Happier than Ever: The Role of Public Sentiment in Cryptocurrencies, Meme Stocks, and NFTs

Abstract

Investor sentiment is a major factor in financial markets. Long before the GameStop short squeeze and the market-crashing tweets of Elon Musk, social media signals demonstrated credible forecasting, and potentially, manipulative potential in the studies of stock markets and, later, cryptocurrencies. This chapter summarizes the existing research on sentiment in stock markets, cryptocurrencies, and meme stocks and connects it to the productive role of affect in political activism, as conceptualized by Chantal Mouffe. It then proceeds to the current state of the NFT community, with its almost euphorically positive mood. It appears that the valuation of meme stocks and NFTs relies on similar and, sometimes even the same, mechanisms. The collective agreement about their price is guided by the positive sentiment, openly expressed and easily measured online. However, instead of "disrupting the art scene," an overwhelming positivity in the discourse regarding some assets (e.g., NFTs) has channeled into celebrity culture. With these affective dynamics, the chapter then relates these moods to the concept of affective solidarity.

Keywords: affect, art, digital economy, Mouffe, NFT, positive populism, retail investors

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Happier than Ever

The Role of Public Sentiment in Cryptocurrencies, Meme Stocks, and NFTs

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2021: Year of the NFT?

In March 2021, the artist named Beeple publicly established the potential value of NFTs by selling the digital artwork *Everydays: The First 5,000 Days* for $69 million at Christie's to his regular buyer and business partner Metakovan, who unexpectedly outbid another crypto billionaire Justin Sun. From the perspective of the art market, although the value of *Everyday* can be described as "a combination of its perceived rarity plus its perceived demand plus its perceived authenticity" (Charney, 2021), the simple business motivation of (quite literally) raising the stakes should not be discarded either (Castor, 2021). Just as with traditional art, financial value makes blockchain-based art worthy of investment, one might say; and again, just as with modern art, it opens endless opportunities for money laundering; complete with new possibilities to extract more money from buyers provided by both "smart" and "not-so-smart" contracts (see Lydiate, 2021 on possible abuse of "smart contracts" in digital art sales). As Jonathan Jones, the art observer for Guardian, wrote, "a purer form of capitalism has never existed" (Jones, 2022).

The art world has always been a strange place, but that is the object of other studies (see, e.g., Feigenbaum & Reist, 2013 on provenance of traditional art in contemporary society regardless of blockchain; see Frey, 1997; David et al., 2013 on art as an investment vehicle). However, we also see the value of NFTs peaking in such projects as *Bored Ape Yacht Club* (BAYC), a limited collection of tokens that has come to symbolize wealth and celebrity status of its holders online. The beginning of 2022 was marked by the rap star Eminem

purchasing a BAYC token, which demonstrates that the celebrity culture has now begun a significant embrace of NFTs. Consequently, the purchased Bored Ape was used in the music collaboration with Snoop Dogg, himself an early adopter of NFTs (Eminem & Dogg, 2022), which may have been the true motivation behind the purchase. Eminem has never expressed interest in blockchain innovations before, unlike Snoop Dogg and many notable hip-hop stars, ranging from Akon to Jay-Z (Chan, 2022) and Ye (Napolitano, 2022).

Predictably, the interest of individual investors in NFTs surged and was fueled by such news. Google Trends data shows an increase in interest after Beeple's sale in March 2021 (see also Figure 3.1), which quickly surpassed the previous major peak of interest in NFTs in November 2017, which was due to the global launch of the first casual blockchain-based game *CryptoKitties* (Axiom Zen, 2017). In December 2021, public interest in NFTs surpassed interest in Ethereum, which is still one of the major blockchain and cryptocurrency platforms that also holds popular NFTs such as CryptoKitties and BAYC. This increased public attention was driven by a particular type of positive fear, or FOMO ("fear of missing out"). New and emerging research suggests that FOMO is one of the most important factors for getting into cryptocurrency trading (Delfabbro et al., 2021) as well as novel and increasingly risky projects such as ICOs (Karkkainen, 2021)—Tatja Kärkkäinen even describes FOMO as a particular type of investor's sentiment (see Chapter 9 of this volume). Even though cryptocurrency trading had a very eventful and rather rough 2021, the general public seems to have become much more interested in individual investment opportunities, or at least become aware of them, ever since the GameStop short squeeze in January 2021 (see van Kerckhoven & O'Dubhghaill, 2021 for a detailed timeline)—and some might say that such opportunities are rarely connected to any kind of fundamental value in the real world (see, e.g., Umar et al., 2021a; Libich & Lenten, 2021).

Some authors believe that this event signifies radical transformation of the market for individual investments that has taken place in the years after the financial crisis of 2007–2008. For example, Schroeder and Zwick explain this transformation through consumer adoption of "FinTech," which they describe as "digital advances in financial activities" (Schroeder & Zwick, 2021). So called DeFi, which means "decentralized finance" (see

Chohan, 2021b), is the next advance of finance technologies that incorporates a variety of blockchains and cryptocurrencies, and often targets individual investors at the base level of its, quite frequently, rather "pyramidal" structures. On this new smorgasbord of financial offers, NFTs are among the most appetizing desserts; even if many of them look incredibly ugly, and one might say: rotten even before they were "baked." In yet another ironic turn of things, GameStop, the company now best known due to the aforementioned "short squeeze," has recently launched its own NFT marketplace (Needleman, 2022).

The aim of this chapter, then, is to explain the surge of non-fungible tokens, or NFTs, in the recent past, as a part of YOLO capitalism. To that end, it looks at the changing role of *affect* and *mood*, as described by Mouffe (2018), in the spaces of stock trading, cryptocurrency trading, and, recently, in NFTs. Affect is emotionally charged attitude toward an object or a person. Unlike more universal feelings and emotions, the affective state is only characteristic of sentient beings, where it involves the mind and not just the body. Affective investment decisions are made based on subjective feelings, which affect or override logical reasoning that comes from the available information. Studies of affectionate, or "sentimental" (Baker & Wurgler, 2006) investors may involve measuring interest, sentiment, and mood. Measuring interest provides researchers with the simplest one-dimensional analysis of subjective attitude (e.g., changes in online search behavior).

Sentiment is the next level of complexity: it is typically described in binary categories such as "positive/negative" or "fear/greed." To make it even more complex, we speak of mood when there are more than just two categories for different feelings and emotions: for instance, working specifically with public sentiment expressed in social media, Bollen et al. measure six mood dimensions: calm, alert, sure, vital, kind, and happy (Bollen et al., 2011). However, "mood" and "sentiment" sometimes can be used interchangeably. Long et al. apply five categories—angry, fear, happy, sad, and surprise—in their analysis of Reddit sentiment during the GameStop short squeeze (Long et al., 2021). All these are also general examples of emotions, but their social dimension allows analyzing them through a wider affective theoretical prism.

The perspectives of affect and mood are applied in this chapter to three interconnected phenomena: sentiment and mood in stocks and cryptocurrency trading (examining the existing research in that regard), the public discourse of NFT traders, and the celebrity culture that eventually absorbs both the overwhelmingly positive mood and the financial risks of trading NFTs. The remainder of this chapter is structured as follows. First, the updated theory of political affect in the late 2010s is given treatment. Second, the literature on mood and sentiment in stock trading is examined, with particular attention to the emergent trend of such research in cryptocurrency and NFT trading. Finally, affect, sentiment, investment, and trading of NFTs are connected to celebrity culture, which mirrors and amplifies the overwhelming positivity of the NFT discourse.

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Figure 3.1 Comparison of trends in Google Search related to the topics of non-fungible token, cryptocurrency, and Ethereum from October 2017 to January 2022.

Source: Google Trends.

Affect and Populism in Political Theory

From today's perspective, the financial crisis of 2007–2008 is sometimes interpreted as the crisis of the neoliberal hegemony at large (see also Chapters 11 and 13 in this volume). It may have contributed to new contours in democratic politics of the West as well as the rise of populism, as the influential political thinker Chantal Mouffe argues in her book *For a Left Populism* (2018). Mouffe's work offers an updated theory of political affect that can help consolidate more powerful actors across all of the spectrum of ideological orientations, toward "a collective will that results from the mobilization of common affects in defense of equality and social justice" (Mouffe, 2018, p. 6).

Mouffe describes the political–economic state of Western Europe after the financial crisis of 2008 as a "populist moment" that encompasses a variety of practices against the political and economic consequences of neoliberal hegemony. Economic turbulence is not

seen as a solely destructive power: it opens up new opportunities for everyone. These opportunities emerge regardless of one's place in the established relations of production that were taken for granted before that. Drawing from Laclau (2005, p. 87), Mouffe sees populism as a discursive strategy that polarizes society and positions "underdogs" against "those in power" (Mouffe, 2018, p. 11), or otherwise stated as the "people" and the "oligarchy" (Mouffe, 2018, p. 24). What is often overlooked, in her opinion, is that this rhetoric can be performed both within right-wing and left-wing politics. As this chapter shall explore, this is exactly what is happening with the discourse of decentralization on blockchain.

To disrupt the stagnating political climate of the late 2010s, Mouffe boldly calls for "left populism." In her words, the best answer to hegemony would be to adopt "a populist strategy, but this time with a progressive objective" (Mouffe, 2018, p. 35). The desired state is pluralist, or even "vibrant" democracy, where antagonism of radical political opinions is present and accepted for the sake of giving everyone a voice. In the context of the early 2020s, this image of productive populism is readily applicable to YOLO investors who are the main collective protagonist of this book (their interventions into the hegemonic crisis are thoroughly analyzed in Chapter 13). Interestingly, Schroeder and Zwick notice the same mood of liberation and democratization in the discussion of online investing and day trading in the 1990s (Schroeder & Zwick, 2021).

For better or worse, the same kind of populism simmers in the community of dedicated blockchain adopters today (as well as in the YOLO capitalists writ large), although their initial collective political preferences were cognate to the right-wing discourse (Golumbia, 2016; Chohan, 2017). What is important, though, is that they also represent resistance to the crisis of financial capitalism, albeit through even more extreme, and often utopian, projects of economic liberalism and/or democracy, now on blockchain. Some of these tendencies could adorn a somewhat extremist form, merging with the dark and disturbing side of accelerationism (Land, 2018), transhumanism, and eugenics (Swan, 2019). Still, the idea of financial decentralization and collective action against financial hegemony of traditional forms of capital is just as compatible with left-oriented thinking and feminism (Allon, 2018; Sotoudehnia, 2019). Reflecting on her autoethnographic study at a Canadian

cryptocurrency start-up through the lens of "peer-to-peer work," Maral Sotoudenia confirms that the emerging blockchain ethos promises both an accelerated form of capitalism and its alternative at the same time (Sotoudehnia, 2019). However, and here I draw from Mouffe, such paradoxical configuration should be seen as a productive conjuncture, not as much as a contradiction: "[A]n effective pluralism supposes the presence of an agonistic confrontation between hegemonic projects" (Mouffe, 2018, p. 35).

Mouffe states that in post-democratic times, populist strategies can be used for the common goal of overturning the hegemony—and, as Mouffe implies, replacing it with a different one, although the very possibility of "good hegemony" is beyond the scope of this chapter's discussion (but see Chapters 12 and 13 in this volume). According to her, the objective is to deconstruct or "disarticulate" the established "common sense" (in other words, the ideology) behind the present hegemonic formation and to establish "the nodal points of a new hegemonic social formation" through transformation of the existing social practicing and "instauration" of new ones (Mouffe, 2018, p. 44). This is still in line with the traditional Gramscian agenda (see Chapter 13), but the new ingredient of this social transformation is the shared affect, which is, in Mouffe's perspective, the primary motivator for political action. Not surprisingly, Mouffe brings up the examples of artistic and cultural practices—and we are not surprised precisely because these fields are also the main testing grounds for blockchain projects now. In addition to that, one is obliged to go further and ask: what if the radical affective transformation is already happening in technology and finance?

A Pandemia of Fear and Greed: Sentiment, Mood, and Interest in Finance

The role of emotions in the stock market has been consistently observed, measured, and found meaningful in a large body of academic studies that introduced a variety of affective variables, from the level of noise on the physical trading floor (Coval & Shumway, 2001) to sentiment on social media such as Twitter (Bollen et al., 2011). Baker and Wurgler (2006, p. 1647) provide one of the most convincing long-term observations on the stock market and

how it is affected by investor sentiment (Baker & Wurgler, 2006). They conclude that stocks that are difficult to arbitrage or to value are most affected by sentiment, such as small or new companies. If we assume that cryptocurrencies do not have fundamental value, sentiment will be particularly important in trading them.

One of the most cited theoretical studies here comes from Yermack (2013), who acknowledged the extremely high volatility of Bitcoin and argued that it would be uncorrelated with traditional currencies (Yermack, 2013). In subsequent studies of Bitcoin volatility, authors come to the conclusion that, unlike stock markets, "the Bitcoin market returns are mostly internally driven by market participants" (Baek & Elbeck, 2015). This study found Bitcoin "26 times more volatile than the S&P 500 Index" within the time period from July 2010 to February 2014. It should be noted that it is generally agreed, and has been proven later on, that Bitcoin price is somewhat correlated with the S&P 500 Index (e.g., Baur et al., 2018): a point that became even more evident over the course of 2022. Common knowledge suggests that tech stocks are prone to higher risks of the same kind as cryptocurrencies (e.g. Pan, 2022).

Our social experiences suggest that affect is contagious: sentient beings tend to pick up the mood from the ones with whom they communicate. This "virality" can be measured in blockchain studies as well. Drawing from investor interest, an interesting quantitative "epidemic" model has been suggested by Phillips and Gorse: they have demonstrated correlation between user activity on Reddit and prices of Bitcoin, Litecoin, Ethereum, and Monero. An unconventional technique was used, which had been previously applied to predicting influenza outbreaks, to determine whether the market is in an "epidemic state," where "entry into an epidemic state is considered a buy signal, and exit from the epidemic state is considered a sell signal (to close the position and no longer hold the asset)" (Phillips & Gorse, 2017). Today, it would be extremely interesting to see similar studies on r/WallStreetBets and the GameStop incident, and future research should pursue this line of inquiry (see also Chapter 7 in this volume). The sentiment about NFTs would be a more difficult subject to tackle, though: most of discussions around them happen in chat rooms on

Discord, often on closed servers. It is still possible to track "virality" of NFTs across public blockchains; a dataset for potential further analysis can be found in Nadini et al. (2021).

So far, it looks as if affect, sentiment, and mood all may contribute more to the value of crypto assets than any other factors. Both proponents and opponents of blockchain technologies agree that this new class of assets demonstrates different behaviors and factors of value as compared to previous financial products. Still, as blockchain studies are relatively young, they need to rely on methods and results of previous studies of sentiment and stock prices, which may limit the potential for discovery. To illustrate this point, I here present the list of 30 peer-reviewed articles that have been most frequently cited in research of sentiment and mood in relation to cryptocurrencies and blockchain as of December 2021. This list has been obtained the Web of Science database, to which the following query was applied:

> *(("blockchain" OR "bitcoin" OR "cryptocurrenc*" OR "altcoin*") AND ("sentiment*" OR "mood*" OR "emotion*"))*

From the obtained 163 results, one paper was excluded, because it appeared to be a very thoroughly developed book review. Thereafter, all references from 162 papers were extracted, and different references to the same papers were unified across the sample. The resulting selection of references was limited to 30 most cited papers which were cited at least 12 times within this selection of 162 papers (see Appendix 1)

To find patterns in co-referencing, these 30 papers were mapped on a graph by use of Multidimensional Scaling PROXSCAL Method in IBM SPSS Statistics (version 26).

A distance of 0.30 or less was used to determine clusters of co-cited and interconnected research (weak connections). A distance of 0.25 was used to determine strongly co-cited articles that formed the core of such clusters or chains within the knowledge structure (strong connections). This methodology has been polished in a number of bibliometric studies on marketing literature (e.g., Chabowski et al., 2013; Samiee & Chabowski, 2021).

Visualization of co-citation patterns has resulted in the knowledge structure presented in Figure 3.2.

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Figure 3.2 The map of knowledge structure related to sentiment and Bitcoin/blockchain. Thin lines correspond to weak connections (0.30), thick lines correspond to strong connections (0.25).

Source: Author's research.

The most cited, but rather weakly co-cited, article is, of course, the initial white paper for Bitcoin by its primary developer known under the name of Satoshi Nakamoto (Nakamoto, 2008). This paper creates the center of the knowledge structure of Bitcoin studies, around which other research forms a spiral-like outward path toward more particular topics such as sentiment analysis and cryptocurrencies. Particular research groups also tend to cite within their own pool of authors; besides, more particular research questions and qualitative measures such as various classifications of moods are cited relatively less, and slide to the periphery of the knowledge structure.

Probably, for this reason we do not see prevalence of previous literature on sentiment, or any other particular topics or methods. Instead, the resulting knowledge structure seem to crystallize around the explicit and implicit research questions that are asked (e.g., "Is Bitcoin a bubble?," which is the implied research question of the largest cluster of co-cited articles). At the same time, more specific methods or concepts, such as investor sentiment and interest, take the marginal position in the knowledge structure; and older papers tend to lose the citation count competition to the newer ones.

The ultimate reason for this particular structure may lie in the inherent difference between qualitative and quantitative research. Although many argue that studies on more qualitative aspects of cryptocurrency and blockchain are still much needed to understand the specific qualities of cryptocurrencies, it still may be easier, and sufficient enough for the goals such as looking for "bubbles," to conduct quantitative studies that only include some, most basic, measurements of investor interest. As for qualitative research, it is absent from

the list of most cited sources, as it, by its nature, does not allow to generalize itself to all kinds of cases.

In the meantime, a more selective qualitative literature review demonstrates that, although still relatively underrepresented in academic studies, the discursive aspect of valuing Bitcoin and other cryptocurrencies has been in the center of blockchain studies from the beginning. One of the first studies that examined the correlation between social media signals and the price of Bitcoin has found several feedback loops which show how the rise of interest in Bitcoin has resulted in a surge of its price, such that "increasing Bitcoin prices create collective attention through search volumes, which in turn triggers word of mouth about Bitcoin, leading to higher prices," and so "a similar loop exists with the amount of users in the Bitcoin economy" (Garcia et al., 2014). Also, spikes in total search volume often predict price drops, as traders react to negative events in the Bitcoin economy by looking up more information on them.

The same drastic reaction on cryptocurrency-related news such as security breaches has been later observed by other researchers, such as Laskowski and Kim (2016). However, Kaminski and Gloor (2016) conclude that the market changes precede public mood changes, which means that Twitter emotionally reflects Bitcoin trading dynamics (although the feedback loop is also highly likely). In comparison, in the study of Glenski et al. (2019), sentiment did not play a major role and was unnoticeable for Bitcoin specifically (Glenski et al., 2019). In comparison, Valencia et al. have studied price movements of Bitcoin, Ether, Ripple, and Litecoin, complementing the market data with the data from Twitter that contained cryptocurrency names as keywords. Of all machine learning tools, neural networks produced overall better results for market prediction. However, Ethereum price shifts could not be predicted by any of the methods (Valencia et al., 2019).

Yet another problem is that studies on sentiment are hardly replicable, as the Internet evolves, online communities change all the time, and their participants learn to use social media to "pump and dump." The role of sentiment is largely recognized in the practice of digital investors themselves. Besides, even more trading instruments take online mood into account, which further complicates the picture. For instance, the website *Alternative.me*

collects emotions and sentiments from online sources and displays the result for everyone. It is presented in the form of one simple meter that displays *Crypto Fear & Greed* on the scale from 0 to 100—the simplest possible tool that is taken into consideration by many crypto investors (Tobieskrambs GmbH, 2022). Another popular free analytical service about cryptocurrencies, Coingecko, collects its own data on sentiment toward cryptocurrencies in a survey: a visitor of a cryptocurrency profile on Coingecko is asked how they feel about it today: good or bad? (CoinGecko, 2021).

In general, there are several ways to conceptualize sentiment, and they are not necessarily colored as "good" or "bad." In the broadest sense, investor sentiment is "a belief about future cash flows and investment risks that is not justified by the facts at hand" (Baker & Wurgler, 2006). While earlier studies focused on beliefs of professional traders, financial experts, and business representatives, today it is the *public sentiment* which is just as important, as shown during the GSS, and arguably even more so when there are uncountable individual digital investors out there in the wild. As mentioned in the introductory section to this chapter, probably the simplest way to forecast changes, or "nowcast" them (as termed by Kaminski & Gloor, 2016) on the trading market is to measure public interest in a particular topic online.

The correlation intensifies when anyone who uses the Internet can potentially be, or might soon become, an individual investor. At the earlier stage of cryptocurrency adoption, the daily volume of the Bitcoin page views on Wikipedia was used as one of the variables to predict the changes in Bitcoin price (Cheah & Fry, 2015; Kristoufek, 2013). Another approach that remains useful today, and is used in the Crypto Fear & Greed Index, is search data from Google Trends. In a heavily cited paper, Cheah et al. observed a notable peak in late 2013 in the Google Trends search index for the term "Bitcoin," which preceded its growth (Cheah & Fry, 2015). In this case, online attention is measured quantitatively, but its emotional valence remains unknown. In a further development, natural language processing allows researchers to measure the mood of online messages and larger publications. In one such well-cited study, Paul Tetlock found the mood of a daily *Wall Street Journal* column to be correlated with the state of stock market: high level of optimism in the media predicted a

temporary downward movement, and unusually high or low pessimism predicted high market trading volume (Tetlock, 2007). It is quite telling, therefore, that the market reacted to intensity of affect (quantitative measurements of its presence on the market) rather than to its mode (positive or negative). It would be only logical to assume that positive sentiment drives buying while negative sentiment drives selling; this, however, is not self-evident and should be explored further in future studies.

From the foregoing analysis, one can now turn to the emerging topic of NFTs. Although sentiment studies on NFTs are yet to come, such analysis has been applied to a somewhat similar topic of initial coin offerings (ICOs). In the golden age of ICOs (which did not last long, due to the deceptive nature of far too many of them, see Chohan, 2019), the positive language of Twitter messages about these blockchain ventures was observed to be linked with higher funding (Albrecht et al., 2020). This funding would come from individual investors who would purchase a share in the form of blockchain-based tokens, or "coins" (hence "initial coin offering"). Twitter was used "to signal effort, quality, and trustworthiness" of blockchain ventures to investors (Albrecht et al., 2020), although the fate of ICOs after they had been funded is not discussed in this study. Trust in ICOs was found to be driven by a rather complex sentiment of "fear of missing out" (FOMO) later (Karkkainen, 2021, see also Chapter 9 in this volume). In the future studies, one might surmise that a similar picture concerning NFTs will emerge.

Planet of the Apes: NFTs and the Celebrity Culture

One of the most prominent features of discourse around NFTs is the overwhelmingly positive mood of its holders. First, it is baked into the agenda of most NFT projects, which almost always contain elements of a utopian manifesto. In popular media, the well-known scientific YouTuber and educator Dan Olson has described the mood of "toxic optimism" in invitation-only Discord servers where new NFTs are discussed, pushed, and "dropped."[3] The mood is almost cultish, and the slightest critique is perceived as toxic negativity (Roberti, 2021). Anecdotally, the author of this chapter has seen friends and colleagues gradually succumbing

to NFT madness. In the process, they would become more and more optimistic, sometimes even euphoric, about the technology which did not always deserve the unconditional love and trust that they were granting it.

Looking back at the history of trading and in particular at the dot-com bubble and its burst in 2000, Schroeder and Zwick describe a new type of a digital investor whose primary motivation for trading is fun (2021). The author labels this type "the kinematic investor": he (or she, which is less likely) emerged in the late 1990s, "mesmerized by the experience of dynamism, action, and speed of being in the market" (Schroeder & Zwick, 2021). The market crash has somewhat curbed the enthusiasm of the typical kinematic investor, giving place to a rational "entrepreneurial investor," motivated primarily by profit. The kinematic investor returns to chase "aesthetic experiences of thrill, speed, and agency" (Schroeder & Zwick, 2021). In an alternative analysis, Liblich and Lenten describe two strategies that can be assigned to these two types of investors: "flight to safety" as opposed "flight to focal points" represented by "meme stocks" and other high-risk opportunities (Libich & Lenten, 2021).

The "kinematic investor" is not an entirely new character on the global trading floor. However, now such investors have learned (the hard way) the basics of digital democracy and self-organization on social media platforms such as Reddit (see also Chapter 7 in this volume). The GameStop Squeeze remains one of the most successful precedents of such self-organization, even despite its many challenges (Van Kerckhoven & O'Dubhghaill, 2021). When sentimental investors stand united, brought together by the affect of "us versus them," they might pose noticeable risks to the global financial system in the post-democracy of the 21st century (see, e.g., Costola et al., 2021; Umar, Gubareva et al., 2021; Umar, Yousaf et al., 2021). This is a prevailing theme in this book's exploration of *Activist Retail Investors in New Financial Markets.*

In sum, the affective lens proposed by Chantal Mouffe does not only describe the "post-democratic situation" in which we find ourselves, but also offers possible pathways to new developments. Speaking of Google Trends, public interest is quite often also investor interest, and after all, anyone, can be an investor in this new environment of individual

traders that emerged from public discussions on social media, communities of cryptocurrency adopters, and apps like Robinhood.

Here we need to return to the paradox of NFTs, which have "disrupted the disruption" once again. In the eyes of their holders, the main appeal of NFTs is their symbolic certificate of digital ownership verified by cryptographic hash (Chohan, 2021a), which is to say, the appeal of some seemingly inalienable right to private property obtained at a peer-to-peer market and guaranteed by the technology-mediated consensus rather than force of law, and so it replaces the institute of law in a democratic state. These property rights are not recognized by the state without additional verification: "smart contracts" are not legal contracts (see, e.g., Low & Mik, 2020). Again, we can speak about post-national and post-democratic utopia, and just enough people believing in it to make it true. What is important is that philosophical and political views are just as important in adoption of blockchain solutions as the technology itself (see, e.g., Koens et al., 2021; Chohan, 2017).

The true paradox of NFTs, however, is that the instruments for disrupting the existing economic unfairness and building a more democratic marketplace for artists and other creators end up in the hands of the wealthiest few, for example, celebrities, who accumulate this new form of value created through pumping up investor interest and sentiment. As we have already discussed, in a rather controversial move, Chantal Mouffe calls for the left to embrace populism as an appealing strategy of political affect. Even though "affective bonds with a charismatic leader" predictably meet criticism from disenchanted intellectuals, their potential for social mobilization can be immense, and it should be better used for good. But in today's cultural climate, the role of such charismatic personalities is taken by celebrities, from Elon Musk (see Ante, 2021) and Grimes to Snoop Doggy Dogg and Shaquille O'Neal—to name only the most notable traders and promoters of cryptocurrencies and NFTs. The point of being a celebrity is to be loved (and hated) by the masses; they replace charismatic leaders in post-democratic societies.

Conclusion

In the end, what is the true value of NFTs? Active involvement of influencers and celebrities, known for their reliance on "attention economy" and open to immense affective investment from their fans (including countless retail investors), suggests that the true value of NFTs comes from rather "manufactured" than "true" authenticity. From this perspective, NFTs may become a powerful tool to convert affect to financial value. Most of the blockchain ideology has been lost in the process: although some celebrities such as Snoop Dogg and Timbaland actively participate in the social life of the NFT community, many others, such as Eminem and Post Malone, acquire breathtakingly expensive ape tokens through their PR and marketing representatives, contrary to the popular belief that blockchain-based economies "remove intermediaries" in some way. In the long run, such purchases appear to be related to promotional campaigns such as Eminem collaborating with Snoop Dogg (Eminem & Dogg, 2022).

There is still hope for democracy, however, when we look back at Mouffe's critique of populism. Naturally, economically minded participants of the NFT market immediately conjured up a number of ways to lend and co-own exclusive tokens, such as the *Grey Boys* project where up to 10,000 investors can share ownership rights to one Bored Ape or any other NFT. It remains to be seen how sharing the same Twitter avatar with tens, if not thousands, of other co-owning retail investors can change "perceived rarity" of the depicted item, even if demand is high and authenticity is still confirmed by blockchain. Same can be said about the imaginary situation when all 10,000 hypothetical shareholders of one particular token decide to attend a private physical celebrity event where only BAYC owners are invited.

Whatever one might think of them, NFTs are likely here to stay as an alternative financial space for retail investors. They are a perfect example to apply one of the most important messages from Mouffe's work: the goal is not to blame any actors in this (supposedly) most flamboyant investment bubble of our time, but to tap into the abundance of collective affects that they produce, for the liberating potential that is already there. One of the reasons why NFTs have succeeded, this chapter has argued, is that many people are very *happy* about them (see also Schroeder & Zwick, 2021; Chohan, 2021a), as this idea allows

them to imagine better future potentialities not only for themselves, but also for society at large.

Consider the notion of the "oligarchs" who decide how capital is allocated today, and then look at the "underdogs" creating their own valuable assets that nobody can take away from them (Chohan, 2021a). NFTs, and their value, can be criticized in many ways, but one thing is for sure: holding an NFT can make its owner feel very happy and connected to a like-minded community with an overwhelmingly good and optimistic mood. For Mouffe's notion of democracy, as well as for retail investors at large, we can only hope that this will result in more political parties, and not in quasi-religious cults.

The figure of the emotional, "kinematic," "sentimental," or otherwise irrational investor is nothing new by itself: it has always been present on stock markets. What has changed, again, is democratization, decentralization, and public participation that grants unpreceded agency to self-proclaimed "apes" (Van Kerckhoven & O'Dubhghaill, 2021). Direct access to financial tools online amplified the role of sentiment and mood on the existing financial markets and also expanded them to new territories of DeFi and NFTs. The role of affect, however, is often pushed to the margins of the knowledge structure related to cryptocurrency trading. Despite the abundance of data that can be harvested from social networks and public blockchains, we still do not see enough research on irrational factors that drive potentially self-sabotaging behavior.

"Irrational," however, does not mean "chaotic": patterns observed on the margins of financial studies call for more qualitative research and theory-crafting. While particular emotions will remain the subject of psychology, finance scholars may find inspiration in a greater variety of emotions and moods (from "calm" to "surprise"), explore interdisciplinary and hybrid concepts such as FOMO ("positive" fear that stimulates buying behavior), and acknowledge celebrity "influencers" as new powerful forces on the global market. If such studies bring results that are convincing enough, the "affective turn" may revolutionize studies of finances in the same way as it has already advanced social sciences.

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Notes

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Umar, Z., Yousaf, I., & Zaremba, A. (2021). Comovements between heavily shorted stocks during a market squeeze: Lessons from the GameStop trading frenzy. *Research in International Business and Finance*, *58*, 101453. https://doi.org/10.1016/j.ribaf.2021.101453

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Yermack, D. (2013). *Is Bitcoin a real currency? An economic appraisal*. www.nber.org/papers/w19747

Appendix 1: Highly Cited References on Mood, Sentiment, Cryptocurrency, and Blockchain as of December 2021 (*Source*: Author's Research)

What Is Discussed	*Reference*
Bitcoin, stocks, statistical analysis	Baek, C., & Elbeck, M. (2015). Bitcoins as an investment or speculative vehicle? A first look. *Applied Economics Letters*, *22*(1), 30–34. https://doi.org/10.1080/13504851.2014.916379
Investor sentiment, stocks, statistical analysis	Baker, M., & Wurgler, J. (2006). Investor sentiment and the cross-section of stock returns. *The Journal of Finance*, *61*(4), 1645–1680. https://doi.org/10.1111/j.1540-6261.2006.00885.x
Investor sentiment, stocks, statistical analysis	Baker, M., & Wurgler, J. (2007). Investor sentiment in the stock market. *Journal of Economic Perspectives*, *21*(2), 129–152. https://doi.org/10.1257/jep.21.2.129
Bitcoin, statistical analysis	Balcilar, M., Bouri, E., Gupta, R., & Roubaud, D. (2017). Can volume predict bitcoin returns and volatility? A quantiles-based approach. *Economic Modelling*, *64*, 74–81. https://doi.org/10.1016/j.econmod.2017.03.019
Bitcoin, stocks, statistical analysis	Baur, D. G., Hong, K., & Lee, A. D. (2018). Bitcoin: Medium of exchange or speculative assets? *Journal of International Financial Markets, Institutions and Money*, *54*, 177–189. https://doi.org/10.1016/j.intfin.2017.12.004
Bitcoin, blockchain	Böhme, R., Christin, N., Edelman, B., & Moore, T. (2015). Bitcoin: Economics, technology, and governance. *Journal of Economic Perspectives*, *29*(2), 213–238. https://doi.org/10.1257/jep.29.2.213
Stocks, investor sentiment, statistical analysis	Bollen, J., Mao, H., & Zeng, X. (2011). Twitter mood predicts the stock market. *Journal of Computational Science*, *2*(1), 1–8. https://doi.org/10.1016/j.jocs.2010.12.007
Bitcoin, stocks, statistical analysis, hedging	Bouri, E., Molnár, P., Azzi, G., Roubaud, D., & Hagfors, L. I. (2017). On the hedge and safe haven properties of Bitcoin: Is it really more than a diversifier? *Finance Research Letters*, *20*(C), 192–198.
Bitcoin, stocks, statistical analysis, hedging	Bouri, E., Gupta, R., Tiwari, A. K., & Roubaud, D. (2017). Does bitcoin hedge global uncertainty? Evidence from wavelet-based quantile-in-quantile regressions. *Finance Research Letters*, *23*, 87–95. https://doi.org/10.1016/j.frl.2017.02.009
Bitcoin, statistical	Cheah, E.-T., & Fry, J. (2015). Speculative bubbles in bitcoin markets? An empirical

analysis, investor interest	investigation into the fundamental value of bitcoin. *Economics Letters*, 130, 32–36. https://doi.org/10.1016/j.econlet.2015.02.029
Bitcoin, statistical analysis, investor interest, stocks	Ciaian, P., Rajcaniova, M., & Kancs, d'Artis. (2016). The economics of bitcoin price formation. *Applied Economics*, *48*(19), 1799–1815. https://doi.org/10.1080/00036846.2015.1109038
Bitcoin, stocks, statistical analysis	Corbet, S., Meegan, A., Larkin, C., Lucey, B., & Yarovaya, L. (2018). Exploring the dynamic relationships between cryptocurrencies and other financial assets. *Economics Letters*, *165*, 28–34. https://doi.org/10.1016/j.econlet.2018.01.004
Bitcoin, stocks, statistical analysis	Corbet, S., Lucey, B., & Yarovaya, L. (2018). Datestamping the bitcoin and ethereum bubbles. *Finance Research Letters*, *26*, 81–88. https://doi.org/10.1016/j.frl.2017.12.006
Bitcoin, statistical analysis, investor interest, stocks	Corbet, S., Lucey, B., Urquhart, A., & Yarovaya, L. (2019). Cryptocurrencies as a financial asset: A systematic analysis. *International Review of Financial Analysis*, *62*, 182–199. https://doi.org/10.1016/j.irfa.2018.09.003
Investor sentiment, stocks, statistical analysis	Da, Z., Engelberg, J., & Gao, P. (2015). The sum of all FEARS investor sentiment and asset prices. *The Review of Financial Studies*, *28*(1), 1–32. https://doi.org/10.1093/rfs/hhu072
Bitcoin, stocks, statistical analysis, hedging	Dyhrberg, A. H. (2016). Hedging capabilities of bitcoin. Is it the virtual gold? *Finance Research Letters*, *16*, 139–144. https://doi.org/10.1016/j.frl.2015.10.025
Bitcoin, stocks, statistical analysis, hedging, investor sentiment	Dyhrberg, A. H. (2016). Bitcoin, gold and the dollar—A GARCH volatility analysis. *Finance Research Letters*, *16*, 85–92. https://doi.org/10.1016/j.frl.2015.10.008
Sentiment analysis, Bitcoin, blockchain, investor sentiment	Garcia, D., Tessone, C. J., Mavrodiev, P., & Perony, N. (2014). The digital traces of bubbles: Feedback cycles between socio-economic signals in the bitcoin economy. *Journal of the Royal Society Interface*, *11*(99). https://doi.org/10.1098/rsif.2014.0623
Sentiment analysis, Bitcoin, investor sentiment	Kaminski, J. (2016). *Nowcasting the bitcoin market with Twitter signals*. ArXiv:1406.7577 [Cs]. http://arxiv.org/abs/1406.7577
Sentiment analysis, Bitcoin, investor sentiment	Karalevicius, V., Degrande, N., & De Weerdt, J. (2018). Using sentiment analysis to predict interday bitcoin price movements. *The Journal of Risk Finance*, *19*(1), 56–75. https://doi.org/10.1108/JRF-06-2017-0092
Bitcoin, statistical analysis,	Katsiampa, P. (2017). Volatility estimation for Bitcoin: A comparison of GARCH models. *Economics Letters*, *158*, 3–6. https://doi.org/10.1016/j.econlet.2017.06.023

Bitcoin, stocks, statistical analysis, investor interest	Klein, T., Pham Thu, H., & Walther, T. (2018). Bitcoin is not the new gold—a comparison of volatility, correlation, and portfolio performance. *International Review of Financial Analysis*, *59*, 105–116. https://doi.org/10.1016/j.irfa.2018.07.010
Bitcoin, statistical analysis, investor interest, stocks	Kristoufek, L. (2013). BitCoin meets Google trends and Wikipedia: Quantifying the relationship between phenomena of the Internet era. *Scientific Reports*, *3*(1), 3415. https://doi.org/10.1038/srep03415
Bitcoin, statistical analysis, investor interest, stocks	Kristoufek, L. (2015). What are the main drivers of the bitcoin price? Evidence from wavelet coherence analysis. *PLoS One*, *10*(4), e0123923. https://doi.org/10.1371/journal.pone.0123923
Bitcoin, statistical analysis	Nadarajah, S., & Chu, J. (2017). On the inefficiency of Bitcoin. *Economics Letters*, *150*, 6–9. https://doi.org/10.1016/j.econlet.2016.10.033
Bitcoin, blockchain	Nakamoto, S. (2008). *Bitcoin: A peer-to-peer electronic cash system*.
Investor interest, investor sentiment, stocks, statistical analysis	Tetlock, P. C. (2007). Giving content to investor sentiment: The role of media in the stock market. *The Journal of Finance*, *62*(3), 1139–1168. https://doi.org/10.1111/j.1540-6261.2007.01232.x
Bitcoin, statistical analysis,	Urquhart, A. (2016). The inefficiency of Bitcoin. *Economics Letters*, *148*, 80–82. https://doi.org/10.1016/j.econlet.2016.09.019
Bitcoin, statistical analysis, investor interest	Urquhart, A. (2018). What causes the attention of Bitcoin? *Economics Letters*, *166*, 40–44. https://doi.org/10.1016/j.econlet.2018.02.017
Bitcoin, blockchain	Yermack, D. (2013). *Is Bitcoin a real currency? An economic appraisal.* Working Paper No. 19747; Working Paper Series. National Bureau of Economic Research. https://doi.org/10.3386/w19747

Appendix 1: Thirty most cited academic publications in the combined bibliography of all publications on sentiment, mood, emotion, cryptocurrencies, and blockchain, as of December 2021.

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1 School of Marketing and Communication, the University of Vaasa.

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An NFT drop is an exclusive event when newly minted NFTs are distributed among cryptocurrency wallets of early “believers” and/or investors who are on the “white list” of wallet addresses and/or at the exclusive Discord server. At the next stage, NFTs enter the open market where the “whitelisted” owners can resell them for a much higher price if said NFTs gain traction.