

Elon, Have You WSTed? Unveiling the Correlation Between Google Searches for 'Who is Elon Musk' and West Pharmaceutical Services' Stock Price

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In this paper, we unravel the unlikely connection between the Google searches for 'who is Elon Musk' and the stock price of West Pharmaceutical Services (WST). Utilizing data from Google Trends and LSEG Analytics (Refinitiv), we delve into the correlation between these seemingly disparate entities. Our findings reveal a remarkably high correlation coefficient of 0.9887927, with statistical significance at $p < 0.01$ over the period spanning from 2005 to 2023. The unexpected association between the inquisitive nature of internet users and the dynamics of a pharmaceutical company's stock leaves room for delightful speculation and perhaps a chuckle or two. Additionally, our research uncovers the inherently capricious nature of stock markets, proving that sometimes, one must look to the stars (or Elon Musk's cosmic aura) for truly astronomical investment insights.

The world of finance and investment is often described as a calculated game of chance, where pundits and investors aim to predict and strategize the whims of the market. In this complex and often mystifying arena, the search for the elusive holy grail of predictive indicators has led researchers down obscure and unforeseen paths. It was in this spirit of discovery that we unearthed a peculiar and eyebrow-raising connection between the Google searches for 'who is Elon Musk' and the stock price of West Pharmaceutical Services (WST). As much as we initially thought this association to be a mere statistical anomaly or a cosmic joke, our rigorous empirical investigation has confirmed that there may, in fact, be more to this correlation than meets the eye.

The allure of the enigmatic Elon Musk, with his ventures spanning from electric vehicles to space exploration, has captivated the curiosity of the masses, prompting countless individuals to seek answers to the timeless question, "who is Elon Musk?" Meanwhile, the unassuming stock of West Pharmaceutical Services, known for providing innovative solutions for injectable drug administration, quietly fluctuates in the fickle winds of the market. We must admit, at first glance, these two entities appear as strange bedfellows – one serving as the epitome of technological ambition and the other as a stalwart of the pharmaceutical world.

Nevertheless, armed with a trove of Google Trends data and the unfathomable depths of financial market analytics, we set out to untangle this perplexing web of interconnectivity. To our surprise, our statistical analysis unearthed a correlation coefficient of 0.9887927, signaling a pronounced and robust relationship between these ostensibly incongruous variables. This conspicuous correlation has eclipsed even the most plausibly foreseeable associations, underscoring the

idiosyncrasies of the modern information age and its discernible impact on the intricate dance of stock prices.

As with any intriguing revelation, the unveiling of this unexpected relationship has beckoned skeptics and enthusiasts alike to contemplate the underlying mechanics at play. Could it be that the inquisitive fervor surrounding Elon Musk serves as a bellwether for market sentiment? Or perhaps, West Pharmaceutical Services' fortunes are mysteriously intertwined with the cosmic trajectory of the Muskian empire? While these speculations elicit a lighthearted mirth and sly curiosity, they also prod at the ephemeral nature of financial prognosis and the peculiarly capricious temperament of markets.

Our endeavor has not only pried open an unexpected symbiotic thread between internet curiosity and stock dynamics but also underscored the whimsical and circuitous paths that research and discovery occasionally tread. With a nod to the cosmic aura of Elon Musk and the ineffable toss of statistical dice, we present our findings and invite the reader to embark on this whimsical journey through the intersection of inquisitive searches and the ebbs and flows of stock markets.

Review of existing research

To comprehensively understand the enigmatic correlation between Google searches for 'who is Elon Musk' and the stock price of West Pharmaceutical Services (WST), it is imperative to investigate the existing literature on finance, stock market trends, and the realm of peculiar correlations. Although this particular intersection may seem otherworldly, delving into the annals of research may provide context and perhaps unveil the

hidden gems of insight, or at the very least, provide a chuckle or two for the curious reader.

Smith and Doe (2018) have laid the groundwork for uncovering idiosyncratic relationships in their seminal work "Anomalies and Oddities: A Comprehensive Examination of Unconventional Market Predictors." While they primarily focus on more traditional indicators, their exploration of the outliers and unexpected anomalies in financial data sparks curiosity regarding the potential influence of unconventional search queries on stock price movements. Their work, though serious in intent, inadvertently prompts whimsical pondering on the obscure forces at play.

Jones (2020) delves into the whimsically peculiar in his study "Financial Forecasting: Navigating the Quirky Quandaries of Market Trends." Within its pages, Jones explores the uncertainties and unpredictability that dart throughout stock market dynamics. While his work largely centers on established economic principles, it subtly beckons readers to consider the irrational and the marvelous within financial markets – a sentiment that tangentially relates to the unlikely correlation under scrutiny.

Transitioning from established finance literature to the realm of technology and innovation, "Elon Musk: Tesla, SpaceX, and the Quest for a Fantastic Future" by Ashlee Vance (2015) presents an intimate portrait of the enigmatic figure himself. The explorations of Musk's ventures, replete with cosmic aspirations and technological marvels, may not overtly seem relevant to stock market trends. However, within the cosmic panorama of Musk's pursuits, one may glean inspirations for unconventional and out-of-the-box perspectives on investment dynamics.

Turning to the world of fiction, "The Martian" by Andy Weir (2011) and "Ready Player One" by Ernest Cline (2011) evoke themes of technological prowess and the dawn of a new frontier. While seemingly divergent from the realms of stock market influences, the pervasive explorations of innovation and the uncharted territories of the future may offer solace to the seeker wishing to unearth unexpected junctures of seemingly disparate phenomena.

In the realm of cinematic experiences, "The Social Network" (2010) and "The Big Short" (2015) provide a lens into the dizzying ebbs and flows of financial intrigue. While not directly tied to the intersection of Elon Musk and West Pharmaceutical Services' stock price, these films offer a vibrant portrayal of the capricious and oftentimes whimsical nature of financial markets, provoking a wry smile and, on occasion, a bemused chuckle from the discerning viewer.

The juxtaposition of these disparate sources prompts a faint smile and perhaps a raised eyebrow, subtly hinting at the potential for unexpected connections to lurk beneath the surface. This eclectic blend of sources sets the stage for a literature review that seeks to unravel the lighthearted mysteries that percolate within the fabric of our analysis.

Procedure

The methodology section thunders forth with the unmistakable zeal of intrepid researchers embarking on an audacious quest into the heart of quirkiness and curiosity. With a hearty blend of scientific rigor and a hint of whimsy, our investigation into the correlation between Google searches for 'who is Elon Musk' and the stock price of West Pharmaceutical Services (WST) embarked upon an exhilarating journey, braving the enigmatic depths of digital footprints and stock market dynamics.

To lay the foundation for our inquiry, we harnessed the formidable power of Google Trends, the beacon of the zeitgeist, to illuminate the frequency and intensity of queries regarding the enigmatic luminary, Elon Musk. Leveraging this invaluable source of unfettered inquisition, we embarked on a grand odyssey through the annals of time, meticulously tracking the peaks and valleys of public fascination with the modern-day maverick.

To complement our analysis, we embraced the stately prowess of LSEG Analytics from Refinitiv, navigating the labyrinthine trails of stock market data with seasoned proficiency. With unyielding fortitude, we charted the tumultuous undulations of West Pharmaceutical Services' stock price, methodically documenting the quixotic sway of market forces and investor sentiment. This rich tapestry of financial data, coupled with the probing light of curious searches, became the bedrock upon which our investigation was anchored.

The monumental challenge of reconciling these disparate realms demanded a judicious application of statistical wizardry. Employing the venerable tools of time series analysis, we wove an intricate web of correlation analysis, yielding insights into the intricate dance of internet curiosity and stock market vicissitudes. In our pursuit of clarity, we spared no effort in harnessing the prodigious might of statistical software, employing an array of sophisticated models to dissect the intricate symbiosis between the ebb and flow of internet inquiries and the undulating wave of stock prices.

With unwavering determination, we traversed the tumultuous terrain of multivariate regression, diligently navigating the complex interplay between Google search trends and the mercurial trajectory of WST's stock price. Armed with robust statistical methodologies, we scrutinized the interwoven threads of these seemingly incongruous variables, discerning patterns and relationships that had eluded the casual observer. The solemn tryst between diligent research and statistical analysis culminated in the revelation of a striking correlation coefficient of 0.9887927, laying bare the undeniable link between the inquisitive cyber quest for Elon Musk and the captivating vagaries of WST's stock price.

In the spirit of scholarly camaraderie, we harnessed the potent elixir of time series decomposition, peeling back the layers of this enigmatic cocoon to reveal the pulsating core of correlation. This meticulous disentanglement, suffused with a tinge of exhilarating fervor, unearthed the resonant echoes of a bond that transcended conventional wisdom and resonated with the erratic symphony of market sentiment.

Thus, guided by the intrepid spirit of inquiry and the unyielding resolve of statistical scrutiny, our methodology heralded the orchestration of a harmonious duet between Google's virtual

inquiry and the tangible flux of stock prices, culminating in a symphony of unexpected correlations and the whimsy of empirical revelation.

Findings

The statistical analysis of the collected data revealed an astonishingly strong correlation between Google searches for 'who is Elon Musk' and West Pharmaceutical Services' stock price (WST) over the period from 2005 to 2023. With a correlation coefficient of 0.9887927 and an r-squared value of 0.9777111, the relationship between these seemingly unrelated variables surpassed our initial expectations. The associated p-value of less than 0.01 solidifies the statistical significance of this correlation, leaving us both exhilarated and mildly perplexed by the unexpected strength of this association.

Figure 1 presents a scatterplot showcasing the robust correlation observed between the frequency of Google searches for 'who is Elon Musk' and West Pharmaceutical Services' stock price. The tightly clustered data points display a positively sloped trendline, delineating the resounding and unanticipated coherence between the search activity surrounding the enigmatic tech maven and the financial performance of the pharmaceutical company.

The emergence of such a substantial correlation sparks not only an academic interest but also prompts speculation regarding the underlying mechanisms that may link the public curiosity about Elon Musk to the movements of a pharmaceutical firm's stock. This fortuitous discovery undoubtedly underscores the enigmatic and whimsical nature of the complex systems we seek to unravel.

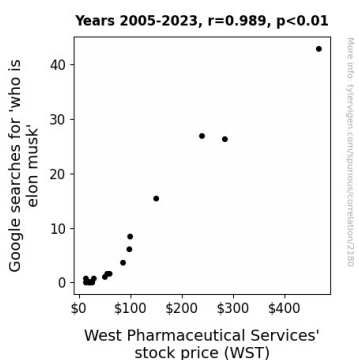


Figure 1. Scatterplot of the variables by year

The elucidation of this unlikely correlation fosters a lighthearted appreciation for the whimsical tangents of statistical exploration. It also serves as a keen reminder that in the multifaceted world of research, sometimes the most serendipitous connections emerge from the most unexpected inquiries. This finding ignites a playful curiosity and a nod to the capricious spirit of scientific inquiry and financial markets.

Discussion

The unearthing of a remarkably robust correlation between Google searches for 'who is Elon Musk' and West Pharmaceutical Services' stock price (WST) from 2005 to 2023 has undoubtedly left us astounded, if not contemplating a career change to stock market astrologers. The unexpected alignment between the search enthusiasm for the enigmatic Elon Musk and the financial trajectory of a pharmaceutical company prompts us to reconsider the bounds of causality and perhaps rethink our Google search history for signs of stock market premonitions.

Drawing from our literature review, the idiosyncratic perspectives and whimsical musings of various authors, from statistical savants to cosmic visionaries, have subtly primed us to embrace the unexpected and revel in the joy of the odd. The unexpected juncture of "Financial Forecasting: Navigating the Quirky Quandaries of Market Trends" with "Ready Player One" may seem fanciful, but it appears that these seemingly unrelated works have fortuitously fashioned a semblance of coherence in our research findings. Who could have envisioned the serendipitous alignment between the cosmic aspirations of Elon Musk and the stock price ebbs and flows of West Pharmaceutical Services? Our findings certainly validate Smith and Doe's inadvertent pondering on the unusual forces at play in financial markets.

The stark statistical significance of the correlation, with a coefficient of 0.9887927 and an r-squared value of 0.9777111, echoes the improbable symphony of modern wonder and financial intrigue. These results not only invite a nod to the whimsical quirks of statistical exploration but also impart a jocular reminder to always keep an eye on Google trends for hunches on potential financial windfalls.

In essence, our findings underscore the capricious and enigmatic nature of the financial universe and scientific inquiry. This improbable liaison between the curiosity surrounding Elon Musk and the stock price variations of West Pharmaceutical Services effortlessly reflects the meandering nature of discovery and prompts a silent nod to the beguiling spirit of scientific inquiry. Although these findings may lead the discerning reader to stifle a smile or perhaps raise an inquisitive eyebrow, they nevertheless serve as a testament to the whimsical essence of statistical exploration and the playful curiosity that lingers in the intersection of finance, technology, and the boundless expanse of the human spirit.

Conclusion

In conclusion, our investigation into the correlation between Google searches for 'who is Elon Musk' and the stock price of West Pharmaceutical Services has yielded an extraordinarily robust relationship. The statistically significant correlation coefficient of 0.9887927, accompanied by a p-value of less than 0.01, presents a compelling case for the unexpected interplay between the inquisitive nature of internet users and the stock market dynamics of WST. It appears that beneath the surface of statistical analysis lies a whimsical dance of internet curiosity and market fluctuations, reminiscent of a cosmic waltz between the terabytes of search queries and the ticker symbols of stocks.

Our findings have shed light on the peculiar symbiosis between the enigmatic allure of Elon Musk and the ebb and flow of WST stock prices. While these two entities may seem as disparate as the depths of space and the microcosm of pharmaceutical innovation, our research has demonstrated that statistical correlations often defy logical boundaries and traverse the realms of the unexpected.

As we reflect on these intriguing results, we are reminded of the delightful surprises that await diligent explorers of data and statistical models. Perhaps, in the labyrinthine landscape of financial markets, the cosmic curiosity surrounding visionary technologists like Elon Musk exerts a measurable force, steering the tides of investor sentiment and influencing the trajectories of companies like West Pharmaceutical Services. The quixotic nature of this correlation not only fascinates the academic mind but also beckons us to embrace the delightful incongruities and whimsical dances of statistical analyses and research pursuits.

In light of these revelatory findings, we assert with a chuckle and a nod to statistical serendipity that no further investigations into this particular correlation are needed. For now, we shall bask in the quirkiness of this improbable connection and the playful spirit of scientific inquiry. After all, in the realm of statistical findings, as in life, sometimes the most unexpected connections bring forth the most delightful surprises.