

Overconfidence Bias in Finance: A Double-Edged Sword

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Abstract: In the realm of financial decision-making, cognitive biases often challenge the ideal of rationality, with overconfidence bias being particularly significant. This bias, where investors or institutions exaggerate this information and ability to forecast presents a double-edged sword: it can drive innovation and risk-taking but can also lead to folly and financial disasters. Using a theoretical framework based on behavioral finance, this study examines how overconfidence is manifested in three contexts: individual stock trading, company mergers and acquisitions (M&A), and cryptocurrency markets. This paper also provides effective methods to prevent overconfidence bias including promoting financial literacy, supporting analytical thinking, and fostering a proper sense of self-awareness among corporate managers and investors. The findings reveal that recognizing and limiting overconfidence is crucial not just for personal achievement but also for overall market stability. By integrating optimism with realism, financial agents can make more informed and responsible choices in accordance with long-term goals.

Keywords: Overconfidence bias, behavioral finance, financial decision-making, stock trading, mergers and acquisitions

1. Introduction

Financial decision-making sits at the intersection of reason and human psychology, often revealing a tension between rational thought and cognitive shortcuts. In environments characterized by uncertainty—such as stock markets, corporate boardrooms, and decentralized crypto exchanges—individuals and institutions frequently resort to heuristics, or mental rules of thumb, to simplify complex information processing [1]. While these shortcuts can facilitate quicker decisions, they also introduce systematic cognitive biases that deviate from the neoclassical economic assumption of perfect rationality.

Among these biases, overconfidence stands out as a particularly corrosive force. It possesses a dual nature. It can foster innovation, entrepreneurial spirit, and risk-taking, driving growth and advancement in various sectors. On the other hand, overconfidence can lead to disastrous financial decisions and market crashes, as decision-makers may overestimate their abilities and knowledge.

This paper explores the dual nature of overconfidence bias in financial decision-making, examining its role in driving innovation and causing financial disasters. By empirical studies and case examples, this study aims to highlight strategies for mitigating its negative effects while leveraging its positive potential. This research offers insights into the psychological factors influencing financial decision-making and underscores the importance of integrating behavioral insights into finance practices and education, promoting more informed and sustainable choices.

2. Theoretical framework

Overconfidence bias refers to the overestimation of knowledge, predictive accuracy and control over unfolding effects. According to Kahneman and Tversky, overconfident individuals perceive themselves as superior and believe their predictions are more accurate than they actually are [2]. This bias leads individual investors to believe they can "time the market," and thus they trade excessively, which lowers returns. Corporate managers, bolstered by unwarranted overconfidence in their strategic competence, undertake ill-fated mergers and acquisitions (M&A) that destroy shareholder value. Even in the most dynamic markets like cryptocurrencies, retail investors succumb to speculative frenzies, confusing volatility with opportunity. The bias is not always ruinous; however, confidence is necessary for entrepreneurial risk-taking and market liquidity. The challenge lies in distinguishing healthy confidence from paralyzing overconfidence, a distinction too easily lost in the dynamics of psychological biases and stock market mania [3-4]. This paper explores overconfidence bias through three key areas where its impact is most pronounced.

3. Impact of overconfidence bias in financial decision-making

Empirical work, such as those by Barber and Odean on overtrading and Malmendier and Tate on CEO hubris, approximates its expense in the language of returns and firm value [5]. These examples address a paradox: while financial markets compensate for boldness, they punish for arrogance in supposing one cannot ever make mistakes.

3.1. Stock trading

Overconfident investors believe that they are more informed or capable and hence make avoidable trades, leading to a poor record. Barber and Odean made a classic contribution towards overconfidence affecting the investment record through an investigation into individual investors' trades. The study, which tracked data on over 35,000 households from 1991 to 1997, discovered that the majority of active investors performed better than less active investors. In particular, the most active investors' performance was 6.5 percentage points lower than that of less active traders. There are a number of reasons for this underperformance [5].

First, transaction costs are important. As the volume of trades increases, so do transaction costs, which accumulate over time and erode returns. Second, overconfident investors often engage in poor stock selection, believing they possess superior stock-picking abilities. This leads to speculative trading based on insufficient information. Finally, mistakes in market timing are also a cause of the detrimental influence of overconfidence. Investors attempt to "time the market" by buying when they perceive prices to be low and selling when they believe prices are high. However, this is counterproductive, since market timing is very difficult to accomplish successfully, with investors sometimes buying high and selling low, the reverse of what they're attempting.

Overall, the research of Barber and Odean underscores that overconfident trading tends to lead to lower net returns. The implication of this finding is that overconfidence negatively affects the investment performance of individual investors.

3.2. Corporate decision-making and mergers & acquisitions

Overconfident managers overestimate their ability to make mergers and acquisitions (M&A) successful. This often manifests in inflated expectations of potential synergies and underestimation of the integration challenges. This overconfidence is likely to appear in the form of paying high premiums for takeovers, which in turn leads to a huge erosion of shareholder value. The impact of

overconfidence in M&A transactions is extensive, affecting not only short-term financial outcomes but also the long-term viability of the business [6-7].

One of the early works elaborating on such a notion includes a path-finding article from Malmendier and Tate, which investigates the influence of CEO overconfidence on the performance of M&A. Their findings reveal a startling reality: overconfident CEOs are 65% more likely to acquire than their non-overconfident counterparts [8]. Furthermore, the overconfident CEOs overpay for their target acquisitions, and the market reaction to the acquisition is significantly more negative compared to non-overconfident CEOs. This form of evidence illustrates the actual price of overconfidence, not just at the decision-making level but also in its wider implications in the market.

3.3. Cryptocurrency markets

The onset of cryptocurrencies in the 2010s presented a new and risky sandbox for overconfidence bias. Individual investors, largely driven by the promise of instant wealth through stories of early Bitcoin tycoons, ran into cryptocurrencies like Bitcoin, Ethereum, and meme coins like Dogecoin. The majority of these investors made investments without even a fundamental understanding of blockchain technology, market fundamentals, and the inherent risk factor involved in cryptocurrencies. Overconfident investors, however, believed that they could weather through outlandish price action and protect themselves from the risks of such erratic investments. This sense led to risky speculation, whereby investors placed enormous, leveraged wagers without fully considering the risk.

This excess confidence was not only theoretical but also reflected in actual trading behavior. A 2022 study by Kaplanski et al. found that retail traders traded 40% more than institutional traders yet underperformed by over 80% due to poor timing and high transaction fees [9]. The risks of overconfidence were underscored with a vengeance in the catastrophic crash in cryptocurrency prices between 2021 and 2022. Cryptocurrencies had hit all-time highs towards the end of 2021, with Bitcoin hitting an all-time high of nearly \$69,000 [10]. This reality clearly demonstrates the disconnection between overconfident trading activity and real, long-term profit in the market.

4. Case studies

The duality of overconfidence is most clearly seen in its consequences. On the positive side, it drives the aggressive choices that drive technological innovation and market manias; on the negative side, it fuels speculative bubbles and speeds corporate failures.

4.1. The Dot-Com Bubble

Overconfidence bias causes an important contribution to investor attitude, creating undue trading and susceptibility to market bubbles.

The late 1990s witnessed the Dot-Com Bubble, characterized by a geometric explosion in the values of internet shares. Investors, driven by mad optimism and potential for new technology, bet on technology stocks with little research and no consideration of the intrinsic value of the companies. The Nasdaq Composite index, led by technology stocks, illustrates the dot-com bubble's formation and implosion in graphical presentation. The phenomenon takes place from 1995 to March 2000 with the rapid growth, where the Nasdaq index surged from below-1000 points to over 5000 points, capturing the optimism and belief of the market on the Internet business potential. The precipitous fall was seen by the virtual 77% collapse of the Nasdaq after the bubble had burst, wiping out billions of dollars' worth of market capitalization and inflicting humongous losses on numerous investors [11].

This dramatic boom and bust are a textbook case of the dangers of collective overconfidence. Money flowed into dot-com companies with untested business models in hopes that the economy of

the web would yield returns unseen by the earth. But the market correction that followed made the harsh reality clear that most dot-com companies were not profitable, and a considerable number of them ultimately closed shop. The bubble's burst was a cold wake-up call to the danger of over-optimism and speculation. Therefore, It is crucial to acknowledge and correct this bias, not only for the individual investor seeking to maximize his/her returns but also for the stability and sanity of the overall financial system. By acknowledging and being masters of the overconfidence effect, investors will make more rational, disciplined decisions, and investment outcomes will be more consistent and sustainable.

4.2. The AOL-time warner merger

One well-publicized real-life example of overconfidence leading to M&A failure is the disastrous 2000 merger between AOL and Time Warner, one of the biggest corporate failures in history. AOL was then the leading internet service provider, and Time Warner was an old-media giant. The \$165 billion deal was first announced as a visionary effort to blend old media with the new age of the web. But the deal then became a cautionary tale about how hubris can ruin even the most well-positioned corporate attempts [12].

AOL had major criticisms for the reason why its merger with Time Warner had failed. One such criticism is the overestimation of synergies. The managers oversold the synergies to be achieved in merging AOL's online properties with Time Warner's offline media properties. They believe that the two together will provide a new competitive advantage. But they did not realize that the market for online-based media was weaker than expected and that bringing offline media onto online platforms was much more challenging than expected. The second is culture shock. The corporate cultures of the two companies are very different, and the merger has a massive integration challenge. Conflict of cultures lies at the basis of inefficiencies and operation issues, and it becomes increasingly difficult to bring harmony in organisations towards a shared vision. The third one is integration of technology. The unification of AOL's Internet-based infrastructure with Time Warner's more traditional media platforms also turned out to be more challenging than anticipated. This caused nasty technical problems, which further resulted in the synergies expected not materializing [13].

The legacy of the AOL-Time Warner merger stands as a chilling reminder of the danger of hubris in M&A. It underscores the importance of realistic assessment of potential synergies, the necessity of thorough due diligence, and the necessity to listen to culture compatibility in entering into such high-risk corporate transactions [13]. Lastly, this case demonstrates how hubris by the management, brought about by excessive confidence, can lead to disastrous financial consequences. It stresses the need to balance confidence with humility and meet mergers and acquisitions with a realistic understanding of their difficulties and perils [6].

4.3. The 2021–2022 cryptocurrency crash

The cryptocurrency market of 2021-2022 saw Bitcoin lose over 75% of its value within a few months [14]. There were several reasons behind this abrupt plunge, a classic case of the price of hubris in the crypto sphere. A few investors participated in a speculative frenzy during the bull run, pursuing "meme coins" and non-fungible tokens (NFTs) without sound fundamentals, i.e., utility or cash flows. The focus was on speculative hype and not on investment value, fueled by social media and influencer celebrities. This absence of respect for the intrinsic value of assets amplified the volatility in the market, paving the way for a correction when the speculative bubble burst. The second main reason was the abuse of leverage. Over-leveraged traders had believed that they could amplify their profits by trading on margin, with exchanges like FTX offering leverage of up to 100x. But when

market sentiment turned around, these highly leveraged positions turned into huge losses instantly, with most traders being forced to close out their positions [14].

These issues were aggravated by a general underestimation of the regulatory threats. The majority of crypto investors dismissed threats of rising regulations, believing that the decentralized nature of cryptocurrencies would place them beyond the government's reach [16]. This made them overconfident, and thus they were not ready for the regulatory changes that did eventually occur, further destabilizing an already unstable market [14].

After this failure, over \$2 trillion of market capitalization was lost, and numerous retail investors had gigantic losses [14]. The most significant lesson is that overconfidence is likely to happen even in as technologically advanced and decentralized as they are, cryptocurrencies. Independent of the level of sophistication in the underlying technology, human psychology, and to an even greater extent overconfidence bias, are a key driver of market behavior and a cause of systemic risks [15]. In simple terms, overconfidence bias plays a significant and widespread role in financial decision-making, extending right down to individual investors and business managers.

5. Strategies for mitigating overconfidence bias

The cognitive bias, whereby the person will overestimate their expertise, knowledge, and ability to predict outcomes, will usually lead to irrational and detrimental financial decisions. Thus, not only does overconfidence skew personal judgment but it also undermines the stability of the broader financial system. Detection and management of overconfidence biases are the secrets to stable and sane investment returns [16].

For retail investors, it means practising prudent trading by giving importance to extensive analysis, risk sensitivity, and cost of transaction. Prudent, well-informed investment making is the key to counteracting the negative influence of overconfidence. For business executives, exercising caution in making M&A transactions is a prerequisite. This includes conducting extensive due diligence, realistically assessing synergies, and judging cultural fit to avoid costly mistakes [13]. Moreover, creating a culture of constant learning and self-knowledge in personal and organizational settings can counteract the adverse effects of overconfidence and lead to better decision-making. In real life, confidence is actually a prerequisite to making bold financial choices and fostering innovation, but caution must be exercised not to lose equilibrium in indulging in too much overconfidence [17].

By acknowledging the prevalence of overconfidence bias and taking appropriate measures to counter its effect, investors, traders, and entrepreneurs can perform better in the financial arena. This not only leads to improved financial returns but also guarantees the stability of the overall financial system. In this manner, they can make their decision prudentially, on realistic expectations, and on a comprehensive understanding of the risks involved.

6. Conclusion

This paper examines the double-edged sword of overconfidence bias in finance. By combining theoretical models and empirical case studies, it demonstrates how overconfidence can simultaneously be both a driver of innovation and a cause of financial misperception. From individual investors over-trading on delusions, to CEOs orchestrating massive M&A deals on overly optimistic assumptions, overconfidence distorts risk perceptions and control illusions, all too often with costly consequences.

To reverse the debilitating effect of overconfidence necessitates a wide strategy. For people, this involves widening self-perception, adhering to evidence-based actions, and maintaining vigilance for behavioral pitfalls. For organizations, it involves embedding risk assessment processes, promoting executive team diversity in decision making, and cultivating humility at the top leadership levels.

Policy-makers and educators need to emphasize behavioral finance as the key ingredient in financial literacy programs to foster more realistic expectations of markets and individual ability.

Nevertheless, this paper does not lack shortcomings. It depends mostly on historical case studies and secondary sources and lacks primary data and quantitative models. Future research could be more improved with experiments mimicking overconfidence in experimental settings or with real-time analysis of data. Cross-cultural study of overconfidence bias could also reveal how norms of culture influence financial behavior and judgment.

In conclusion, overconfidence bias, as common as it is, is manageable. By understanding its workings and learning how to find a balance between confidence and prudence, institutions and investors can make informed choices and assist in creating a more stable and sustainable financial environment.

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