
The Fear of Missing Out (FOMO) Effect in Cryptocurrency Trading: Analyses of Mass Behavior and Its Consequences in the Era of Unpredictable Extreme Phenomena

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Abstract:

Purpose: This study aims to investigate psychological and behavioral mechanisms and their impact on the cryptocurrency market. The analysis is carried out through the prism of studying the FOMO phenomenon.

Design/Methodology/Approach: The author describes the research methods used, including analysis of market data from major cryptocurrency platforms (e.g., Binance, Coinbase), sentiment analysis on social media (e.g., Twitter, Reddit), as well as surveys and interviews with individual investors. Statistical tools and econometric modeling were used to identify correlations between investor emotions and cryptocurrency price movements.

Findings: It was noted that sudden increases in cryptocurrency prices often trigger the FOMO effect, which leads to mass purchases and further price drive. A clear correlation was shown between the FOMO effect and the so-called unforeseen extreme phenomena, manifested by an increase in FOMO intensity during periods of dynamic price changes. Sentiment analysis indicates a strong correlation between positive media messages and price increases. In addition, survey studies confirm that it is mainly individual investors who make decisions under the influence of emotions, not guided by rational analysis.

Practical Implications: The FOMO effect contributes to the creation of speculative bubbles that can end in violent crashes, ultimately causing significant losses for investors. However, in the short term, i.e., before the potential bubble bursts, the FOMO effect stimulates growth by encouraging investors to make behavioral decisions. The analysis also shows that mass impulsive decisions can lead to unpredictable and not always unfavorable financial consequences for investors.

Originality/Value: This research contributes to the growing body of literature on behavioral behavior in one of the most emotion-prone markets, cryptocurrencies.

Keywords: FOMO effect, cryptocurrency trading, mass behavior analysis, emotional investing, behavioral finance.

JEL Codes: D53, G41, C93, E44.

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1. Introduction

In an era of dynamic, least predictable economic and geopolitical environment in decades, the rapid development of the cryptocurrency market is observed. This very young market began in 2009 with the appearance of Bitcoin, created by an anonymous creator with the pseudonym Satoshi Nakamoto. It was the first decentralized payment system based on blockchain technology, which enabled secure and anonymous transactions without the need for intermediaries.

In the following years, other cryptocurrencies appeared on the market, such as Ethereum, Ripple and Litecoin, which contributed to the dynamic development of the ecosystem. This development was driven by both technological advances and the growing interest of investors and the emergence of modern blockchain applications in various industries. Currently, the cryptocurrency market is one of the fastest growing segments of the financial sector in the world.

The value of global cryptocurrencies, such as Bitcoin or Ethereum, according to available data for 2023, is estimated at around 2 to 3 trillion US dollars, which indicates great interest from investors and the growing adoption of these assets. Today's global cryptocurrency market capitalization is about 3.44 trillion USD.

Currently, the market capitalization of Bitcoin (BTC) is 2.16 trillion USD, which means Bitcoin's dominance at 62.92%. Emotions and psychological factors play a key role in shaping investor behavior in this market, which directly translates into both volatility and capitalization of the entire market. One of the most common and at the same time disturbing phenomena is the FOMO effect (Fear of Missing Out), or the fear of losing an opportunity, which leads investors to impulsive decisions.

In this article, the author examines and describes the mechanisms of this phenomenon, its impact on mass behavior in the cryptocurrency market, and the potential financial consequences that may result from it for both individual investors and the entire digital economy. This analysis allows for a better understanding of how emotions shape the market in a dynamic economic environment and what challenges this poses for cryptocurrency market participants.

By examining the correlation between Fear of Missing Out and extreme economic events, including black swans, this study aims to contribute to the existing literature on the importance and scale of emotions in financial market decision-making. The methodology used includes a comprehensive analysis of data from major cryptocurrency exchanges, including Binance, Coinbase Pro, and Huobi.

The novelty of this study is highlighted by its focus on the most popular cryptocurrencies in the scope of the phenomenon under study. The study defines its scope by focusing on individual and institutional investors, while acknowledging the limitations of the availability of comprehensive data.

The basic research questions that were formulated as:

- What are the mechanisms that cause FOMO among cryptocurrency traders?
- How does mass FOMO behavior affect the cryptocurrency market, especially in the context of extreme phenomena (e.g., sharp declines, increases)?
- What are the long-term consequences of this behavior for the market and its participants?

The main goal was to investigate psychological and behavioral mechanisms and their impact on the cryptocurrency market.

The theoretical framework is based on behavioral finance in the area of investment decision-making processes. This research not only addresses the current issues of monitoring and analyzing the fastest growing separate segment of the financial market based on blockchain technology, but also emphasizes the need for further exploration of the importance of shaping the catalysts of decision-making processes in the investment perspective.

2. Literature Review

Behavioral finance, with a particular emphasis on practical aspects of shaping mechanisms in decision-making processes, has gained significant attention in recent years, driven by the growing awareness of their impact on the outcomes of investment decisions. A growing body of literature in this area supports the view that knowledge of the specifics of emotional phenomena (including FOMO) in decision-making processes has a measurable impact on financial results.

The effect of mass behavior differentially driven by emotions, including herding behavior, has been known in the literature for decades. For example, Lux (1995) identified a simulation model showing that mass behavior can lead to the formation and bursting of stock market bubbles. In this model, he assumed that investors make decisions based on their own judgments and the influence of other market participants' behavior, which can lead to mass behavior and deviations of prices from their fundamental values.

The model showed that such behavior can cause excessive prices to form and then burst rapidly, reflecting the phenomenon of speculative bubbles. In this paper, Lux analyzes the dynamics of financial markets, showing how collective behavior can lead to the formation and bursting of bubbles, and his simulation model has become an important tool in the study of market behavior.

A little earlier, in 1992, Bikhchandani, Hirshleifer, and Welch published "A Theory of Fads, Fashion, Custom, and Cultural Change" conducted research on the impact of herding on the formation of speculative bubbles. This publication is one of the

most influential articles in the field of behavioral economics and market theory because it formalizes the mechanisms that can lead to the formation of speculative bubbles as a result of the herd effect, i.e., imitation of the decisions of other market participants with limited information.

Speculative bubbles, i.e., sudden, fundamentally unjustified price increases that ended with sharp declines in the context of the importance of herd behavior, were also the subject of Sornette's research in 2003, who as part of the publication "Why Stock Markets Crash: Critical Events in Complex Financial Systems" discusses the role of mass behavior and positive feedback mechanisms that can lead to violent financial market crashes.

A very interesting area of research in the field of the influence of mass mechanisms, including the effect of fear of losing an opportunity, which leads investors to impulsive decisions, is the dynamically developing cryptocurrency market. This market has become the subject of numerous scientific studies in recent years.

The cryptocurrency market, due to the lack of regulation and high speculative nature, is particularly susceptible to emotions, FOMO and mass phenomena, which makes it a unique area of research in the context of investment psychology and the dynamics of financial markets.

Baur, Hong, and Lee (2018) in their research have clearly shown that cryptocurrencies are characterized by high volatility caused by investors' emotions and mass behavior effects. Dwyer's (2015) research has been carried out in the same direction, reviewing the specifics of the cryptocurrency market, and showing that the lack of regulation and decentralization favor impulsive behavior and the formation of bubbles.

This fact is also confirmed by the research of Fang, Zhang, and Yuan (2020), where it was clearly identified that emotions, FOMO, and mass behavior play a key role in the dynamics of the cryptocurrency market. This position was also confirmed by the analyses of Corbet, Lu, Hou, and Hu (2020). As a result of these studies, it was found that emotions and FOMO play a key role in the dynamics of the key cryptocurrency, the Bitcoin market.

The direct links between the FOMO effect and the phenomenon of speculative bubbles were confirmed in the works of Baek and Hwang, (2019). Their research not only confirmed the impact of FOMO on investment decisions in the cryptocurrency market, but also found that FOMO is strongly correlated with impulsive purchases that drive speculative bubbles.

This approach was complemented by the analyses of Kim and Kim (2020), which showed that FOMO is associated with excessive trading, as well as with emotions such as euphoria and panic, which can lead to increased market volatility.

Extreme emotions such as panic or euphoria often translate, especially in the first phase of so-called extreme phenomena (Covid-19, war), into above-average price volatility. This is confirmed by the analyses of Zhou *et al.* (2020).

In a study entitled "FOMO and Financial Decision-Making", they analyzed how the fear of missing out (FOMO) affects investors' decisions. The results suggest that FOMO increases the propensity for impulsive purchases, especially during periods of high market volatility.

The cryptocurrency market, highly susceptible to the emotions of its participants, has also been rapidly gaining popularity in recent years. The main determinant of this popularity was the scale of cryptocurrency price increases, which were unrivaled in the area of financial markets.

This topic was comprehensively examined by Huang *et al.* (2021) in the publication "The Role of FOMO in Cryptocurrency Investment". As a result of the research conducted there, the authors showed that FOMO is strongly related to the influx of investors into the cryptocurrency market, which can lead to a speculative bubble.

What is very important, the literature emphasizes not only the growing significance of the FOMO effect, but also, and perhaps above all, the fact that Fear of Missing Out is becoming more and more common in the digital era, which leads to increased anxiety and fear of missing out on important events or experiences, especially in the context of using social media (Przybyła, 2018).

The importance of social media in building the mass effect as well as the escalation of extreme moods such as panic is also emphasized through the prism of their research by Oberst, Wegmann, Stodt, and Brand (2017).

The FOMO effect can therefore be identified as significant in the scope of decision-making processes carried out today, the vast majority of which are made in reality online with a greater or lesser participation of social networking sites. The potential consequences are therefore multidimensional, providing a foreground for scientific research in this area (Przybyła and Kowalski, 2021).

3. Research Methodology

Scientific study of the FOMO effect in cryptocurrency trading requires a multifaceted approach, combining quantitative, qualitative, and simulation data analysis. It is crucial to integrate knowledge from psychology, economics, market analysis, and sociology to obtain a full picture of the mechanisms and consequences of this phenomenon in the context of unpredictable extreme phenomena.

This study uses a mixed-methods approach to investigate the relationship between the FOMO effect and the occurrence, nature, and scale of unforeseen extreme events

in the cryptocurrency market. The methodology is structured to provide a comprehensive analysis of the interdependencies between the studied phenomena and investors' investment behavior, using both quantitative and qualitative data sources.

In the area of quantitative research, the basic data comes from the database of the largest cryptocurrency exchanges, including Binance, Coinbase Pro, and Huobi. Sentiment analysis and mass behavior patterns were carried out based on data from social media (Twitter, Reddit, Telegram), discussion forums, analysis of trends and patterns of statements.

In the field of statistical and econometric methods, correlation analysis, multiple regressions, time series analysis, principal component models (PCA) were carried out to identify key factors influencing behavior.

In the area of qualitative research, statements, posts and comments on social media platforms were analysed to identify FOMO-inducing content and its impact. The study of historical data and qualitative analyses also covered the specifics of so-called extreme phenomena, commonly considered in the literature as unpredictable.

The rapid price changes accompanying these phenomena were analyzed in the context of answering the question of whether and how the FOMO effect contributed to these phenomena. The publication includes a rich set of scientific sources, industry reports and case studies that support the presented theses and conclusions.

4. Research Results

From the perspective of the analysis of the studied phenomenon, the period of particular interest is the years 2019-2024. It is during this period that we are dealing with key unforeseen phenomena of the last decade, such as the Covid-19 pandemic and the war in Ukraine. Figure 1 shows changes in the prices of Bitcoin and Ethereum as the leaders of the cryptocurrency market.

Figure 1 clearly confirms that in the case of the cryptocurrency market represented by the two main leaders, we have an upward trend in the long term. The positive correlation between these two cryptocurrencies confirms that black swans such as Covid-19 (2020-2023) or the war in Ukraine (which began on February 24, 2022) did not translate directly into the flight of capital from this market (strong price drops). Periods of increased uncertainty were a significant catalyst for the continuation of price increases.

Figure 2 shows the total market capitalization and volume of cryptocurrencies worldwide, resulting from 16,968 cryptocurrencies tracked on 1,307 exchanges. Analysis of the changes in capitalization confirms previous indications that in the

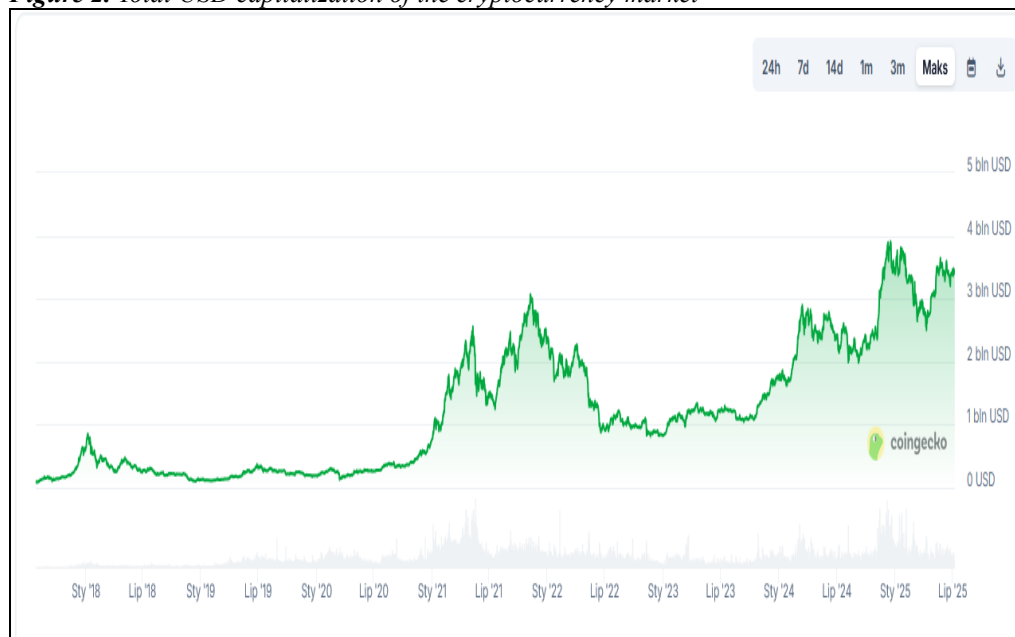
long term, emotions determined by unexpected extreme events translated into increased interest and growth in the cryptocurrency market.

Figure 1. *Cryptocurrency spot price Bitcoin and Ethereum*



Source: Own study based on data from <https://cryptorank.io/price/bitcoin>.

Figure 2. *Total USD capitalization of the cryptocurrency market*



Source: Own study based on data from <https://www.coingecko.com/pl/global-charts>.

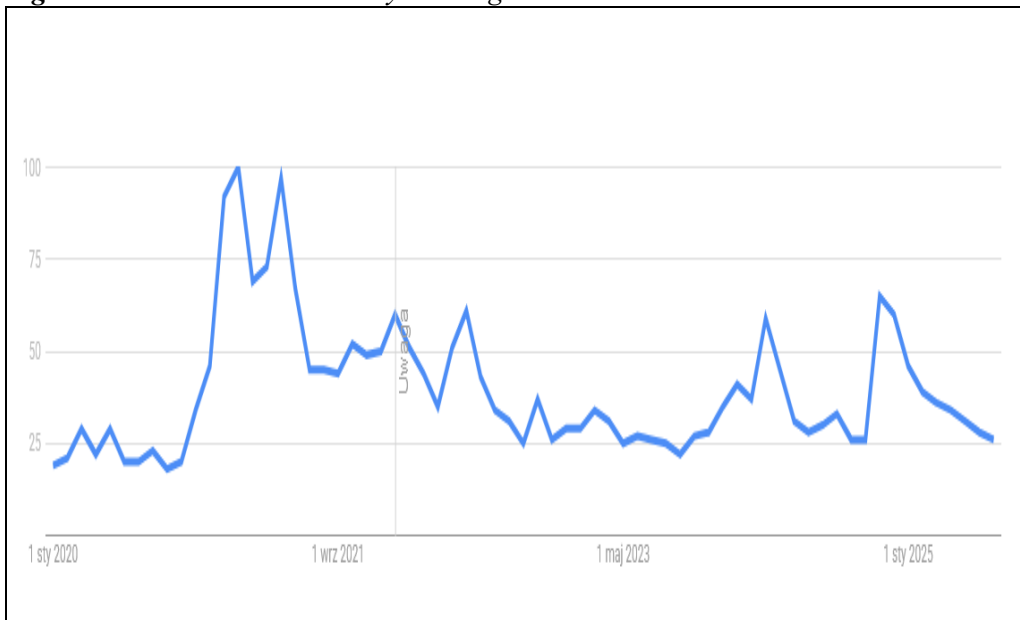
Figure 3. Total cryptocurrency market capitalization compared to Bitcoin and Ethereum



Source: Own study based on data from <https://www.coingecko.com/pl/global-charts>.

Comparing the total market capitalization of cryptocurrencies (Figure 3) with the situation of Bitcoin, it is clear that the analysis of the market leader is a perfectly tailored showcase of the entire market.

Figure 4. Bitcoin search intensity in Google



Source: Own study based on data: <https://trends.google.com/trends/explore?date=2020-01-01%202025-07-07&q=Bitcoin&hl=pl>.

Bitcoin searches in Google over the last few years confirms the strong correlation between the dynamics of the cryptocurrency market development and social media as shown in Figure 4.

The above Figures clearly confirm the clear positive correlation of the FOMO effect with unexpected extreme phenomena. Investors, running away from the fear of losing an opportunity, make impulsive decisions, using the emerging periods of permanent uncertainty to increase their allocation to cryptocurrencies, which in the short term translates into a dynamic increase in prices, and in the long term, into maintaining the trend.

5. Discussion

This study conducted a detailed analysis of the FOMO (Fear of Missing Out) effect in the context of cryptocurrency trading, focusing on mass investor behavior and its consequences in the face of unpredictable and extreme market phenomena. Analysis of data from various cryptocurrency exchange platforms, social media, and surveys allowed us to extract several key results:

1. *Increased FOMO intensity during periods of dynamic price changes* – it was observed that the intensity of the FOMO effect positively correlated with rapid increases in cryptocurrency prices, which led to mass purchases and increased market volatility. Sudden jumps in the value of cryptocurrencies, especially popular ones such as Bitcoin or Ethereum, make investors afraid that they will miss the opportunity to profit, which prompts them to invest immediately. The increase in FOMO intensity during periods of dynamic price changes is a direct result of, among other things, the specificity of the cryptocurrency market in terms of investor structure. This is a market where small individual investors (70-80% of all investors have portfolios worth up to USD 10,000) and new investors (60-70 % of investors) who have been on this market for 2-3 years, i.e., groups most susceptible to emotions, definitely lead.
2. *Reasons for mass behavior* – the dominant factors are uncertainty related to the unpredictability of the market, the influence of social media, and the desire for quick profit. Analysis of statistical data indicated that the appearance of information about large profits or speculative reports caused a wave of emotions and impulsive decisions. Statistical data (company reports: Chainalysis, CoinGecko, Glassnode or industry reports) indicate that about 70-80% of investors treat cryptocurrencies mainly as a speculative instrument.
3. *Consequences of mass behavior* – during periods of extreme market phenomena (e.g., crashes, rapid increases) the FOMO effect intensified, leading to excessive speculation, the risk of price bubbles bursting and

increased systemic risk. Promotions, recommendations and positive information from influencers cryptocurrency on platforms like Twitter, TikTok, and Reddit can significantly increase the feeling that others are making money on cryptocurrencies, which causes and fuels FOMO. Extreme emotions, both euphoria and panic, are often amplified by social media, internet forums, and influencers, which intensifies mass behavior.

4. *The Role of Social Media* – Studies have shown that social media activity, especially on platforms like Twitter and Reddit, has significantly influenced the spread of FOMO and mass investor behavior. Rapid and often emotional market analysis can fuel uncertainty and the desire to quickly enter or exit the market.
5. *Long-term consequences of FOMO for the market and participants* - While FOMO can drive short-term gains and increased market activity through its illusory attractiveness, its long-term consequences often include greater volatility, the risk of price bubbles, and the risk of significant losses for participants. Therefore, it is important for investors to exercise caution and make decisions based on analysis rather than emotion.

The results of the study confirm that the FOMO effect is a key factor shaping mass behavior in the cryptocurrency market, especially during periods of high unpredictability and extreme market phenomena.

The intensification of emotions and impulsive decisions of investors leads to the formation of speculative bubbles, which can end in sharp price drops and market destabilization.

Key implications of these results include the need to educate investors on how to recognize and manage emotions, as well as develop tools to support rational decision-making. Additionally, the role of social media as a source of information and emotions requires further research to understand how to limit the negative effects of mass behavior.

In addition, the results suggest that market regulators should take FOMO into account when designing policies to stabilize the market and counteract excessive speculation. In the face of unpredictable extreme events, such as sharp corrections, it is necessary to develop strategies to mitigate the effects of panic and mass selling.

In summary, understanding the mechanisms of the FOMO effect and its impact on mass behavior is crucial to protecting the stability of the cryptocurrency market and increasing its transparency.

Future research should focus on developing analytical and educational tools that help market participants better cope with emotions and extreme phenomena.

6. Conclusions, Proposals, Recommendations

In conclusion, it should be stated that in the case of the cryptocurrency market represented by the main leaders Bitcoin and Ethereum, the scale and type of emotions in decision-making processes are fundamental. The thesis that it is mainly extreme emotions such as panic or euphoria that often translate, especially in the first phase of so-called extreme phenomena (Covid-19, war) into above-average price volatility as a result of one-way mass investment decisions, has also been confirmed.

Therefore, it is important for investors to be cautious and make decisions based on rational analysis, not emotions. This applies especially to individual investors who are much more susceptible to behavioral impulses. The dynamic development of the cryptocurrency market, and thus the importance and role of emotions in decision-making processes, indicates the need to intensify activities in the field of investor education in the field of market psychology and recognizing the FOMO effect, in order to increase their emotional resilience.

Preventive prevention of irrational investment decision-making should be implemented, for example, by promoting analytical and technical tools that help in making decisions based on data, not emotions. In a broader scope, especially in the area of institutional investors, this means creating platforms and solutions supporting automatic risk management, such as stop- loss or trailing stop.

Another important element is supporting scientific research on the impact of emotions on the behavior of investors in cryptocurrencies, in order to better understand the mechanisms of FOMO.

The system environment is important in this respect - for example, market regulations, which should include education of market participants and the introduction of mechanisms limiting panic and speculation.

Moreover, cryptocurrency platforms can implement warning functions, informing users about high volatility and the potential risk of emotional decisions. An excellent example of a system solution to increase market functionality, ensure investor safety and consolidate the position of cryptocurrencies within traditional financial institutions was the approval of the first cryptocurrency derivatives, such as bitcoin futures, by American regulatory institutions, including the Securities and Exchange Commission (SEC) and the Commodities Futures Trading Commission (CFTC).

For example, the CFTC approved the first bitcoin futures contracts on the Chicago Mercantile Exchange (CME) in December 2017. Regulated markets have allowed for better control over the cryptocurrency market, which is important for ensuring stability and protecting market participants.

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