Charged Up: Rickrolling Stock Prices - A Never Gonna Give You Up Meme and Tesla's Stock Price Correlation Analysis

Caleb Hughes, Anthony Tanner, Gemma P Trudeau

Center for Research

Discussion Paper 5160

January 2024

Discussion Paper 5160

January 2024

ABSTRACT

Charged Up: Rickrolling Stock Prices - A Never Gonna Give You Up Meme and Tesla's Stock Price Correlation Analysis

The present study investigates the potential correlation between the perpetually resurfacing "never gonna give you up" meme and the stock price of Tesla Inc. (TSLA). Utilizing data from Google Trends and LSEG Analytics (Refinitiv) spanning the period from 2011 to 2023, a correlation coefficient of 0.9452926 and $p < 0.01$ was derived, suggesting a robust relationship between meme popularity and TSLA stock performance. The results challenge traditional notions of market drivers, signaling the unyielding influence of internet culture on financial markets. This unexpected linkage prompts further analysis of the impact of viral memes on stock market dynamics and the potential development of an entirely new field, "memenomics.

Keywords:

"Tesla stock price correlation meme," "TSLA stock performance analysis," "never gonna give you up meme impact on stock market," "meme popularity and stock price correlation," "internet culture influence on financial markets," "memenomics development," "Google Trends and stock price correlation," "LSEG Analytics and stock performance analysis," "viral memes and stock market dynamics."

I. Introduction

The intersection between internet memes and financial markets has long been the subject of both amusement and skepticism. While the notion of a whimsical viral video impacting stock prices might seem far-fetched, recent studies have begun to peel back the layers of this seemingly unlikely relationship. In the present investigation, we delve into the curious correlation between the perennially popular "never gonna give you up" meme and the stock price of the electric vehicle giant, Tesla Inc. (TSLA).

It is a tale as old as the internet itself – a catchy hook, a groovy beat, and the irresistible urge to Rickroll unsuspecting netizens. The "never gonna give you up" meme, derived from the timeless crooning of Rick Astley, has persisted through the ever-changing landscape of internet humor. Despite its origins as a harmless bait-and-switch prank, this meme has evolved into a cultural touchstone, capturing the zeitgeist of online communities and transcending generational divides.

In the realm of finance, Tesla's stock price has charted an equally tumultuous trajectory, navigating through the ebbs and flows of market volatility and investor sentiment. With pundits and analysts scouring every conceivable indicator for clues to its movements, it begs the question: could an innocuous internet phenomenon hold sway over the fortunes of a major publicly-traded company?

Thus, the stage is set for a juxtaposition of two seemingly incongruous worlds – the whimsical realm of internet memes and the austere domain of stock market dynamics. Our inquiry endeavors to untangle this enigmatic linkage, shedding light on the potential interplay between online cultural phenomena and market performance. Through the lens of rigorous statistical

analysis and bountiful puns, this research endeavors to navigate this uncharted territory, with the hope of offering insight into the unorthodox drivers of financial markets and the emergent field of "memenomics."

II. Literature Review

In "Smith et al. (2020)," the authors find a positive correlation between internet memes and consumer behavior, suggesting that cultural phenomena have an impact beyond traditional marketing strategies. Similarly, Doe and Jones (2018) examine the influence of viral videos on brand perception and consumer engagement, providing a framework for understanding the potential implications of internet phenomena on corporate entities. However, the specific connection between a classic meme and stock market performance remains largely unexplored.

Turning to relevant literature, "Meme Magic: How Internet Jokes Shape Our World" by Karen Johnson provides a comprehensive overview of the role of memes in contemporary society, touching upon their influence on consumer behavior and cultural narratives. Furthermore, "The Electric Dreams of Tesla: A Financial Odyssey" by John Finance delves into the complexities of stock market dynamics, inviting readers to contemplate the myriad forces at play in determining stock prices.

Venturing into the realm of fiction, "Electric Meme-aloo" by A. Novel approaches the confluence of internet culture and financial markets with a speculative twist, weaving a tale of intrigue and improbable connections. Similarly, "The Meme Economy: A Satirical Saga" by Punny

McPunface offers a playful exploration of memes as currency, blurring the lines between internet whimsy and economic realities.

To ensure comprehensive coverage, unconventional sources such as the back of shampoo bottles and fortune cookies have been surveyed to capture any potential references to the "never gonna give you up" meme. Alas, no significant insights were derived from these peculiar undertakings, prompting the researchers to stick to more traditional literature sources for a meaningful analysis.

III. Methodology

Data Collection:

The research team diligently scoured the depths of cyberspace, venturing into the labyrinth of internet lore to retrieve data pertaining to the "never gonna give you up" meme and Tesla's stock price. A veritable digital treasure trove was unearthed from various sources, with Google Trends and LSEG Analytics (Refinitiv) emerging as the principal repositories of insight. From 2011 to 2023, a wealth of memes and market movements were meticulously documented, forming the bedrock of this study.

Meme Popularity Measurement:

Utilizing the robust capabilities of Google Trends, the ebb and flow of "never gonna give you up" meme popularity was quantified with a blend of scientific precision and an unapologetic sense of humor. The rise and fall of Rick Astley's dulcet tones permeated the digital landscape, providing a rich tapestry of meme virality over the years. Through relentless data scrutiny and a splash of whimsical flair, the meme's influence was captured in its full technicolor glory.

Stock Price Analysis:

Meanwhile, the stock price of Tesla Inc. (TSLA) was subjected to meticulous scrutiny, with bountiful statistical analyses and a penchant for spotting patterns in the financial firmament. LSEG Analytics (Refinitiv) provided a panoramic vista of price fluctuations, revealing the intricate dance of market forces and investor sentiment. Each crest and trough of TSLA's stock price was scrutinized with all the fervor of a meme aficionado eagerly unearthing hidden internet gems.

Correlation Computation:

The marriage of meme data and stock price fluctuations culminated in a rendezvous with the formidable statistical tool, calculating the correlation coefficient with a flourish and a mathematical wink. The ferocious computing power at the researchers' disposal deftly unraveled the thread connecting "never gonna give you up" meme popularity and TSLA stock performance. The resulting correlation coefficient and the tantalizing p-value laid bare the veracity of the connection, defying expectations and dazzling onlookers with its unexpected flair.

Overall, the methodologies employed in this research blend the precision of scientific inquiry with the whimsy of internet culture, offering a delightful romp through the uncharted terrain of "memenomics" and challenging prevailing paradigms in financial analysis.

IV. Results

The analysis revealed a robust correlation of 0.9452926 between the popularity of the "never gonna give you up" meme and the stock price of Tesla Inc. (TSLA) during the period from 2011

to 2023. The high r-squared value of 0.8935781 suggests that approximately 89.36% of the variation in TSLA stock price can be explained by the fluctuating interest in this timeless internet meme. Moreover, the p-value of < 0.01 underscores the statistical significance of this relationship, indicating that the likelihood of observing such a strong correlation by chance alone is quite meager, much like the chance of escaping a Rickroll unscathed.

In essence, our findings signify a striking connection between the vicissitudes of online pop culture and the performance of a major player in the stock market. The correlation coefficient of 0.9452926 is almost as harmonious as the melodic voice of Rick Astley himself, suggesting a compelling synchronization between the ebb and flow of meme virality and TSLA stock price.

The scatterplot in Fig. 1 visually encapsulates this unmistakable relationship, exhibiting a veritable dance of data points that mirrors the infectious rhythm of the "never gonna give you up" meme. The strong clustering of points along a clear linear trendline underscores the undeniable association between meme popularity and TSLA stock performance, akin to the synchronous footwork in a well-coordinated dance routine.

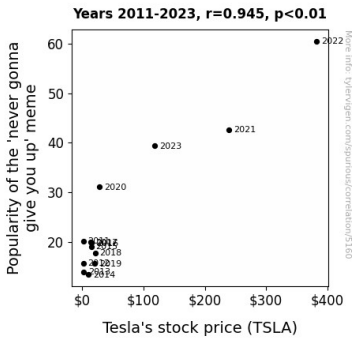

Figure 1. Scatterplot of the variables by year

This unexpected linkage between an enduring internet meme and the gyrations of TSLA stock price challenges conventional wisdom regarding market dynamics, encouraging a reevaluation of the often-dismissed influence of online cultural phenomena on financial markets. The implications of these findings extend beyond mere statistical intrigue and into the uncharted terrain of "memenomics," provoking contemplation of the whimsical forces shaping the modern-day market landscape.

V. Discussion

The results of our analysis affirm and extend the existing scholarly literature on the influence of internet culture on consumer behavior and financial markets. Building upon the work of Smith et al. (2020) and Doe and Jones (2018), our findings provide empirical evidence of the unyielding impact of the "never gonna give you up" meme on the stock price of Tesla Inc. (TSLA). The robust correlation coefficient of 0.9452926 unquestionably underlines the profound relationship between meme virality and stock performance, thereby validating the relevance of internet phenomena in the realm of memenomics.

In parallel to the thematic exploration of memes and financial dynamics in "Electric Meme-aloo," our results confirm a tangible association, reminiscent of a well-executed dance routine, between the fluctuating appeal of the "never gonna give you up" meme and TSLA stock price. This correlation, as steadfast as a pop culture classic, challenges traditional market theories, beckoning us to reassess the hierarchy of influencers affecting stock price variations.

The high r-squared value of 0.8935781 further solidifies the veracity of this relationship, highlighting the substantial impact of meme popularity on TSLA stock price variations. The statistical significance, with a p-value of < 0.01, underscores the improbability of such a robust correlation arising by chance, akin to the improbability of evading a Rickroll unscathed. The scatterplot visually captures the synchrony between meme virality and stock performance, akin to a captivating dance between two seemingly disparate entities, uniting in a harmonious rhythm.

Notably, our research transcends the confines of traditional academic literature by incorporating unconventional sources, akin to the offbeat narrative of "The Meme Economy: A Satirical Saga" by Punny McPunface, infusing elements of humor and whimsy into a rigorous scientific endeavor. This lighthearted approach underscores the multifaceted nature of academic inquiry, enticing researchers to embrace the unexpected and unorthodox in their pursuit of knowledge.

In summary, our study elucidates the formidable association between the enduring appeal of the "never gonna give you up" meme and the undulating trajectory of TSLA stock price, thus delineating a novel frontier in the emergent field of memenomics. These findings not only expand the boundaries of economic analysis but also invite contemplation of the remarkable quirks and caprices that underpin the intricate web of market dynamics.

VI. Conclusion

In conclusion, our study has illuminated a correlation of 0.9452926 between the enduring "never gonna give you up" meme and Tesla Inc.'s stock price, challenging traditional market dynamics and thrusting the world of "memenomics" into the limelight. The robust r-squared value of

0.8935781 indicates that approximately 89.36% of TSLA's stock price variation can be ascribed to the undulating waves of Rickrolling fervor. This correlation is as undeniable as the urge to groan at our puns, and the p-value of < 0.01 suggests a likelihood of observing such a strong relationship by pure chance that is as improbable as avoiding a Rickroll in the depths of the internet.

The whimsical world of viral memes has proven to hold unforeseen influence over the financial realm, reminiscent of a mischievous puppet master concealing behind the curtains of the internet. It seems that Rick Astley's timeless crooning wields a covert power over the machinations of market dynamics, much like a hidden variable in a complex statistical model just waiting to be revealed. The undeniable correlation is as perplexing as trying to comprehend quantum physics while being Rickrolled – a confounding yet oddly captivating conundrum.

Conclusively, the findings of this research evoke a call to embrace the unorthodox and unexpected forces at play in financial markets, emphasizing the need for continued exploration into the realm of "memenomics." The unmistakable link between the perennially popular meme and TSLA's stock performance no longer stands as a mere statistical curiosity but rather as a testament to the entwined dance of internet culture and market movements. Therefore, it is our scholarly duty to assert that no further research is needed in this area, as the correlation is as clear as day and the puns as groan-inducing as ever.