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The 2021 Silver Squeeze – analysis of the short squeeze on the commodity market

Introduction

The coronavirus pandemic caused much turmoil in stock markets. The years 2020–2021 were marked on the stock exchange by the appearance of strange phenomena and new forms of investment. These phenomena include the negative price of oil during pandemics, negative nominal yields of government bonds, You-Live-Only-Once stocks (YOLO stocks), meme coins, and NFTs. The times were also characterized by short squeezes organized by the coordinated action of tens of thousands of investors, who discussed investment ideas on forums such as Reddit.

A short squeeze is a market phenomenon where the price of an investment asset increases rapidly due to the purchase of assets by short sellers covering their positions. Short sellers borrow securities, sell them on the stock market, and expect the asset price to fall. If the asset's price falls, the market bears can profit by purchasing back the stocks and returning them to the brokerage house that borrowed them. On the contrary, if the price rises,

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the short-selling investors have to buy assets at a higher price. In some cases, when the market is illiquid, the investor can drive prices higher by purchasing the assets, causing additional losses. If other investors spot such a situation, they can buy assets to increase prices and make the market even less liquid. When one group of investors buys assets to make the market less liquid and profit from the price increase driven by the purchase of assets by investors covering their shorts, the strategy is called a short squeeze.

One example of such a situation was the GameStop (GME) short squeeze in 2021. GameStop, a video game retailer, was struggling financially due to a change in the market – the rise of digital gaming platforms. The short interest on GameStop was over 100% of its float (shares available for trading). This means investors must buy more shares to cover short positions than are currently available. This is possible because when short sellers sell a borrowed asset, someone else buys it. Consequently, there are two hypothetical owners of the same asset. This situation is precarious because it can drive asset prices. Moreover, those types of speculations are usually done through significant leverage, which increases risks. This situation attracted retail investors from Reddit forums. In January 2021, coordinated retail action catalyzed a short squeeze in the shares of GameStop, forcing certain hedge funds to unwind their positions at considerable losses.

There were many more attempts to squeeze the market. One such squeeze was the Silver Squeeze of 2021. The Silver Squeeze, similar to the GameStop short squeeze, was driven by the collective actions of individual investors. The retail investors rallied to buy physical silver, thereby increasing its price and draining liquidity from the market, forcing short commodity sellers to cover their positions at a loss. Many papers have been written about GameStop; however, the topic of the Silver Squeeze has been left largely unexplored. The GameStop case overshadowed the Silver Squeeze, and the existing literature omitted the topic. In our view, the case analysis can provide valuable insight into studying commodity markets. This attempt to apply an equity short-squeeze playbook to a global commodity market offers an instructive case study in market structure, liquidity provision, and the influence of investor sentiment and collective action. This research offers a view into a short squeeze in the commodities market done by retail investors.

We pose research questions:

1. Did the Silver Squeeze significantly impact demand for physical silver?
2. Did retail investors significantly impact silver prices during the 2021 Silver Squeeze?
3. What factors motivated retail investors to attempt a short squeeze on silver?
4. How does the 2021 Silver Squeeze compare structurally and in outcome to traditional short squeezes?

The first two scientific questions were tested through statistical analysis. Thus, we created two working hypotheses:

H1: Retail investors generated statistically significant demand for silver during the 2021 squeeze.

H2: Retail investor activity temporarily increased silver prices during the 2021 squeeze.

Questions 3 and 4 were answered through the comparative analysis.

This paper aims to analyze the 2021 Silver Squeeze and fill the research gap. It is structured as follows: Firstly, we conduct critical literature research on the topic. Secondly, we describe the methodology of the analysis. Next, we present the analysis of the events, which consists of:

- 1) a description of the event, including time frames and quantitative analysis of information flow on the internet and price movements in the stock market,
- 2) identification and analysis of potential causes of the short squeeze,
- 3) creation of a logical model of the investor's actions,
- 4) statistical analysis of significance of the impact of retail investors on the demand and prices,
- 5) a comparison of the Silver Squeeze of 2021 with other squeezes,
- 6) analysis of the outcome of the event.

In the last part of our research, we summarize our findings, analyze our research's limitations, and provide recommendations for further analysis.

1. Literature review

The short squeeze is quite a rare phenomenon. It occurs when short sellers who have borrowed and sold stocks expecting a price decline are forced to buy back shares as prices rise unexpectedly. A short squeeze also occurs when borrowed shares are recalled, leaving the short seller unable to source additional shares, which forces the short seller to close their position prematurely (Schultz 2023).

The literature on the topic is concentrated mainly on the stock market, where most squeezes appear. Stice-Lawrence et al. (2024) estimated that about 15% of short attacks experience squeezes, and squeeze risk increases with short sellers' visibility but decreases with the credibility of their evidence. Jiang et al. (2023) investigated the prevalence and persistence of short squeezes and the corresponding economic consequences on the squeezed stocks. They pointed out that the risk of being squeezed is higher during major macroeconomic events.

Sometimes, a short squeeze is viewed as a form of market manipulation; however, others argue that it is the short-selling activity itself that constitutes manipulation. When market prices are driven away from their equilibrium, short selling and countering the short squeeze can be seen as a distortion of prices. Short squeezes can significantly impact market quality, not only for the targeted stocks but also for their competitors. The volatility and price distortions caused by squeezes can undermine investor confidence and market stability, prompting calls for tighter regulation and monitoring of social media platforms. The costs associated with short squeezes are significant, with short sellers facing substantial financial losses (Pirrongo 1994). Usually, market manipulations are carried out by individuals or small groups. It is difficult to prove market manipulation when thousands of investors act independently. The GameStop incident in early 2021 is a notable example, where retail investors coordinated

through social media to drive up the stock price, leading to significant losses for hedge funds with short positions (Allen et al. 2021). The involvement of retail investors in short squeezes is often driven by a mix of financial motives and social or emotional factors, such as a desire to challenge institutional investors. This behavior can lead to market jamming, temporarily disrupting traditional market mechanisms (Jiang 2023).

Platforms like Reddit have been crucial in organizing retail investors to execute short squeezes. The GameStop squeeze was primarily driven by discussions on r/WallStreetBets, where users shared strategies and coordinated buying efforts. This highlights the power of social media in influencing market dynamics and the need for regulatory oversight (Adibi 2023). Some authors (Chohan 2023) point out that the retail investor's activism had a deeper, non-financial perspective. This action of investors was seen not as an investment case but as a fight with financial elites who dominated the market. Anand and Pathak (2022) analyzed a thousand accounts that discussed the GameStop case and presented evidence that 462 users impacted the tone of r/WallStreetBets discussions in the GameStop case.

The concept of a short squeeze is also seen in other markets, notably commodity markets. The financialization of commodities markets contributed to the volatility and susceptibility to short squeezes (Inamura et al. 2011). Whereas short squeezes in the stock market are often linked to manipulation, in commodities markets, they can arise from natural market dynamics (Ben-Abdallah and Breton 2016). For example, disruption in supply and demand (earthquake, war, drought) can lead to a shock that can squeeze shorts (Friedman 1990).

A naked short position is a situation when an investor sells short an asset without owning it. In other words, the investor must deliver an asset in the future without having the asset at all. This is possible because most futures contracts are cash-settled. Such a situation is challenging to defend when faced with a short squeeze. A naked short squeeze can pose a systemic risk. Aspadarec (2015) pointed out more than 5 years before the squeeze that the concentration of short bets in silver held by JP Morgan Bank increases systematic risk. The author emphasizes that naked short selling may present a systemic risk due to the insolvency of investors unable to deliver the silver they have sold.

The short squeeze on the silver market is nothing new. Cymrot and Gorman (1990) analyze the case of Nelson Bunker Hunt, who orchestrated a scheme to corner the silver market in the late 1970s. Frustrated by inflation and the instability of fiat currencies, Hunt sought to protect his wealth by making substantial investments in silver futures and bullion. This aggressive buying drove silver prices from 2.80 USD to an unprecedented 50 USD per ounce by early 1980, creating a speculative frenzy in the market. The Hunts faced lawsuits, including one by Minpeco S.A., alleging market manipulation. In 1988, a jury found the Hunts guilty of conspiring to artificially inflate silver prices, leading to a 197.1 USD million damage verdict against them. The case became one of financial history's most infamous examples of commodity price manipulation.

However, the verdict was seen by many as unjust. There is a question of who manipulates the market: the one who takes short positions on futures contracts without having the commodity artificially suppress the price, or the one who acts against this action.

Bredin et al. (2023), in a behavioral model, found very little evidence of manipulation in the silver market in the run-up to the Silver Crisis. They clarified the distinction between manipulation and speculation. “While manipulation forces prices away from their fundamental value, speculation does not. Speculators certainly aim to take advantage of price changes, but the actions are fully rational and consistent with the fundamental value of silver.” After the Silver Squeeze of the 1970s, the commodity stock exchange implemented rules. For instance, an individual trader is restricted to 3000 contracts in the spot month (equivalent to 15 million troy ounces of silver) for physically settled silver futures (CME 2021).

Short squeezes in commodity markets share similarities with those in the stock market but also present unique challenges and opportunities. Moreover, the role of social media in driving these events underscores the power of collective retail investor action and raises questions about market stability and the need for regulatory oversight. Understanding the interactions between precious metals and stock markets can provide insights into how these events unfold and their broader economic implications.

2. Methodology

To analyze the 2021 Silver Squeeze, the research design uses qualitative and quantitative methods. The market analysis includes quantitative data (such as price movements, demand for silver, and trade volume of futures contracts), recent research, Google search engine data on the popularity of specific terms (e.g., silver), forum post analysis, and comparative analysis. This approach reflects both the numerical properties of the market activity and the reasons, discourses, and plans that underlie the actions of the participants.

First, we examine the Silver Squeeze on a day-by-day basis to understand how it unfolded. We analyze sales results from retail sellers, data from the stock exchange (futures contracts), numerous news outlets, and statistical information from Reddit forums. We also examine the messages posted on Reddit, particularly on r/WallStreetBets, r/WallStreetSilver, and r/SilverSqueeze. This allows us to identify the link between people’s interest in the subject and their actions in the market and provides a daily time series analysis of the event.

Second, the paper uses a qualitative content analysis to break down user discussions. To achieve this, 500 comments sourced from the Reddit forums r/WallStreetSilver and r/SilverSqueeze made during the peak activity period are evaluated to determine the prevailing themes, investors’ affective tone, and reasons for participation. Thus, the models reflect the dominant ideologies and biases underlying retail investors’ efforts to redefine the silver market.

Third, the study proposes a conceptual framework that shows how a silver squeeze can happen. This model is a sequence of activities that includes retail buying, supply-demand mismatch, upward pressure, and short-covering; it also identifies the scenario that would enable this. When comparing this model with what actually happened, one can see

the differences between previous short squeezes and the expected effects in equity short squeezes, which did not fully materialize.

Fourth, we use the Z-statistic to test the statistical significance of the Silver Squeeze. Using data provided for this paper by Mennica, the largest Polish precious metals seller, we analyzed whether the demand driven by retail investors was statistically significant. The Z-statistic was applied to determine if the impact of retail investors was noticeable to retail sellers. Next, we examined the effect of the Silver Squeeze on financial instruments, specifically futures contracts, by analyzing whether the trading volume of these contracts increased significantly during the period in question. After this, we tested the statistical significance of price changes over the research period. We assessed the significance of daily price changes in silver futures by calculating daily returns and comparing them to the average historical price changes. This allowed us to evaluate whether the Silver Squeeze had a statistically significant impact on price volatility.

Finally, using the findings obtained, a hypothesis is described that can explain why the Silver Squeeze did not have a long-lasting effect on the price. When combining the results from the first quantitative analysis, the second qualitative examination, the theoretical modeling, and the case study, the authors provide a complex explanation that captures the dynamics of the silver market and the limitations of retail investors attacking the market.

This integrated methodology affords a sound basis for understanding the processes of the Silver Squeeze attempt. It also provides valuable insights into the role of retail investors, market structures, and financial instruments.

3. Results and analysis

3.1. The anatomy of the 2021 Silver Squeeze attempt

We have divided the squeeze attempt into 5 phases: Initiation, First Market Reaction, Weekend Mobilization, Monday Increase, and Decline. Figure 1 illustrates the sequence of actions.

Phase 1 – Initiation (January 25–27, 2021)

During this phase, silver remained stable, trading around 25–26 USD/oz, while equity markets were caught up in the GameStop frenzy. Reddit's r/WallStreetBets focused almost exclusively on heavily shorted stocks, with only minimal mentions of silver. Market commentary described precious metals as steady, showing no signs of imminent retail-driven distortions. Historical Reddit archives confirm that silver was a peripheral topic at best. No major price spikes or significant ETF inflows were noted. This period laid a calm foundation before serious attempts to influence silver prices emerged.



Fig. 1. Timeline of the 2021 Silver Squeeze
Source: own analysis

Rys. 1. Oś czasu kryzysu cen srebra w 2021 r.

Phase 2 – First Market Reaction (January 28–29, 2021)

During these two days, scattered social media posts suggested silver as the “next GME” despite lacking evidence of concentrated short positions. This narrative gained some traction, leading to slight upticks in silver spot prices, ETF inflows, and higher web traffic for bullion dealers (Bloomberg News 2021). Hashtags like #SilverSqueeze surfaced, pushing the price above 27 USD/oz mid-morning on January 29. Nevertheless, ample liquidity and institutional presence prevented a runaway rally. By the close of January 29, prices rose but not dramatically, and media outlets prepared weekend coverage. Traders looked ahead to Monday’s open, expecting a more dramatic move, but cracks in the sustainability of the Silver Squeeze were already visible.

Phase 3 – Weekend Mobilization (January 30–31, 2021)

With markets closed, social media platforms buzzed with speculation and plans to buy physical silver. Media coverage late Sunday referenced increased online interest, stoking expectations for a Monday surge (Colombo 2021). Bullion dealers reported out-of-stock items and soaring premiums, reinforcing the perception of scarcity. Without immediate price feedback, sentiment and narrative, rather than data, drove strategy. By Sunday night, participants anticipated a historic Monday move. During the weekend, posts promoting the Silver Squeeze were removed from Reddit’s r/WallStreetBets as the moderators viewed it as an attempt to divert attention from the GME stock. New Reddit forums r/WallStreetSilver and r/SilverSqueeze were created on January 30, 2021, and January 31, 2021, respectively, which attracted new users. The number of comments per day on these forums is presented in Figure 2.

Phase 4 – Monday Increase (February 1, 2021)

Pre-market futures activity pushed silver past 28 USD/oz before U.S. trading began, and within hours, it briefly topped 30 USD/oz (Bitcoin News 2021). Major media outlets covered the surge in real-time, likening it to the previous week’s equity events (Phillips 2021). Institutional players, however, quickly supplied liquidity and deployed hedges, demonstrating the market’s capacity to absorb retail buying (Telford and Heath 2021). By early afternoon, prices eased from their highs, settling near 29.59 USD/oz by the close. Despite record ETF inflows and heightened retail activity, analysts noted that silver’s global depth prevented a sustained squeeze. The day showed that while retail traders can spark short-lived price spikes, structural market factors ultimately prevail.

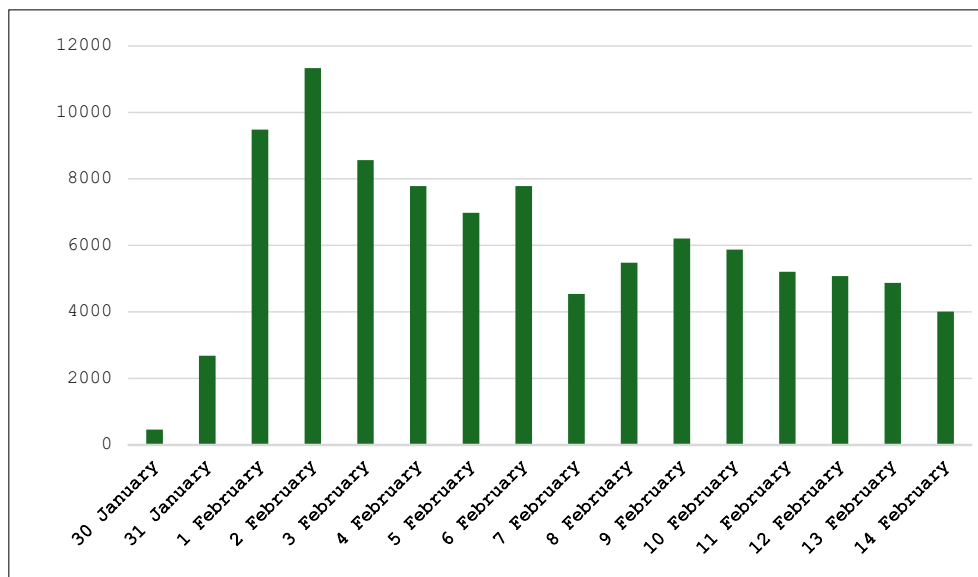


Fig. 2. The number of comments per day on newly created Reddit forums r/WallStreetSilver and r/SilverSqueeze
Source: own analysis based on Reddit data

Rys. 2. Liczba komentarzy dziennie na nowo utworzonych forach Reddit r/WallStreetSilver i r/SilverSqueeze

Phase 5 – Decline (February 2–4, 2021)

Silver failed to sustain the 30 USD threshold, drifting lower as retail coordination waned. Media reports highlighted the fading momentum, and attempts to push prices higher met steady selling pressure. Without a unified narrative, social media chatter thinned, and ETF flows normalized (Constable 2021). Dealers replenished stocks, premiums fell, and the market regained equilibrium. By February 4, prices hovered around pre-surge levels, reflecting traditional industrial and investor demand (Mining.com 2021). Analysts concluded that while the silver episode demonstrated retail interest, it underscored the difficulty of orchestrating a commodity squeeze. This final phase contrasted sharply with the GameStop's trajectory, proving that market structure, supply fundamentals, and liquidity ultimately shape price outcomes.

3.2. Reasons behind the Silver Squeeze of 2021

There may be several reasons the retail investors picked silver as a target for a squeeze. Based on the research on the Twitter hashtag #Siversqueeze and comments from the Reddit forums r/SilverSqueeze, r/WallStreetSilver, and r/WallStreetBets, we can identify seven reasons for the squeeze:

1. Quantitative easing involved purchasing government bonds by central banks using newly created money. This action of central banks increased bond prices. In many countries, nominal yields of bonds were negative (for example, in Germany); in others, even if the bond yields offered yields above zero, inflation and inflation expectations caused the real yields (after inflation) to be negative. This has driven investors to other types of investments. Moreover, central banks supplied the market with hundreds of billions of dollars, trying to find profitable investments.
2. Short squeeze on GameStop. Investors' success and substantial potential returns caused them to look for similar cases. GME was a similar case; others participated in the Silver Squeeze. Their initial discussion about squeezing the silver market appeared on the r/WallStreetBets forum on Reddit.
3. Silver bugs. Silver bugs are dedicated investors who strongly believe in the value of silver as a hedge against economic instability and inflation. They tend to accumulate silver over long periods and advocate their investment to others. Silver bugs were pivotal during the 2021 Silver Squeeze by promoting silver investment heavily on social media platforms and other forums. Their collective actions and the ensuing public interest contributed significantly to the surge in silver demand, exacerbating the shortage and propelling market prices to new heights.
4. The rise of social media platforms played an important role in the organization of investors and allowed for the transfer of investment ideas. Before social media, information was controlled by mainstream media.
5. Stimulus checks also played a role in igniting the Silver Squeeze. An additional sum of money caused an increase in savings rates among many individuals. Those funds allowed for the purchase of silver and silver-related investments. Many comments and memes suggested using stimulus checks to purchase assets.
6. The advent of zero-commission trading platforms, increased retail participation, and the rise of online investor forums have reshaped financial markets. Easy-to-use platforms provided investment opportunities for many investors to buy physical silver ETFs.
7. Hunt brothers – The Hunt brothers' attempt to corner the silver market in the late 1970s and early 1980s laid the groundwork for future squeezes, including the 2021 Silver Squeeze. Their actions demonstrated the potential for coordinated buying to influence silver prices, dramatically inspiring subsequent generations of investors. Their historical impact provided a blueprint for leveraging market vulnerabilities, fueling the determination and methods used in the recent silver surge.

3.3. The model of action

The model of action and reasoning behind the short squeeze of silver in 2021 is presented in Figure 3.

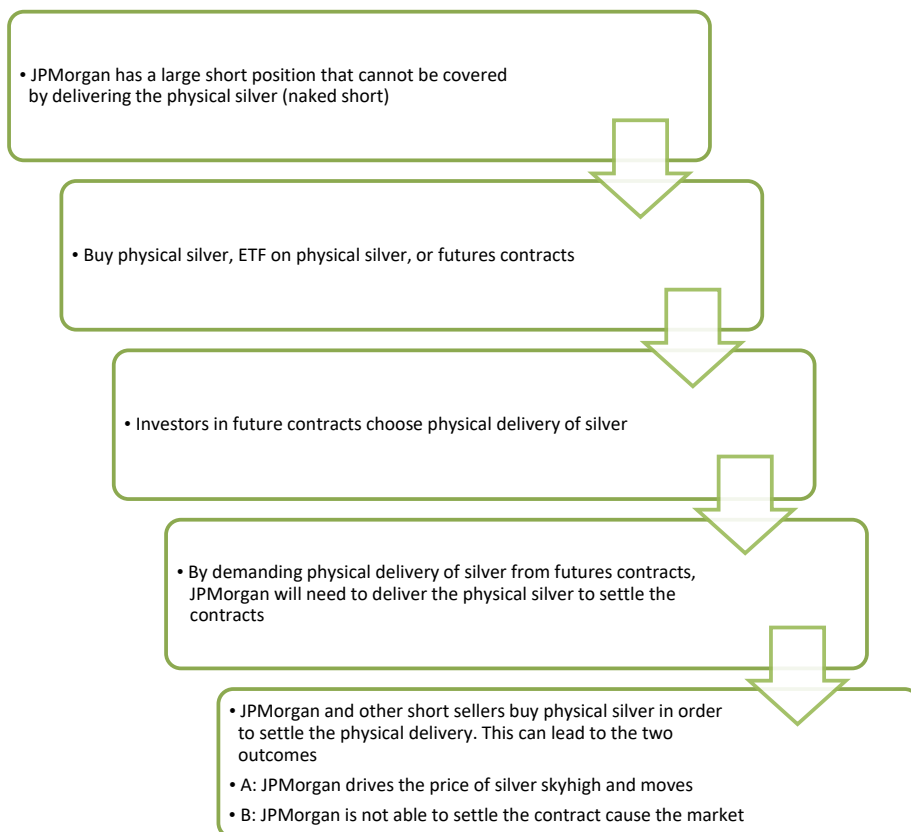


Fig. 3. Model of action for the 2021 Silver Squeeze

Source: own analysis

Rys. 3. Model wyciskania krótkich pozycji na rynku srebra w 2021 r.

1. The first phase of the Silver Squeeze lies in the assumption that large financial institutions, such as JPMorgan, hold a significantly short position in silver contracts. This short position is a naked short, which means that JPMorgan does not possess the silver to deliver but manipulates the market to profit from the suppressed price of silver. However, unlike a covered short, where the institution owns the underlying asset, a naked short is executed without holding the physical silver to back the contract. This creates a situation where the short-seller is exposed to substantial risk if required to deliver the actual metal because they must acquire it at market prices that could have risen dramatically.
2. The second phase starts when the external market participants identify this vulnerability, and investors take appropriate actions to capitalize on the short position that does not have physical collateral. People purchase physical silver in bars and coins or invest in ETFs, which invest in shares of companies holding physical silver in vaults. They may

also enter into futures contracts, which require the seller to deliver silver at some point in the future. Such coordinated buying pressure continues to shrink metal availability in the market. It can thus strain the amount of easily accessible metal, pushing the prices of silver up as many investors try to get hold of actual physical silver.

3. As more investors hold futures contracts, a critical juncture occurs when they opt for physical delivery. Futures contracts generally allow for cash or physical settlement, meaning the buyer can request the actual commodity rather than just a financial offset of profits. Usually, many futures contracts settle financially without changing hands on the underlying commodity. However, in the Silver Squeeze, a large group of contract holders might exercise their right to take delivery of real silver. This puts added pressure on the short-sellers, especially if they initially expected to simply settle positions financially.
4. The need for physical delivery intensifies the pressure. This includes JPMorgan and other big institutions that have taken a short position. Whether JPMorgan or any other institution holding a large naked short position, the short-seller is now bound by contract and must enter the market to acquire the silver. However, if many investors decide to buy the commodity, the short-seller may struggle to find the physical silver easily and at a reasonable cost. The short-seller then has to buy the metal at higher prices to meet the contract's delivery requirements, which may cause the short-seller to suffer significant losses and reduce the amount of physical silver available in the market.
5. Given these pressure-cooker conditions, one of two key outcomes may emerge. First, JPMorgan or other large short-sellers could cause the price of silver to soar to unprecedented levels. At the same time, they try to meet their delivery obligations using physical metal, which may be challenging to find and may significantly reward the early buyers. On the other hand, if these short-sellers cannot find enough physical silver to satisfy delivery requests, either because the metal is not readily available or is too costly – they may become insolvent. Such a default would affect the financial markets, particularly affecting the credibility of commodity exchanges and futures markets. In both cases, the Silver Squeeze shows that focused buying and insistence on the physical commodity can shake large short sellers' positions, if not crush them.

3.4. Supply, demand, and price – testing the impact

To assess whether retail investors generated statistically significant demand for silver during the 2021 Silver Squeeze, we analyzed retail silver sales data provided exclusively to this research by one of the largest Polish sellers of precious metals to retail investors (Mennica Polska). The price data are presented in Figure 4. We focused specifically on the two critical event days, February 1 and February 2, 2021, and compared retail sales volumes (measured in ounces) on these dates against typical daily retail volumes calculated across an extended period (December 2020–March 2021). The average daily sales in this period were 184 ounces, with a standard deviation of 314 ounces. On February 1, 2021, retail

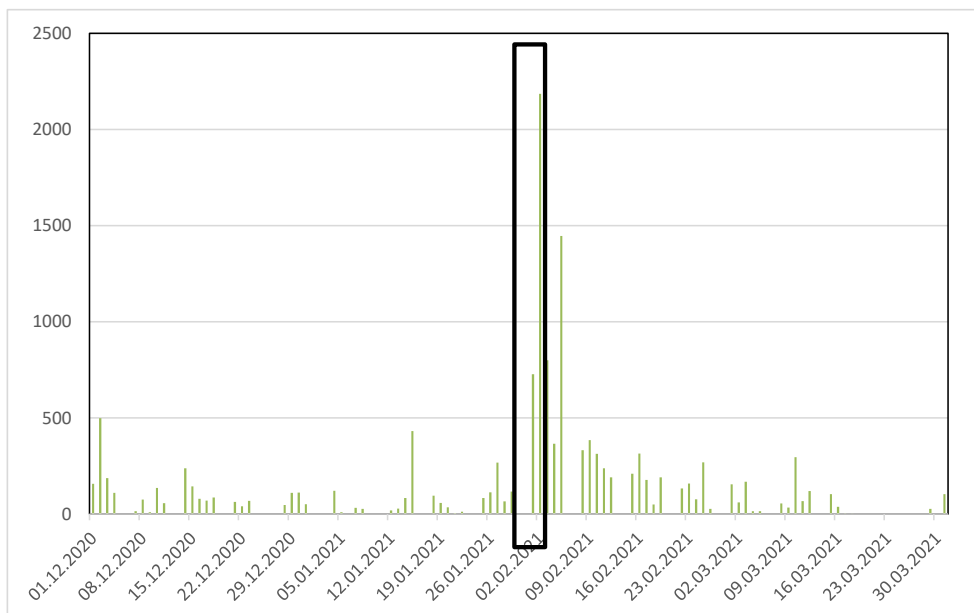


Fig. 4. Demand for physical silver in troy ounces in Mennica Polska

Source: own calculations based on data shared by Mennica Polska

Rys. 4. Popyt na srebro fizyczne w uncjach trojańskich w Mennicy Polskiej

silver sales reached 728 ounces, significantly higher than the daily average observed in the broader period. The statistical analysis produced a z-score of 2.82 and a p-value of 0.00479, indicating statistical significance at the 99% confidence level ($\alpha = 0.01$). This marked increase demonstrates a significant rise in retail demand coinciding precisely with the initiation of the Silver Squeeze event. The retail demand surge intensified dramatically on February 2, 2021, with sales spiking to an extraordinary 2185 ounces. The statistical significance of this surge was extremely high, yielding a z-score of 9.93 and an exceptionally low p-value, strongly confirming an unprecedented retail demand event. These results robustly validate hypothesis H1, providing clear statistical evidence that retail investor demand for physical silver experienced an extraordinary and highly significant increase during the Silver Squeeze. In conclusion, the retail sales data analysis convincingly confirms that retail investors created a statistically significant surge in physical silver demand during the 2021 Silver Squeeze, aligning precisely with our initial research hypothesis (H1).

A similar impact was seen on the global markets, which can be indicated by the volume of futures contracts traded on Commodity Exchange, Inc. (COMEX) (Figure 5). To test the hypothesis that retail investor activity significantly increased the trading volume for silver futures during the 2021 Silver Squeeze, we performed a statistical analysis of daily transaction volumes of silver futures contracts. Specifically, we compared the trading

volumes observed on the two critical event dates, February 1 and February 2, 2021, against typical trading volumes calculated from a broader sample period (December 2020–March 2021). The average trading volume in the period was 95.09 thousand contracts, with a standard deviation of 48.97 thousand. On February 1, 2021, silver futures trading volume surged dramatically to 372 thousand contracts, resulting in a z-score of 7.88 and an extremely low p-value. This indicates that the increased demand is statistically significant at a 99% confidence level ($\alpha = 0.01$). The enormous spike in volume aligns precisely with the hypothesis that coordinated retail investor activity created an extraordinary surge in market demand for silver futures contracts. Similarly, on February 2, 2021, the trading volume remained exceptionally high at 233 thousand contracts. This yielded a z-score of 3.98 and an extremely low p-value, again highly significant statistically at the 99% confidence level. The persistently elevated volume further supports the claim that retail investors actively participated in unprecedented demand during the event, even as the price sharply corrected. These results support hypothesis H1, providing robust statistical evidence that retail investor activity significantly increased silver futures demand during the Silver Squeeze event. The extraordinarily high and statistically significant volumes on these critical days illustrate retail investors' collective ability to impact commodity markets through coordinated trading.

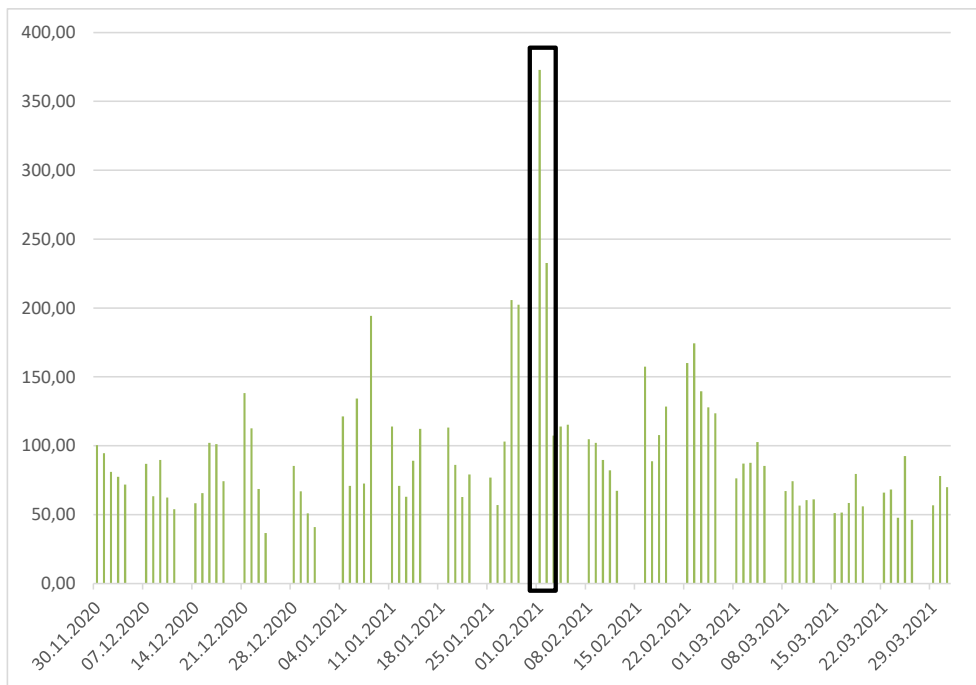


Fig. 5. The volume of futures contracts traded on COMEX in thousand contracts

Source: own calculation based on COMEX

Rys. 5. Wolumen obrotu kontraktami terminowymi na giełdzie COMEX w tys. kontraktów

In conclusion, the statistical evidence demonstrates that retail investor activity during the 2021 Silver Squeeze generated a temporary but highly significant surge in the volume of silver futures contracts traded, fully aligning with our initial research hypothesis (H1).

Figure 6 shows the prices of futures contracts at the end of each day. In the period from December 2020 to March 2021, the average price of the silver contract was 2598, with a daily standard deviation of 112.45 and a standard deviation of a daily return of 2.56%. On February 1, 2021, silver prices increased dramatically by 11.42%. Statistical testing produced a z-score of 4.93 and a p-value of 0.00000084, indicating that this upward price movement was statistically highly significant at a 99% confidence level ($\alpha = 0.01$). Such a substantial single-day increase strongly suggests that coordinated retail investor activity, as hypothesized, created exceptional market pressure, significantly driving silver prices upwards. Conversely, the next trading day (February 2, 2021) saw a sharp price reversal with a 10.25% decline. This movement was also highly significant statistically, with a z-score of -4.33 and a p-value of 0.000015, again significant at the 99% confidence level. This rapid correction underscores the temporary nature of retail-driven price impacts on a highly liquid commodity market. These results robustly support hypothesis H2, confirming that retail investors significantly influenced the silver market, albeit temporarily. The next day's swift

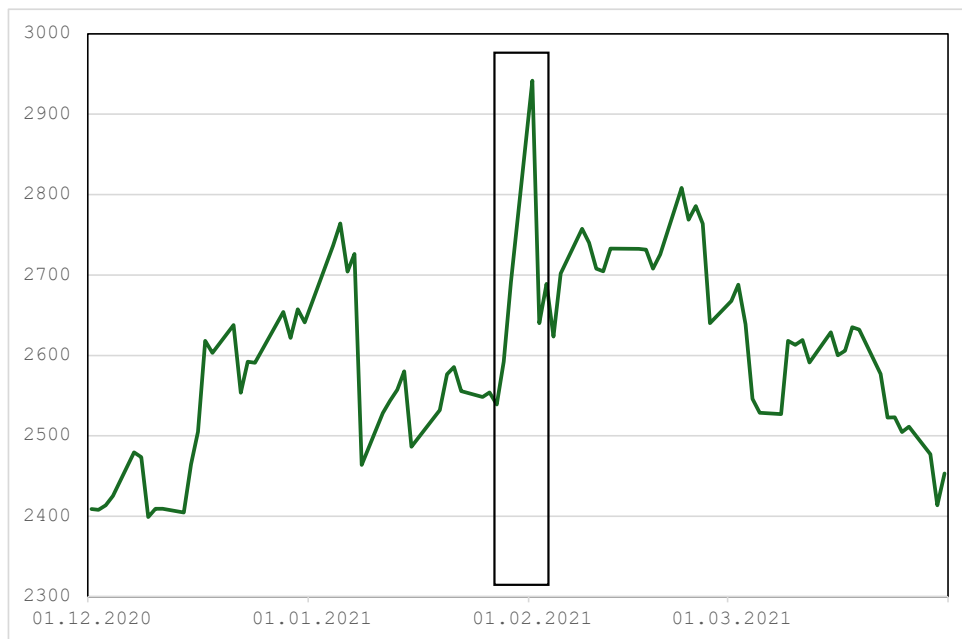


Fig. 6. Price of a futures contract on silver on COMEX
Source: own calculation based on COMEX

Rys. 6. Cena kontraktu terminowego na srebro na giełdzie COMEX

reversal emphasizes retail investors' challenges in sustaining such impacts without ongoing coordinated activity and institutional backing. In conclusion, the statistical evidence indicates that retail investor actions during the Silver Squeeze caused a temporary but highly significant anomaly in silver prices, aligning firmly with the predictions outlined in our initial research hypothesis (H2).

The contracts are delivered in series; thus, the increased demand for silver should be seen over a longer period. A short squeeze of naked short positions (selling contracts without possessing physical silver) could be observed in stock warehouses, as presented in Figure 7. The level of warehouse silver stock rose steadily until early 2021. On February 3, 2021, the Silver warehouse stock notched the highest level in many years: 399.77 million ounces. From that day onward, the warehouse stock level reversed its upward trend and began declining. This is precisely the moment when the Silver Squeeze happened. In May 2021, the COMEX warehouse held 50 million fewer ounces of silver. This marked a clear reversal in the previous trend. Before the Silver Squeeze, the stock was systematically increasing, and after the Silver Squeeze, we can observe the trend reversion.

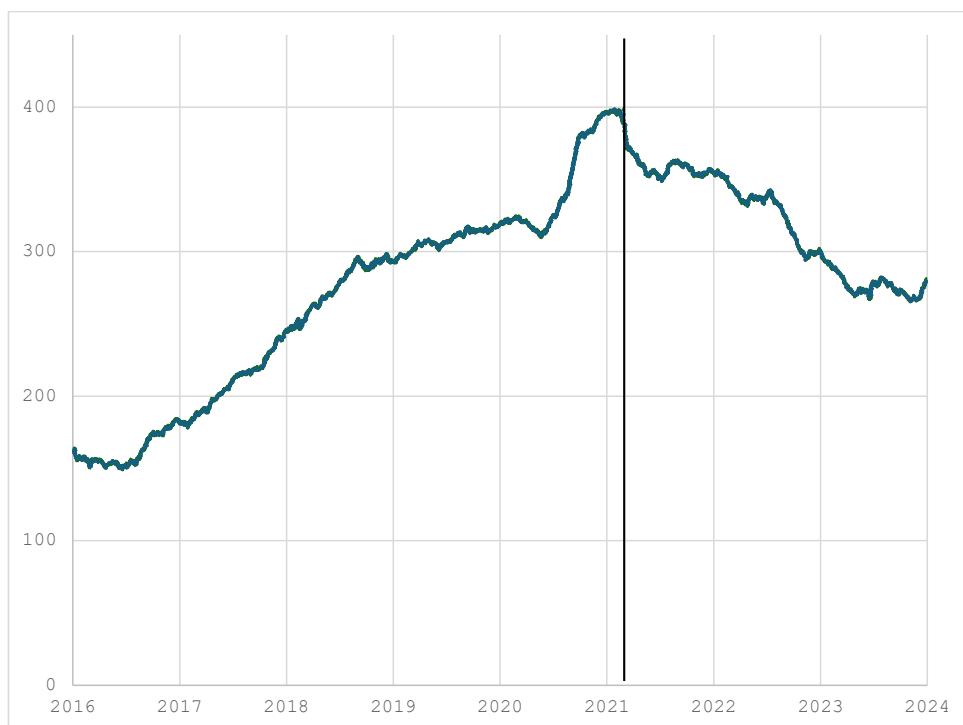


Fig. 7. COMEX – Silver Warehouse Stock in million troy ounces
Source: own creation based on Macromicro.me and COMEX

Rys. 7. COMEX – Zapasy srebra w magazynach w milionach uncji trojańskich

3.5. Comparison with other squeezes

Table 1 presents an analytical comparison between a traditional squeeze and the 2021 Silver Squeeze. This comparison considers the number of participants, capital engaged, investor type, planning and execution of the squeeze, market focus, legal implications, and the ability to influence public sentiment and price discovery.

There are many differences between the two types of squeezes. First, unlike a typical equity short squeeze, where a small group of large investors can dominate the market, the 2021 Silver Squeeze was organized by a large group of small investors.

Table 1. Comparison between the traditional squeeze on the stock market and the 2021 short squeeze on silver

Table 1. Porównanie tradycyjnego wyciskania krótkich pozycji na rynku akcji z wyciskaniem krótkich pozycji na rynku srebra w 2021 r.

Aspect	Traditional squeeze (stock market)	2021 Silver Squeeze (commodity markets)
Number of participants	A small group of investors.	A large group of investors.
Capital of investors	Each investor possesses huge capital and often uses leverage.	Each investor has small capital.
Investor type	Investment professionals with high knowledge and experience.	Retail investors with various knowledge and expertise.
Planning	Highly planned, often based on strategic accumulation of positions and deep market analysis.	Emergent and semi-spontaneous, driven primarily by crowd sentiment and online forums.
Execution	Carefully executed and coordinated between participants.	There is a lack of central coordination, and since there is no plan, there is no execution.
Market focus	Typically, it focuses on a specific security with a constrained supply. The institution can carefully target vulnerabilities in market structure.	Attempts to influence a broad commodity market with vast liquidity and complex global supply chains. Retail investors rely mainly on publicly available information, hashtags, and viral momentum rather than detailed supply-demand research.
Response from exchanges and regulators	Institutional squeezes, if detected, draw immediate regulatory scrutiny. A single entity is identifiable, making it easier for regulators to investigate and impose sanctions if manipulation is proven.	Dispersed responsibility and anonymity of numerous retail participants reduce the likelihood of pinpointing a single manipulator. Regulators face challenges attributing coordinated intent, complicating enforcement, and making direct regulatory action less straightforward.
Influence on public opinion and media	Traditional squeezes often occur quietly, without significant public fanfare, and are perceived negatively. Participants are usually labeled speculators and manipulators.	Retail-driven squeezes gain traction by amplifying narratives through social media. The general public can perceive this positively since many content creators and influencers participate in the squeeze.

Source: own analysis.

The two types of squeezes also differ significantly regarding the target of the squeeze. Traditional squeezes usually target illiquid, thinly traded stocks. The thin market helps to leverage institutional investors' significant assets. The participants of the 2021 squeeze targeted the highly liquid commodity market. A successful squeeze could potentially trigger systemic risks.

Another differentiating factor is knowledge. Institutional investors possess deep knowledge of market dynamics and hire professional asset managers with experience. Retail investors usually have limited knowledge of financial instruments and are heavily influenced by random anonymous posts on social media.

The knowledge and capital allow professional investors to prepare and plan the squeeze in advance. Scenario analysis, risk management, and decision trees help to make informed and efficient decisions. This stands in stark contrast to the Silver Squeeze of 2021, which was spontaneous, unplanned, and emotional.

Institutional investors prepare transactions and execute them step by step. This controlled approach enables them to navigate the process more rationally. Retail investors, on the other hand, attack the market without a plan. Thus, the 2021 Silver Squeeze was driven by social media sentiment and anonymous forum comments. Because there was no plan, there was no execution, which affected the process.

The 2021 Silver Squeeze strategy was not centrally coordinated but evolved due to discussions and narratives posted online. Because there is no single entity but rather a collective market force, it is hard to accuse someone of market manipulation. In this regard, retail investors have an advantage over institutional investors, who may be subject to scrutiny by market supervisory authorities.

Lastly, it is worth mentioning that one of the key drivers behind the 2021 Silver Squeeze was the influence of “silver bugs” – dedicated investors with a strong belief in the value of silver as a hedge against economic instability and inflation. These investors played a pivotal role by promoting silver investment heavily on social media platforms and other forums, contributing significantly to the surge in demand. The collective actions of silver bugs and the ensuing public interest exacerbated the shortage of physical silver, propelling market prices to new heights. Additionally, the rise of zero-commission trading platforms and increased retail participation reshaped the financial markets, enabling more individuals to engage in this market activity.

The outcomes of the 2021 Silver Squeeze are multifaceted. On one hand, the increased demand and subsequent price surge could lead to significant profits for those who invested early, validating the collective strategy of retail investors. On the other hand, the volatility and speculative nature of such a squeeze could result in substantial losses for many participants, especially those who entered the market at its peak. The broader implications for the market include heightened scrutiny from regulatory bodies and potential changes in market regulations to address the influence of decentralized, crowd-driven investment activities.

3.6. Results of the squeeze

The short squeeze in the silver market in 2021, orchestrated by a coalition of retail investors inspired by the GameStop saga, ultimately concluded with a return to market equilibrium. Initially, the influx of buying pressure led to a significant but brief spike in silver prices and increased inflows into silver ETFs. There may be several reasons for the failure of the squeeze. First, the silver market is larger than the GameStop market capitalization, and the supply and demand are more flexible. Moreover, the extensive network of institutional participants and large institutions such as JPMorgan can manage shocks. Second, the absence of centralized leadership and coordinated follow-through among retail investors further contributed to the rapid dissipation of momentum. Third, the squeeze competed with other market events, such as the GameStop. Many accounts that promoted the Silver Squeeze were banned from the r/WallStreetBets Reddit forum. The moderators saw the Silver Squeezers as a threat, which diverted investors' attention from GameStop. Consequently, they were forced to establish their own forums, r/SilverSqueeze and r/WallStreetSilver.

Despite being unsuccessful, the actions of the investors increased demand for physical silver (Table 2). In 2021, the total demand for silver increased by 173 million troy ounces, with investment demand contributing 76 million troy ounces. This year saw a significant impact from the Silver Squeeze, with investment demand accounting for 26% of the total demand. In 2022, the total demand continued to rise. The elevated investment demand from 2021 persisted, maintaining its share at 26% of the total demand. In 2023, there was a decrease in total demand by 84 million troy ounces, accompanied by a decline in investment demand

Table 2. Global supply and demand for silver in million troy ounces

Tabela 2. Globalna podaż i popyt na srebro w milionach uncji trojańskich

Year	2017	2018	2019	2020	2021	2022	2023	2024
Mine production	864	851	837	783	829	837	831	824
Recycling	147	149	148	164	174	177	179	179
Total supply	1,012	1,001	1,000	957	1,004	1,015	1,011	1,004
Net physical investment	156	166	187	208	284	337	243	212
Net physical investment demand as a % of total demand	16%	17%	19%	22%	26%	26%	20%	17%
Total Demand	971	999	1,004	927	1,100	1,279	1,195	1,219

Source: own calculation based on the Silver Institute Supply and Demand Report (2024).

of 94 million troy ounces. The percentage of investment demand dropped to 20%, reflecting a shift in market dynamics. In 2024, the total demand increased slightly by 24 million troy ounces, with investment demand decreasing by 31 million. Investment demand accounted for 17% of the total demand, further reducing its influence.

The short squeeze, while unsuccessful, had some lasting consequences on the market. For instance, older generations of silver bugs, fascinated by the short squeeze in 2021, praised the attempt and viewed it positively from an educational point of view. Moreover, many young investors were educated about the silver market and how a short squeeze works, and were motivated to save money. Furthermore, the squeeze demonstrated the market's resilience. The attack showed that the commodity market is not risk-free, and short sellers must take into account the possibility of a squeeze, which can, in turn, reduce their short positions to manage the risks.

Conclusion

This paper addresses a significant research gap by presenting the first analysis of the 2021 Silver Squeeze, which has been largely overlooked compared to the GameStop short squeeze. By examining the event and its causes, the paper offers insights into the mechanisms of retail-driven activism in the commodity markets, a conceptual model of action, and a comparison to traditional short squeezes.

Our analysis and statistical tests enabled us to answer the research questions posed at the beginning. Firstly, the Silver Squeeze significantly impacted the demand for physical silver in the short term; however, the long-run results are mixed. While the warehouse stock of silver in COMEX began a downward trend after the squeeze, the demand for physical silver as an investment stagnated two years later. Secondly, retail investors had a statistically significant impact on silver prices. However, the effect was seen only in the short term. The prices reverted to the mean after a couple of days.

Third, our findings demonstrate that the Silver Squeeze emerged from a unique confluence of factors: quantitative easing and negative real yields, the success of the GameStop short squeeze, mobilization through social media platforms, and the historical influence of “silver bugs” and the Hunt Brothers’ legacy. By analyzing the five phases of the squeeze, from its initiation to its rapid decline, we reveal how investor sentiment and narrative momentum, amplified through platforms like Reddit, were initially able to drive short-term price surges in silver.

Fourth, the day-by-day analysis revealed distinct patterns and dynamics of the 2021 Silver Squeeze; this enabled us to develop a model of the mechanisms of action in the squeeze. This model shows how short squeezes can occur and how they may unfold, particularly in the commodities markets. Subsequently, the model provided a basis for comparing the traditional (institutional investor-driven) squeeze with the retail investor squeeze. The 2021 Silver Squeeze, unlike traditional equity squeezes led by a few large institutional investors,

was driven by a decentralized crowd of retail traders with limited capital and financial knowledge, mobilized primarily through social media platforms. While institutional squeezes are typically well-planned, targeting illiquid stocks and executed with precision, the Silver Squeeze was spontaneous, lacked coordination, and attempted to move a highly liquid global commodity market, making success unlikely.

Despite the failure to corner the market, the Silver Squeeze of 2021 had lasting effects, raising awareness of market vulnerabilities, empowering retail investors, and prompting regulatory attention to the influence of crowd-driven trading. However, this episode has some lasting implications for the financial markets. It shows how the role of retail investors is changing, given the availability of digital platforms, zero-commission trading, and real-time communication. Thus, retail-driven market activity may reveal structural weaknesses. Moreover, it is worth noting that the event tested the market's stability and raised regulatory concerns. Therefore, regulators must work towards preventing market volatility while enabling more people to access the markets.

This study not only fills a literature gap but also paves the way for future research that may include the analysis of potential retail investor activism in other markets. Moreover, the 2021 Silver Squeeze provides valuable lessons that may be used as a case study for market regulators, professional investors, and risk managers. It illustrates the strengths and constraints of collective retail efforts while demonstrating the robustness of silver markets. As the markets become more accessible to retail investors, similar cases may appear in the future.

The Author has no conflicts of interest to declare.

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THE 2021 SILVER SQUEEZE – ANALYSIS OF THE SHORT SQUEEZE ON THE COMMODITY MARKET

Keywords

silver, silver market, commodities, Silver Squeeze

Abstract

On February 1, 2021, silver prices increased by 10%; retailers did not have physical silver for sale, and the media pointed to massive demand for silver. This event was caused by an unusual activity by retail investors that aimed to corner the silver market. The 2021 Silver Squeeze represents an interesting case study for analyzing retail investors' actions on commodity markets. However, it is poorly analyzed in the literature because another squeeze on GME stocks overshadowed it. This paper aims to fill the research gap. We examine the event's phases, drivers, and outcomes using a mixed-method approach, including quantitative price and market data analysis, qualitative Reddit content evaluation, and conceptual modeling. We examine the day-by-day events leading to the anomaly in this commodity. This allowed us to understand the motivations of the retail investors. We found key motivations that ignited a decentralized campaign to short-squeeze the silver market, such as Quantitative Easing, GME success, Hunt Brothers history, the rise of social media platforms, low-commission retail brokers, silver bugs, and stimulus checks. This study also presents a model – the conceptual model of action – which helps explain the Silver Squeeze. This model allows for an understanding of retail-driven buying, supply-demand mismatches, and pressures for physical delivery. Finally, we compare the Silver Squeeze of 2021 on commodity markets with traditional squeezes. The comparison showed remarkable differences from the traditional squeeze. The findings also have broader implications for regulators, emphasizing the need to balance market stability with the accessibility of retail-driven financial innovation.

SILVER SQUEEZE 2021 – ANALIZA WYCISKANIA KRÓTKICH POZYCJI NA RYNKU TOWAROWYM

Słowa kluczowe

srebro, rynek srebra, surowce, Silver Squeeze

Streszczenie

1 lutego 2021 roku ceny srebra wzrosły o 10%, detaliczni sprzedawcy nie mieli fizycznego srebra na sprzedaż, a media wskazywały na ogromny popyt na ten surowiec. Wydarzenie to było spowodowane nietypową aktywnością inwestorów detalicznych, którzy dążyli do zdominowania rynku srebra. Silver Squeeze z 2021 roku stanowi interesujące studium przypadku do analizy działań inwestorów detalicznych na rynkach surowcowych. Jednakże w literaturze temat ten jest słabo analizowany, ponieważ przyćmił go inny squeeze na akcjach GME. Niniejszy artykuł ma na celu wypełnienie tej luki badawczej. Analizowane są etapy, przyczyny i skutki tego wydarzenia przy zastosowaniu podejścia

mieszanego – w tym ilościowej analizy cen i danych rynkowych, jakościowej oceny treści z Reddita oraz modelowania koncepcyjnego. Przeanalizowano dzień po dniu wydarzenia prowadzące do tej anomalii na rynku omawianego surowca. Pozwoliło to zrozumieć motywacje inwestorów detalicznych. Zidentyfikowano kluczowe czynniki, które zapoczątkowały short squeeze na rynku srebra, takie jak luzowanie ilościowe, sukces GME, historia braci Hunt, rozwój platform mediów społecznościowych, detaliczni brokerzy o niskich prowizjach, entuzjaści srebra oraz czeki stymulacyjne. Niniejsze badanie pozwoliło na skonstruowanie modelu działania Silver Squeeze. Model ten pozwala zrozumieć zakupy napędzane przez inwestorów detalicznych, niedopasowanie podaży i popytu oraz presję na fizyczną dostawę. Na koniec porównano Silver Squeeze z 2021 na rynkach z tradycyjnymi squeeze’ami. Porównanie wykazało znaczące różnice w stosunku do tradycyjnego squeeze’u. Wyniki mają także szersze implikacje dla regulatorów, podkreślając potrzebę równoważenia stabilności rynku z dostępnością innowacji finansowych napędzanych przez inwestorów detalicznych.

