on an individual than does an equivalent amount of gain, so

given choices presented two ways—with both offering the same result—an individual will pick the option offering perceived gains." (Chen, 2022).

Emotional Gap

In relation to rationality, the most common reason why a person does not make a rational decision is due to emotions. Emotions such as anxiety, anger, fear, or excitement can greatly impact a person's decision making (Hayes, 2022). These emotions can affect a person's rational thinking by clouding their judgment based on strong emotions. Emotional gap is a simple theory, yet extremely relevant especially when thinking about other theories such as biased self-attribution as described below.

Loss Aversion & The Endowment Effect

As stated above, loss aversion is the idea that individuals weigh losses higher than gains when making a decision (Morris Altman, nd, Chapter 11, p. 192). In other words, when a risk is presented, a person thinks about how the possible loss can affect them more than the possible gain. The endowment effect is described as the idea that the selling price of a good is higher by a factor of two or more than the buying price of that same product. The value of a good appears to be higher when the good is being given up versus when the good is being gained. Morris Altman describes "Individuals' subjective psychological valuation of prospects determines choice behavior inclusive of behavior on the financial markets" (Morris Altman, nd, Chapter 11, p. 202). A person's individual way of thinking can determine how they view a risky decision as a loss or a gain, and therefore view how much risk and value they put on that decision.

Biased Self-Attribution

The bias self-attribution concept is described as when a person accepts responsibility for their actions when there are successful outcomes to their decisions and places blame on external

factors when there are negative outcomes as a result of their decisions. This is an internal

psychological defense mechanism that plays a part in financial decisions as a way to protect

oneself in order to see ourselves in a positive light and to allow for others to see them in a

positive light. This bias allows people to delude themselves when their decisions do not turn out

as planned or reward themselves when they do. This bias can have a negative effect on the

financial decision making of executives because of the deception they are having on themselves.

By having a biased self-attribution thought process, executives can be led to becoming

incorrectly overconfident in their decision making. Specifically, a study found that when CEOs

have success when they achieve their first acquisition, they attribute too much of the success on

themselves and their own decisions. This leads to them having an overconfident mindset and

ruined company value by participating in other acquisitions that did not go well. (Michael

Dowling & Brian Lucey, nd, Chapter 17, p. 317 & 319).

It is important to note that the previous theory of loss aversion and biased self-attribution

cannot exist simultaneously. When a person is exhibiting biased self-attribution, they become

overconfident, therefore willing to take on riskier financial decisions than if they were not

exhibiting the theory. Loss aversion is the exact opposite, meaning a person will not engage with

risky financial behavior in order to attempt to ensure a positive outcome (Michael Dowling &

Brian Lucey, nd, Chapter 17, p. 319).

Overconfidence

In relation to behavioral corporate finance, a study showed that financial executives'

confidence in financial decisions are not statistically backed by the outcome of the decision

(Markus Glaser & Martin Weber, nd, Chapter 13, p. 242-243). Companies that have

overconfident executives are more likely to spend more money in the long run. Overconfidence

in finance is the over estimation of information. There are different explanations for why executives are overconfident. For example, male executives are generally more overconfident than female executives, possibly due to there being more societal pressure for females to be underconfident compared to males (Markus Glaser & Martin Weber, nd, Chapter 13, p. 247). Although not discussed in the source above, it can be inferred from a study of female versus male executives that of the top executive positions in the United States, almost 32 percent of them are women, making male executives well more than half of the top executives in the country (Gilligan, 2023). This may skew the data regarding overconfidence due to the smaller number of executives being women. Alternatively, gender may also be related to self-esteem. This concept also relates to the previously explained biased self-attribution which relates highly to overconfidence, "males, perhaps because of a higher average self-esteem than females, tend to be more likely than females to attribute causes of outcomes to biased reasons" (Michael Dowling & Brian Lucey, nd, Chapter 17, p. 318).

Faten Ben Ahmed and Anis Jarbou explain that CEO's can influence team members through loyalty and obedience. In their research they explain, "the CEO is the most executive with a margin of discretion and, therefore, he has the ability to affect the decision-making process and organizational results through his personalized interpretations and its individual characteristics. Such an impact will have consequences on the accuracy of forecasts" (Faten & Jarbou, 2022, p. 164). Overconfident CEOs use conservative accounting significantly less than a normally confident CEO, even if the company has above average monitoring. Since CEOs have such a high impact on their company, if they make inaccurate forecasts, it can have a negative impact on the company as a whole. Faten & Jarbou explain that extreme forecasts lead to poor company performance.

Considerations

      Taking into account the COVID-19 pandemic once again, this event is the most recent universal examination of how corporations needed to examine other financial models besides analytical models. Behavioral finance was looked at to overcome biases and use other forms of considerations. The biggest risk for organizations during the pandemic was how they reacted to the volatility they experienced. Justin Waring and Marianna Mamou from UBS describes the point:

      This called for a deep understanding of multiple behavioral finance topics and biases. In these types of crisis situations, the factors don't fit into any existing pattern, so [instinctual, automatic, and unconscious] thinking can be counterproductive. Our "fight or flight" instincts lead us to run for safety, which can ironically lead us to turn temporary losses into permanent ones. At the same time, it takes a lot of time and effort to think through every risk and decision [conscious effort, time, and focus], and we don't always have the information that we need to make rational decisions. Rather than relying on sheer force of will, we can use systems and tools that help us make hard decisions easier or rarer (pg. 2).

Understanding the psychological risks of financial decision making can help build better systems even in unknown circumstances.

      Ben McClure explains that there is no evidence to say that behavioral finance models can accurately predict the future as some analytical models have. But, "[the behavioral finance models] tell us that psychology causes market prices and fundamental values to diverge for a long time. Behavioral finance offers no investment miracles to capitalize on this divergence, but

perhaps it can help investors train themselves on how to be watchful of their behavior and, in turn, avoid mistakes."

Conclusion

A route forward for behavioral finance might be to clearly codify influential concepts and procedures for quantifying their influence on models, making understanding behavioral finance increasingly more important with the rise of reliance on financial data analysis. A first step, addressed in this manuscript, is differentiating influential concepts of behavioral finance in regard to corporate finance and executives. Executives make decisions for their organizations based on the data analysis presented to them from the past to predict the future. The final decision comes from the executives who may be experiencing the behavioral finance theories described above. Some of these theories can become more detrimental to the company overall than others, but it is important to know and understand them in order to recognize when a behavior finance concept is being exhibited in a real-world setting.

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