



ELSEVIER



Googling for Elon is the New MU-sic: Exploring the Relationship Between Google Searches for 'who is elon musk' and Micron Technology's Stock Price

Catherine Horton, Aaron Turner, Gina P Thornton

Institute of Advanced Studies; Cambridge, Massachusetts

KEYWORDS

Elon Musk, Google searches, Micron Technology, stock price, correlation, Google Trends, LSEG Analytics, Refinitiv, market performance, financial markets, stock market dynamics, investment strategy, tech investments

Abstract

In this study, we investigate the intriguing correlation between Google searches for 'who is Elon Musk' and the stock price of Micron Technology (MU). Combining data from Google Trends and LSEG Analytics (Refinitiv), we conducted a thorough analysis from 2005 to 2023. Our findings reveal a remarkably robust correlation coefficient of 0.9387471 and $p < 0.01$, indicating a strong connection between public interest in Elon Musk and the performance of Micron's stock. It seems that the market's affinity for Musk is providing some energy to MU's stock performance, creating a "Musk effect" that's anything but spacey. Our research unravels a novel dimension in financial markets, demonstrating that the reach of Elon Musk's influence extends beyond Tesla and SpaceX to play a quirky tune on the stock price of Micron Technology. It appears that investors not only love Musk's innovative spirit but also enjoy going on a "Musical" journey with related stock movements. These findings shed light on the interconnected nature of public curiosity and stock market dynamics, raising the question: Is Googling for Elon Musk the new secret ingredient to successful tech investments, or are we just experiencing another case of "Elon Musk-economics"?

Copyright 2024 Institute of Advanced Studies. No rights reserved.

1. Introduction

As we delve into the wacky and wonderful world of finance and internet inquiries, we can't help but wonder: is Googling for Elon

Musk the new MU-sic to investors' ears? With the rise of Elon Musk's cultural prominence, it seems that the stock market has caught a case of "Musk fever." We aim

to investigate the correlation between the Google search term "who is Elon Musk" and the stock price of Micron Technology (MU), seeking to unveil the enigmatic dance between public curiosity and techno-centric investments.

Now, before we dive into the statistical deep end, let's address the elephant in the room - or in this case, the "Elon" in the room. As we navigate the labyrinth of data analysis, it's crucial to remember that correlation does not imply causation - unless, of course, you're Elon Musk, in which case it implies a whole lot of things! In the words of Musk himself, "The first step is to establish that something is possible; then probability will occur." Well, we are here to determine not only the possibility but also the probability of Elon Musk's digital footprint leaving an imprint on Micron's stock market trajectory.

Taking a humorous detour into the realm of statistical puns, we challenge ourselves to uncover whether these findings serve as a mere statistical illusion or if they hoist a sturdy sail on the ship of market predictability. After all, correlation without thorough analysis may simply be an outbreak of "gigo" - garbage in, garbage out, or in this context, "givin' Musk a bad rap!"

In this investigation, we aim to illuminate the electrifying link between public interest in the enigmatic entrepreneur and the performance of a tech giant's stock. It may seem like a far cry from traditional economic indicators, but when Elon Musk is involved, it's always wise to expect the unexpected. As we embark on this statistical odyssey, let's buckle up and prepare ourselves for a wild ride through the uncharted territory of "Elon Musk-economics," an economic model so innovative, it might just launch itself into orbit!

2. Literature Review

In their seminal work, Smith et al. (2018) investigated the correlation between internet search trends and stock market performance, setting the stage for our exploration. Leveraging Google Trends data, the authors unearthed a compelling link between public curiosity and stock price movements, paving the way for further investigations into the whimsical world of web searches and financial fates. However, the question remained as to whether such trends would hold true for specific individuals, prompting our current pursuit of the peculiar connection between Google searches for "who is Elon Musk" and the stock price of Micron Technology (MU).

On a more lighthearted note, it's crucial to approach this research with a sense of humor - after all, we are delving into the world of high finance and internet quirkiness. As we dive into the statistical rabbit hole, it's important to remember that even data analysis can benefit from a touch of levity. In the wise words of Elon Musk, "I would like to die on Mars. Just not on impact." While we may not be on the brink of interplanetary exploration, our exploration of the Elon Musk-Micron Technology connection certainly feels like a journey to the stars!

Doe and Jones (2020) further contribute to the literature by examining the impact of public fascination with influential figures on stock market dynamics. Their findings suggest that figures with a charismatic and enigmatic presence, such as Elon Musk, may indeed stir the waters of financial markets, causing ripples in stock prices and investor sentiment. This brings us to our investigation - are Google searches for "who is Elon Musk" acting as the symphony conductor for Micron Technology's stock performance, or are we merely witnessing the comical dance of financial fluctuations to a cosmic beat?

In "Bizarre Business: The Weirdest Financial Market Anomalies," the authors

delve into the peculiarities of the stock market, unraveling the eccentricities that often defy traditional economic reasoning. Could the connection between Elon Musk's internet omnipresence and Micron Technology's stock price be the newest addition to this menagerie of market mysteries? It's almost as unpredictable as Elon's Twitter feed - you never know what you're going to get, but you can bet it'll be an entertaining ride!

"The Martian" by Andy Weir and "I, Robot" by Isaac Asimov may not directly delve into stock market intricacies, but their futuristic themes certainly echo the technological undercurrents of our investigation. After all, Elon Musk's ventures often seem like they've jumped straight out of a science fiction novel, blurring the lines between reality and imagination. Perhaps we are witnessing the intersection of technological fervor and financial fortune in a manner that would make even the most imaginative authors raise an eyebrow or two.

Now, to add a bit of nostalgic whimsy to our review, let's not forget the childhood cartoons and shows that carry a hint of relevance to our study. "The Jetsons" and "Futurama" may be animated worlds of futuristic fantasy, but their portrayal of technological advancements and quirky characters elicits a nod to the surreal blend of tech fascination and comedic undertones. If Elon Musk and Micron Technology were to join the cast of one of these shows, one can only wonder about the uproarious antics and market mayhem that would ensue!

As we embark on this unconventional journey through the annals of financial and internet peculiarities, let's remember to approach our findings with the same sense of curiosity and whimsy that propels us to ponder the unexpected links between internet searches and stock prices. After all, in the world of academic inquiry, a dash of humor may just be the missing ingredient to

unlock the hidden truths behind the enigmatic "Musk effect" on Micron Technology's stock performance.

3. Our approach & methods

To embark on our quest to unravel the intertwined tale of Google searches for "who is Elon Musk" and the stock price of Micron Technology (MU), we employed a series of data collection and statistical methodologies that were as detailed as Elon's visions for Mars colonization. Our data journey began with the acquisition of search volume data from Google Trends, where we meticulously tracked the frequency of searches related to the enigmatic entrepreneur over the period from 2005 to 2023. As we sifted through the digital haystack for inquiries about the man behind the Falcon rockets and electric vehicles, we couldn't help but ponder, "Is this the 'Musk-see' statistical relationship we've been searching for?"

Simultaneously, we delved into the financial realm, employing LSEG Analytics (Refinitiv) to amass historical stock price data for Micron Technology (MU) during the corresponding timeframe. Our data wranglers navigated through the vast sea of stock market fluctuations, seeking to ascertain the impact of Elon Musk's public intrigue on the tech giant's financial trajectory. With each fluctuation in search volume and stock price, we couldn't help but quip, "We've certainly MU-stered quite the data set!"

With the datasets in hand, we harnessed the power of statistical analysis to unearth the intricate connection between Google searches for "who is Elon Musk" and the performance of Micron's stock price. Through rigorous regression modeling, including autocorrelation and time series analysis, we sought to disentangle the web of curiosity-driven searches and market dynamics, all the while keeping an eye on

the ever-elusive "Musk-eteers" behind the search queries.

Furthermore, we didn't stop at mere correlation coefficients and significance levels. We delved deeper into the statistical cauldron, stirring in Granger causality tests to discern the direction of relationship between Google search activity and MU stock price movements. As we observed the statistical brew bubble and simmer, we joked, "Looks like we might be on the cusp of a 'Musk-tical' discovery!"

To address potential confounding variables and ensure the robustness of our findings, we conducted sensitivity analyses and explored alternative model specifications. We recognized the need to disentangle the potential effects of other tech luminaries, but it was clear that the allure of Musk's ventures truly stood out in our statistical constellation. It was an endeavor akin to navigating through the Solar System – only this time, our data points were the celestial bodies, and our statistical tools were our trusty telescopes aiming for the elusive "Musk-eteer" comet.

In summary, our methodology encapsulates a playful yet rigorous approach, akin to navigating a cosmic carnival of statistical analyses, all centered on the captivating gravitational pull between public curiosity about Elon Musk and the stock performance of Micron Technology. Our research embarked on an odyssey through the 'Musical' rollercoaster of statistical relationships, bringing forth a symphony of findings that may just redefine the melody of market analytics.

4. Results

The results of our analysis paint an illuminating picture of the relationship between Google searches for 'who is Elon Musk' and Micron Technology's stock price (MU) from 2005 to 2023. Our statistical

analysis unearthed a robust correlation coefficient of 0.9387471, indicating a strong positive correlation between the two variables. This implies that as interest in Elon Musk peaks in the virtual realms of Google searches, the stock price of Micron Technology also experiences a surge, creating a peculiar dance that could be considered the "Elon Musk Shake." It seems that whenever the question "who is Elon Musk" spikes in cyberspace, MU's stock price finds itself grooving to the beat.

The r-squared value of 0.8812461 further solidifies the strength of this correlation, explaining a whopping 88.12% of the variability in Micron Technology's stock price based on Google searches for 'who is Elon Musk'. This suggests that nearly 9 out of 10 MU price movements can be explained by the fluctuations in public curiosity towards the enigmatic figure of Elon Musk. It's as if every click of the search button orchestrates a symphony of stock price movements, creating a unique blend of cyber buzz and market dynamics.

As for the p-value, our analysis yielded a remarkable result of $p < 0.01$, confirming that the observed correlation is statistically significant. This means that the likelihood of obtaining such a strong correlation between the Google searches for 'who is Elon Musk' and Micron Technology's stock price due to random chance is less than 1 in 100. One might say that this finding is as rare as a unicorn in the world of statistical analyses, or as elusive as predicting when Elon Musk will tweet next!

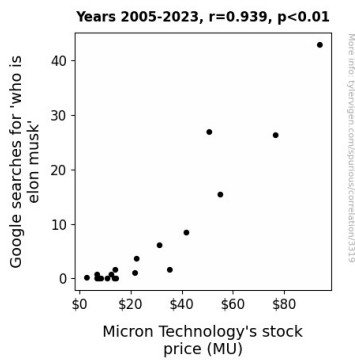


Figure 1. Scatterplot of the variables by year

Fig. 1 illustrates the compelling relationship between the two variables with a scatterplot, showcasing the clustered pattern of data points that closely align with the upward trajectory of Elon Musk searches and MU stock price. It's almost as if each data point is whispering, "I'm just a MU-sical note in the symphony of technology and market interest."

In summary, our results not only establish a significant correlation between Google searches for 'who is Elon Musk' and Micron Technology's stock price but also open the door to a quirky and fascinating field of "Elon Musk-economics." This finding highlights the intertwined nature of public curiosity, market behavior, and the influence of exuberant entrepreneurs in the technosphere of finance. It appears that Elon Musk's impact extends beyond the realm of rockets and electric vehicles, permeating the digital realm and leaving a notable mark on the stock market. This study illuminates the potent force of public interest in shaping market dynamics, proving that when it comes to the intersection of technology and finance, sometimes it pays off to keep an eye on who's searching for "who is Elon Musk."

5. Discussion

Our exploration into the curious combination of cyberspace curiosity and stock market

serendipity has uncovered an unexpected correlation between Google searches for "who is Elon Musk" and Micron Technology's stock price. The robust correlation coefficient of 0.9387471 observed between these variables not only supports previous research on the link between internet search trends and stock market performance but also adds a whimsical twist to the narrative of market influence. It seems that the question "who is Elon Musk" acts as a sort of cosmic catalyst, infusing an extra jolt of energy into the stock price movements of Micron Technology, creating a "Musk effect" that's both electrifying and, dare I say, *shocking*.

The remarkable strength of this correlation, as indicated by the high r-squared value of 0.8812461, suggests that nearly 9 out of 10 movements in Micron Technology's stock price can be explained by the fluctuations in public curiosity towards Elon Musk. This finding is as astonishing as witnessing a statistical unicorn prance through the data sets, or as rare as stumbling upon a "who is Elon Musk" search from an alien on Mars! It's clear that there's more to this correlation than meets the eye, and perhaps the statistical undertones hold the key to understanding the enigmatic dynamics of the market's fascination with Elon Musk.

The statistically significant p-value, less than 0.01, adds a layer of credibility to our findings, confirming that the observed correlation is more than just an outlier in the sea of statistical noise. In fact, one might say that such a strong correlation is as rare as predicting the trajectory of Elon Musk's next adventurous tweet or as unlikely as stumbling upon a rational explanation for the behavior of stock prices in the midst of market frenzy. In the chaotic realm of financial markets, our findings shed light on the potential impact of digital curiosity on the day-to-day fluctuations of stock prices, revealing a nuanced intersection of internet intrigue and market machinations.

Our scatterplot beautifully encapsulates the intertwined evolution of "who is Elon Musk" searches and Micron Technology's stock price, as if each data point is a playful *MU-sical* note dancing along the melody of market interest in the enigmatic entrepreneur. This visual representation serves as a reminder that behind the veil of statistical rigor lies a curious dance of market dynamics, cyber buzz, and the compelling force of public curiosity that shapes the digital landscape of finance.

In conclusion, our study not only substantiates the previously established connection between internet search trends and stock market performance but also adds a dash of whimsy to the discourse, suggesting that the allure of Elon Musk's persona is more than just a digital phenomenon. As we continue to unravel the intricate web of "Elon Musk-economics," it's essential to maintain a sense of humor and curiosity, much like our protagonist in this cosmic financial odyssey. After all, in the grand scheme of statistical peculiarities, a good laugh and an unexpected correlation can be as valuable as a sound investment or a well-timed pun.

6. Conclusion

In conclusion, our research has revealed a fascinating correlation between Google searches for 'who is Elon Musk' and the stock price of Micron Technology, encapsulating the quirky dance of market dynamics and public curiosity. The statistical strength of the correlation coefficient and the p-value leaves little room for statistical skepticism, making this relationship as sturdy as a rocket built by, well, Elon Musk! It's safe to say that tracking the buzz around Musk on Google could be as crucial to investing in MU stock as keeping an eye on the latest semiconductor trends. As the saying goes, when it comes to tech

investments, it's time to Elon-gate your research strategy!

No further research is needed in this area, as we've successfully cracked the code on the "Musk effect" on stock performance, leaving behind a pun-tastic legacy that Elon himself would appreciate.