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VIRAL INVESTMENTS LINKED TO SOCIAL MEDIA: AN ANALYSIS OF VIRAL INVESTMENTS AMONG INEXPERIENCED INVESTORS

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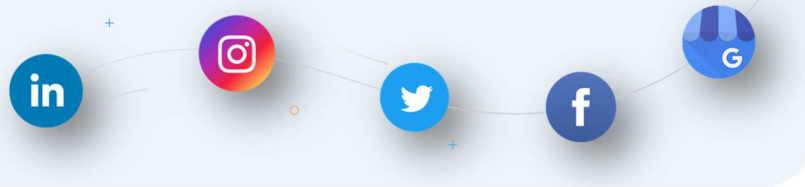
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ABSTRACT

This analysis dives into the newly emerging effects of social media on asset investments. When investment information goes 'viral' or is rapidly spreading through social media, inexperienced investors are likely to react and trade an asset they are unfamiliar with. This type of behavior results in a market bubble which is directly linked back to 'viral investments,' which are investments that have gone viral through social media.

This analysis will look at the real-life example of Bitcoin's bubble as one of the first viral investments as well as examples of Twitter's impact on markets. These trading habits are closely related to the field of behavioral finance and are amplified by automated financial algorithms. These programmed systems detect both the changes in markets that the inexperienced investors create as well as analyze trends on social media through post volume and keywords. In a spiral type of effect, investors will then see a change in the market caused by financial algorithms and in turn react to them. The back and forth trend either quickly creates a bubble or crashes the value of an asset.

Paul A. Gilsdorf was raised in Maypearl, Texas, which has a population of around 1,000 and is located an hour south of Dallas. Both of his parents are public school teachers, and he is the first of his family to study Finance. Paul received a B.A. in both Business and Psychology from Holy Cross College at Notre Dame, Indiana. He was also a part of the Notre Dame Investment Club, which is the country's highest value student ran investment club. Paul is currently pursuing a Masters of Liberal Arts in Extension Studies with a focus in Finance at the Harvard Extension School. He wrote this article while studying on campus at Harvard University in the Spring of 2019. This article stems from one of his previous informal essays written about the unique bitcoin bubble evolving from social media.

INTRODUCTION

There is a new age of investment bubbles, which are fueled by social media. The trend originates from the constant use and influence of social media in today's younger population, especially inexperienced investors (Brooks & Longstreet, 2015). Because young investors look to social media for news and updates, viral posts that concern the market have an immediate effect on that asset's short-term value (Brooks, Gale & Grant, 2017). Inexperienced traders do not have the same knowledge as experienced investors and are more susceptible to unhealthy influence by their peers (Glaser & Weber, 2007). Trading based on speculation and emotion across a large population creates volatility in the market (Uygur & Taş, 2012). The volatility that is influenced by social media is amplified by the automation of financial algorithms which scan twitter for keywords and updates. Because of the combination of inexperienced investors being influenced by social media and financial algorithms, bubbles are more likely to form than from traditional trading habits.

One reason that social media has such a high level of influence over young investors is that it has created an environment where the most financially successful individuals are praised and copied. When an active social media user is a successful investor, other online users compare themselves to that investor and lower their self-esteem if they have not had the same luck (Vogel, Rose, Roberts & Eckles, 2014). After seeing their idol excel, social media users want to copy whatever successful tactics that investor used to build their apparent wealth. As a result, inexperienced investors are jumping into investments they know little about just because it worked for an idol of theirs. This trend is similar to experienced investors idolizing Warren Buffet and copying his portfolio and investment strategies. Chincarini (2012, p. 10) highlights this trend:

"...portfolio managers create an innovation. This innovation usually makes abnormally large returns, so others desperately want to copy the strategy. These copycats eventually learn the ropes and begin trading money in the same fashion. At first this leads to even more profits for the early innovators, because others buy more and more of their trades. The copycats create a side effect, however: They crowd the space. The strategy's future returns depend increasingly on the copycat's behavior. Oftentimes copycat investors make their trades on borrowed money, which amplifies both their positions and their risks. Modern risk-measurement models generally ignore the presence of copycats and the resulting crowded spaces, which often leads to underestimations of risks. A shock to the system can lead to sudden, sometimes large asset price moves, which can cause panic and failure among the institutions involved in that investment space."

The high levels of speculations that result from social media usage among inexperienced investors lead to bubbles. These bubbles are especially threatening when using social media as a channel because information spreads faster than usual and over a more extensive network. Youssefmir, Huberman & Hogg (1998) discuss the anomaly of speculatory investors generating market bubbles in their theory of asset price bubbles when they state, "We show that when speculative trends dominate over fundamental beliefs, bubbles form, leading to the growth of asset prices away from their fundamental value. This growth makes the system increasingly susceptible to any exogenous shock, thus eventually precipitating a crash." (Youssefmir et al., 1998) noted that not only are speculatory investors likely to indulge in viral investments, but new investors are motivated to enter the market for the first time for an investment being discussed among their peers. This new anomaly creates a faster-growing bubble than seen from traditional market environments.

This paper aims to shed light on the newly evolving topic about social media fueled investments among inexperienced investors and elucidates the growing social media impact and its growing role in investments.

TWITTER AND FINANCIAL ALGORITHMS

Two examples of Twitter posts, or 'tweets,' causing drastic reactions from the market are the Associate Press's hacked account and Elon Musk's rash decision to tweet about taking Tesla private. On April 23, 2014, the Associated Press Twitter account @AP was hacked and tweeted, "@AP: Breaking: Two Explosions in the White House and Barack Obama is injured." (@AP, 2014) In response to the hacked tweet, the market plummeted. The Standard and Poor's 500 index value fell by $136.5 billion and the Dow Jones Industrial Average by 143.5 points (Selyukh, 2013). This example shows just how sensitive the market is to social media. From one false tweet, the market was in a freefall within seconds.

Another example of the sensitivity in the market is Elon Musk's tweet on August 7, 2018. "@Elonmusk: Am considering taking Tesla private at $420. Funding secured". He then followed up the post with "@Elonmusk: Shareholders could either sell at 420 or hold shares & go private" (Elonmusk, 2018). Tesla's share price rose by 11% from Musk's spontaneous tweet which appeared to have no factual backing to it. The tweet resulted in Musk being fined $40 million by the Securities and Exchange Commission and required to resign as a chairman of the company but remain as CEO.

According to Romiah, Xu, & Moosa (2015), these two market anomalies are caused by "noise traders". Ramiah, et al. (2015) stated that noise traders will invest in and react to a market they know little about based on conversations, news, and most recently social media. These often-inexperienced investors drive markets to irrational levels. One of the reasons these two cases saw such an extreme reaction as a result of noise traders is because of financial algorithms. The automated platforms amplify the forced volatility from noise traders (Karppi &Crawford, 2015). Because of this increased effect, a tweet can result in a crash and a viral investment can turn into a bubble instantaneously. The relationship of algorithms reacting to the activity of speculatory traders also works in bi-direction movements spiraling each other into amplified reactions.

Financial algorithms scan social media for trigger words such as "explosion," "assassination," or "airline crash" and automatically execute trades. These automated responses are in turn amplified by speculative traders who rely on their behavioral tendencies. When the stock value is rising from automated trading, speculatory investors are more likely to buy and increase the boost in value. In the same way, speculatory investors will sell once the price drops because of algorithmic trades (Sun, Lachanski & Fabozzi, 2016).

BITCOIN

One of the first and most significant examples of social media creating a bubble occurred in 2018 with the drastic growth in the value of Bitcoin. The cryptocurrency grew from $750 in December of 2017 to $20,000 in December of 2018 with most of that growth happening over two months; a 2566% growth rate. After the $20,000 mark, the value of the coin plummeted and is now sitting at just above $5,000 ("Bitcoin Price Index," 2019).

Influential behavior and behavioral finance are direct links to why these investments went viral. Enough young investors were making a fortune from the cryptocurrency that they began telling their friends and posting on social media. Their friends told their friends and posts began to be viewed by hundreds of millions of social media users. With over 244 million social media users in 2018 and the eagerness for the younger population to 'get rich quick,' information avalanched about Bitcoin and flooded social media and conversations ("U.S. Population with a Social Media Account," 2018). In the fall of 2018, college classrooms across the U.S. were engulfed in conversations revolving around bitcoin. Coinbase, the platform used to trade bitcoin, had only 300,000 accounts in 2017. By the end of 2018 the website hosted 32 million investors who were actively trading bitcoin ("How Many People Use Bitcoin in 2019?", 2019).

Using Bitcoin as an example, noise traders were using social media as their voice. The ability for information to go viral on social media and reach more massive crowds resulted in the bitcoin's market bubble becoming one of the fastest growing bubbles in history. As soon as the price showed a small amount of threat in December of 2018, noise traders let their behavioral finance tendencies kick in and sold out of fear. The drop in value from the initial sales created a downward spiral, which was bounced between investors and automated financial algorithms, plummeting the value of bitcoin. Investors could not get rid of the cryptocurrency fast enough. Bitcoin's value was cut in a third within one month of its peak. By the end of the next year, the investment was only 16% of the value before the crash. The bubble had burst, and millions of new investors have had their first bitter taste of losing a gamble in the financial markets.

CONCLUSION

Market bubbles are fueled by the constant use of social media and hyperinflated by algorithmic trading. As brokerage accounts become more accessible through apps such as Acorns and Robinhood, the number of inexperienced investors in the market will continue to rise. Viral investments will become more of a threat as the world becomes further connected.

Investors should pay close attention to social media trends and be careful not to invest in the long term in something they heard about through social media. The future of viral investment bubbles will increase in volatility and susceptibility to influence as social media grows in popularity (Greenwood & Nagel, 2009).

The new trend of viral bubbles has become prominent among young and inexperienced noise traders. New investors are entering the market and brokerage apps are making it easier than ever to invest. The dangerous trend of viral investments among social media users is enhanced by financial algorithms and is growing more prevalent. Investing should be approached with speculatory caution by investors in order to mitigate risk. As noise traders become further connected and the market increases its dependence on social media, the overall stock market will continue to grow unpredictable. Social media plays a vital role in effecting an asset's value. Through increasing volatility and immediate reactions, the formation of viral investments should be carefully speculated while their prevalence increases in today's marketplace.

REFERENCES

AP. (April 23, 2014). Breaking: Two Explosions in the White House and Barack Obama is injured.

Brooks, W. E., Gale, B., & Grant, S. M. (2017). Navigating Through the Crowd: How Do Investors Assess Contributor Credibility and Make Investment Judgments on Social Media Platforms? *Social Science Research Network*. http://dx.doi.org/10.2139/ssrn.2945657

Brooks, S., & Longstreet, P. (2015). Social networking's peril: Cognitive absorption, social networking usage, and depression. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace, 9*(4). doi:10.5817/cp2015-4-5

Bitcoin Price Index - Real-time Bitcoin Price Charts. (n.d.). Retrieved April 30, 2019, from https://www.coindesk.com/price/bitcoin

Chincarini, L. B. (2012). *The Crisis of Crowding: Quant Copycats, Ugly Models, and the New Crash Normal.* (p. 10). Hoboken, NJ: Bloomberg Press.

Elonmusk. (August 7, 2018). Am considering taking Tesla private at $420. Funding secured. https://twitter.com/elonmusk/status/1026872652290379776?lang=en

Greenwood, R., & Nagel, S. (2009). Inexperienced Investors and Bubbles. *Journal of Financial Economics, 93*(2), 239-258. doi:10.1016/j.jfineco.2008.08.004

"How Many People Use Bitcoin in 2019?" *Bitcoin Market Journal*, 11 Feb. 2019, www.bitcoinmarketjournal.com/how-many-people-use-bitcoin/.

Karppi, T & Crawford K (2015) Social media, Financial Algorithms, and the Hack Crash. Theory Culture and Society. Published online before print May 4, 2015 http://tcs.sagepub.com/content/early/2015/05/04/0263276415583139.abstract

Glaser, M., & Weber, M. (2007). Why inexperienced investors do not learn: They do not know their past portfolio performance. *Finance Research Letters, 4*(4), 203-216. doi:10.1016/j.frl.2007.10.001

Ramiah, V., Xu, X., & Moosa, I. A. (2015). Neoclassical finance, behavioral finance and noise traders: A review and assessment of the literature. *International Review of Financial Analysis, 41*, 89-100. doi:10.1016/j.irfa.2015.05.021

Selyukh, A. (2013) 'Hackers send fake market-moving AP tweet on White House explosions', Reuters, April 23. URL (Consulted November 2014): http://www.reuters.com/article/2013/04/23/net-us-usa-whitehouse-apidUSBRE93M12Y20130423

Sun, Andrew & Lachanski, Michael & J. Fabozzi, Frank. (2016). Trade the Tweet: Social Media Text Mining and Sparse Matrix Factorization for Stock Market Prediction. International Review of Financial Analysis. 48. 10.1016/j.irfa.2016.10.009.

U.S. population with a social media profile 2018. (n.d.). Retrieved April 30, 2019, from https://www.statista.com/statistics/273476/percentage-of-us-population-with-a-social-network-profile/

Uygur, U., & Taş, O. (2012). The Impacts of Investor Sentiment on Returns and Conditional Volatility of International Stock Markets. *Quality & Quantity, 48*(3), 1165-1179. doi:10.1007/s11135-013-9827-3

Vogel, E. A., Rose, J. P., Roberts, L. R., & Eckles, K. (2014). Social Comparison, Social Media, and Self-Esteem. *Psychology of Popular Media Culture, 3*(4), 206-222. doi:10.1037/ppm0000047

Youssefmir, M., Huberman, B. A., & Hogg, T. (1998). Bubbles and Market Crashes. *Computational Economics, 12*(2), 97-114. doi:10.1023/A:1008693507721