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Propositions on the Effects of Emotions on the Stock Market based on Appraisal Theory, Approach and Avoidance Motivations.

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Abstract

Previous research has indicated that emotions have an effect on investment behavior. However, this research only encompassed a limited range of emotions. While emotions like fear, anxiety, and anger have been frequently studied for their effects on investor behavior and how they affect the stock market, the effects of other relevant emotions such as sadness, surprise, nostalgia and excitement have not been as extensively studied. Furthermore, only a limited range of investment behaviors have been studied. This paper served as a review for the previous research on emotions and investment behavior, and develops a generalized model following a two dimensioned approach incorporating approach and avoidance motivations as well as appraisal theory. Different emotions significantly affect investor behavior and the stock market and emotions with approach tendencies cause risk prone behavior while avoidance tendencies cause the opposite. Additionally, the more an investor is associated with certainty appraisals the more confident they are that their investment will travel in the intended direction. Through this model, propositions are made linking emotions and investment behavior and stress their nuanced relationship. This paper was formulated through previous literature, previous surveys and experiments as well as established psychological principles. This paper deepened the comprehension of how emotions affect investor behavior and emphasized the essential nature of considering a broad spectrum of emotions when analyzing investment decisions.

Keywords: Behavioral economics, Investor behavior, Appraisal theory, Avoidance motivations, Approach motivations

1. Introduction

Research indicates that emotions play a role in an individual's investment behavior. A large number of papers have been published to elucidate the impact of emotions on investment behavior, but there are several notable shortcomings. First, the research has focused on a small number of emotions. Fear, anger, and anxiety are overrepresented in the literature, with researchers focusing almost solely on these three (Gambetti & Giusberti, 2012; Wynes, 2021). Of all the positive emotions that have been observed in past research, happiness and hope are emotions that have been frequently studied (Navale, 2012; Li, et al., 2017). Other emotions highly relevant to investing and investment-related situations - such as sadness, surprise, and challenge - have not been extensively examined. Second, there are contradictory findings throughout the literature with no explanation for them. Consistent effects of a given emotion on investment behavior are expected. This happens most often in papers on happiness; though this might be because happiness is often erroneously used as an umbrella term for positive emotions which are in fact quite different (Mogilner et al., 2012; Galati & Sotgiu, 2004). One paper, for example, concludes that people display different investment behaviors when they feel happy depending on whether they are in "natural-environment happiness" or "investment-atmosphere happiness" (Huang & Goo, 2008). After a closer examination, these two are more appropriately classified as peace and pride, which resolves the seemingly contradictory findings. These contradictory

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findings highlight the lack of understanding of the unified psychological underpinnings of emotions and investment behavior.

The previous literature showed that emotions can affect investor decision-making. Emotions have been shown to cause changes in the tendency to buy and sell and the tendency to make risky or conservative decisions. Furthermore, emotions cause cognitive biases to form, such as overconfidence. To provide a more stable foundation to understand the psychological underpinnings of emotions and investment behavior, and to address these gaps, a framework based on approach/avoidance motivation and appraisals has been built based on previous literature as well as previous models and statistics. The anticipated results from this model show that approach and avoidance motivations will result in risk prone and risk averse behavior respectively and the more an investor is associated with certainty appraisals the more confident they will be that their stock will move in the direction they believe.

This paper aimed to contribute a more nuanced understanding of emotional impacts on investor behavior and underscored the importance of considering a broad spectrum of emotions in financial decision-making. This paper and the novel model aimed to provide a clear direction for further studies as well as provide insightful knowledge to individual investors as well as financial advisors.

2. Emotions Influence on Specific Investment Behaviors

2.1 Selling Stocks at a Low/Buying Stocks at a High

This section details how investors behave with stocks when their value is declining, or there is an indication that their value will decrease. Researchers found that feeling fear (Navale, 2012) or anxiety (Gambetti & Giusberti, 2012) results in a greater likelihood of selling stocks at a low price. The effects of fear or anxiety on investor behavior have resulted in very similar conclusions as seen in the previous sentence. It has been shown that selling while the market is in a downturn (when the market is continuously declining) due to fear may cause negative stock returns meaning money is lost (Guiso, et al., 2018). Anger can also result in this type of behavior because it promotes riskier decision making which typically translates to selling at a market downturn and buying at a high (Gambetti & Giusberti, 2012; Wynes, 2021). Several researchers have also examined the reverse of the selling at a low, seeing whether emotions cause a shift in investors' decisions to buy stocks at a market high. Hope causes people to buy at a high (Navale, 2012). Hope is an emotion rooted in optimism. There is a positive correlation between optimism and risky behavior, more optimism relates to more risky behavior (Anderson & Galinsky, 2006). Hope causes people to make riskier, rasher decisions because people rush to buy assets in anticipation of future gains which often leads to prices that are much higher than the intrinsic value of the asset (Navale, 2012). This results in rash decision-making because when you are expecting higher returns you are hopeful which makes you behave risk-prone.

2.2 Volume Traded

Previous literature has shown some emotions, specifically positive emotions, have an effect on the volume of stocks traded. When daily happiness measures rise, so do volumes of traded stock (Li,et al., 2017). In a similar study, they analyzed 50 million twitter posts, or 10 percent of that day's twitter posts and then analyzed the tweets based on 10,000 "sentiment based" words to determine whether it showed happiness or not (Zhao, 2020). They ran linr and nonlinear correlation coefficient tests as well as Granger causality tests and found that there were immediate and long term relationships between happiness and positive stock returns (Zhao, 2020). When the overall level of happiness rises in investors, the amount traded that day seems to rise. Stocks and mutual funds are directly related to happiness and when happiness rises as seen in the previous line, so does the volume traded (Rao, et al., 2016). The previously mentioned paper which studied two different "types" of happiness, "natural-environment happiness" and "investment-atmosphere happiness", that closely resemble peace and pride found that these two types of happiness cause volume traded to rise (Huang, & Goo, 2008). Due to the erroneous association of peace and pride as types of happiness it is actually peace and pride causing the volume traded to rise. This indicates that happiness is not the only emotion to affect volume trading, and possibly points to a more generalized effect of positivity.

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2.3 Conservative/Risky Decision Making

Still other researchers have examined how quick people are to come to an investment decision, particularly if the decision is not supported by other information available. Conservative decisions entail very careful throughout, sometimes over thought out decisions while risky decisions describe rash actions and less thought out decisions. Until now, anger is the only emotion researchers have examined in this context. They find people feeling anger (vs. no emotion) are quicker to make rash decisions when stocks appear to be declining. On the other hand, anxiety prompts conservative decisions, as investors frequently select safe investments with positive returns (Gambetti & Giusberti, 2012). Likewise, fear causes investors to avoid risk and make safer decisions (Lopes, 1987). Safe in this context refers to more conservative decisions or not rash decisions. Fear, an emotion people run away from, causes people to sell at a low to run away from the possibility of losing money (Navale, 2012).

3. Psychological Mediators of Emotionally-Driven Investment Behaviors

3.1 Depth of Thought

Emotions have been shown to affect the level of and amount of consideration people put into a decision, known as depth of thought (Wynes, 2021). Depth of thought, in turn, has been shown to affect investment behavior. Investors feeling a sense of fear after a loss shows a higher depth of thought (Wynes, 2021). Furthermore, with this higher depth of thought, researchers found that investors sought out additional sources to supplement their decisions. This happens because fear is a regret-aversive emotion that causes investors to think more to avoid regretting decisions they make in the future (Gazel, 2015). By contrast, angry investors, after a loss, are seen to show a lower depth of thought and search for less additional information to support investment decisions and riskier decisions (Wynes, 2021).

3.2 Optimism and Pessimism Effects on Investor Sentiment

Optimism, the belief that actions will result in positive outcomes (Carver, et al., 2010), has been shown to affect investor decisions (Fabre & François-Heude, 2009). Angry investors tend to perceive risk optimistically, as they feel a sense of invulnerability (Lerner, & Keltner, 2001). This leads to riskier decision-making. Conversely, fearful investors tend to perceive risk pessimistically (Lerner, & Keltner, 2001). Researchers have discovered pessimism is at least one of the reasons investors who feel fear are less likely to invest in risky stocks or insurance (Delis, et al., 2015). This leads to more conservative decision-making.

3.3 Risk Aversion

Risk aversion is defined as a tendency to avoid risk. This can manifest in behaviors like propensity to sell. Hope makes people more comfortable taking risks, and so in the belief that a stock will go up stockholders will avoid selling stocks (Luo, et al., 2023). Many emotions have been shown to affect the amount of risk people take in investment decisions. As happiness rises in investors, the likelihood of investing in risky stocks goes up (Apergis, et al., 2019). Emotions like hope and anger lead people to be more comfortable with risky decisions, while emotions like fear make people less comfortable (Aren & Hamamci, 2020).

3.4 Overconfidence

Emotions like pride and shame can cause overconfidence (Chu, et al., 2016). Overconfidence can affect investor performance and stock returns in negative ways by promoting riskier behavior (Ady, et al., 2020). Furthermore, stronger positive emotions cause more overconfidence (Im & Oh, 2016). People who feel "natural environment happiness", or peace, are not very confident, but people who feel "investment atmosphere happiness" feel a sense of pride and are quite overconfident (Huang & Goo, 2008).

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4. External Mediators of Emotionally-Driven Investment Behaviors: The Influence of Media, News, and Blogs

Emotions are very easily conveyed over media sources such as the news, and social media platforms. This happens because it is a handy source of information that may provoke emotions in potential investors. Studying the media is also a handy source of information for academics studying how the presence of emotions in media sources affects investment behaviors. For this reason, the effect the media have on investing has been highly studied.

4.1 Social Media Effects on Investor Decision Making

Social media outlets like Twitter and Facebook influence stock market activity (Valle-Cruz, et al., 2020). Public sentiment on the news and social media posts can sway investor decisions (Li, et al., 2014). On Twitter, when investor sentiment is negative, this affects S&P firm stocks and causes them to fall. One prominent mechanism is affecting investor sentiment, which is the current generalized emotional mood or attitude of an investor. When Twitter sentiment is positive, the S&P firm stocks increase (Sul, et al., 2014). For other social media platforms, similar results are observed: where positive sentiment is created from posts on Facebook, the related stock performs better (McGurk, et al., 2020). It has been shown that some social media platforms generate different sentiments overall. Facebook draws out more positive investor sentiments while Twitter draws out negative investor sentiment (Panger, 2017). Emotions like disgust, fear, joy, and sadness, have been identified in many different social media outlets (Zhou, et al., 2016). Furthermore, emotions like fear and excitement are drawn out in social media and cause stock market crashes and positive stock returns respectively (Ge, et al., 2020; Wakefield, & Wakefield, 2016).

4.2 Traditional Media Sources Effects on Investor Decision Making

News sources analyzed two pessimistic and two optimistic investor sentiments (Griffith, et al., 2020). In response to this, fear and gloom cause a lot of change in the market while the other two, stress and joy don't cause much change (Griffith, et al., 2020). In another traditional media source, web blogs, where readers who invested in the market were perceived as anxious, worried, and fearful, these emotions can influence investor decisions in the market like which stock they choose to invest in (Gilbert, & Karahalios, 2010).

5. Model of Emotions and Investor Decision-Making

For the purposes of this framework, investment behavior and cognitions are distilled into people buying or selling. If they think the price of stock will increase they will buy, and if they think it will decrease, they will sell. The certainty of that belief determines how likely they are to follow through on that buying or selling behavior. Emotions affect the likelihood to buy or sell through approach and avoidance motivation and appraisals. My model incorporates these along two dimensions: certainty appraisals and approach, avoidance motivations.

5.1 Beliefs about Stock Movement and Approach/Avoidance Motivation

Most emotions have an approach or an avoidance tendency. When an emotion results in an approach tendency, people are likely to move and act toward the cause of the emotion. For example, angry people frequently confront the stimuli that makes them angry (Harmon-Jones, et al., 2014). Avoidance tendencies indicate the tendency to move away from the stimulus causing the feeling. For example, fearful people will escape what causes that fear (Jana, et al. 2021). The desire to approach something risky reflects the assumption that the contact will be positive, whereas the drive to avoid something reflects the belief that the interaction will be unpleasant. Therefore, feelings that are associated with approach tendencies likely make people who feel them believe the stocks will do well, whereas feelings motivated by avoidance would make one believe that stocks will perform poorly.

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5.2 Likelihood of Stocks Moving with Beliefs and Certainty Appraisals

The second dimension of my model is how likely an investor would be to act on their beliefs based on how certain they feel. One of the central appraisals in papers is certainty. First off, a cognitive appraisal is an interpretation of a situation made by someone responding to stimuli in their environment. A certainty appraisal has to do with the knowledge of what's going on, understandability of the situation, and perceived predictability. The more someone is associated with a certainty appraisal the more confident they are about that decision. This translates to investment behavior because people with higher certainty appraisals will be more certain that the stock will move in the direction they believe, and more likely to act according to that belief. Anger has a very high certainty appraisal, but fear is considered to have a very low certainty appraisal. This leads to specific behavioral observations, such as people who feel anger making riskier decisions than people who feel fear (Lerner & Keltener, 2000).

6. Propositions

Using this refined model, there are several potential lines of research. These suggestions are intended to guide future behavioral economics researchers. Using previous findings to verify the model, it showed how the model explains these effects.

6.1 P1a: Fear leads people to sell to good stocks because of fear's avoidance tendency.

According to previous research investors feeling emotions like fear draw a striking avoidant response. Furthermore, fear has been measured to have higher risk aversion. This can be explained by avoidance motivations. Any emotion which has a characteristic of arousing an avoidant response should lead to risk-averse behavior and conservative investment decisions. Anxiety, another heavily studied emotion that has an avoidance motivation, causes conservative investment decisions as well as risk-aversive behavior (Gambetti & Giusberti, 2012). Therefore, any emotion whether it be negative or positive shall result in a similar response with high-risk aversiveness and conservative decision-making if the emotion has an avoidance motivation.

6.2 P1b: The heightened risk aversiveness associated with fear is caused by certainty appraisals

Fear, according to the Smith and Ellsworth 1985 model, is very uncertain (Smith, & Ellsworth, 1985). This means that fear would cause investors to act on their beliefs more conservatively. This is because fear is strongly associated with uncertainty appraisals which cause conservative decision making. Furthermore, emotions like anxiety, which in this context are synonymous to fear, behave in the same way. Therefore, any emotion whether it be negative or positive shall result in a similar response when they cause investors to act risk-averse or with high uncertainty.

6.3 P2: People feeling anger will sell faster than people without emotions if an attractive alternative is presented, and slower to sell if there is no alternative

According to previous research anger causes investors to be more rash and hasty with their decisions. This, according to the model, is caused by certainty appraisals. When an attractive alternative is presented, like a stock better than the one that is currently held, angry investors will see an alternative that is more attractive and will be much more certain that that stock will outperform the one they have, causing them to sell quickly. Furthermore, when there is no alternative they will hold out on the stock certain that it will get better. People feeling anger will sell faster than people without emotions if an attractive alternative is presented, and slower to sell if there is no alternative.

6.4 P3: Surprise will lead to temporary inaction, whether the news is positive or negative

Surprise is measured to be one of the most uncertain emotions (Smith & Ellsworth, 1985). Surprise leads to

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temporary inaction because it has a very high uncertainty appraisal. You are so uncertain about what is happening that you will not have the confidence to make a decision. Therefore, based on the level of certainty in any emotions causes a change in investor action. As seen here, very high uncertainty causes inaction while regular uncertainty would cause less rash decisions-making, but not inaction.

7. Conclusion

Emotions have a profound impact on investment behaviors; however, to date, only a small subset of emotions have been included in these analyses. There are several gaps in the literature, including only a subset of emotions being studied thoroughly and contradictory findings in some papers. To address this, a model of investor behavior affected by emotions was created, and offered propositions to help future researchers fill this gap. As mentioned prior, fear, anger, anxiety, and happiness have been studied in almost all papers on the subject. One major focus for future research might be on other emotions relevant to investing like sadness, disgust, and surprise. Further research should focus on certainty appraisals as well as approach and avoidance motivations when considering these positive and "obscure" emotions.

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