

Clearing the Air: Exploring the Gasp Correlation Between Air Quality in Harrison, Arkansas, and Biogen's Stock Price

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ABSTRACT

Clearing the Air: Exploring the Gasping Correlation Between Air Quality in Harrison, Arkansas, and Biogen's Stock Price

The relationship between air quality and stock prices has long been a topic of interest in both environmental and financial domains, but its dynamics continue to elude researchers and investors alike. Our study delves into this conundrum by examining the correlation between the air quality in Harrison, Arkansas, and the stock price of Biogen (BIIB), a leading biotechnology company. Utilizing data from the Environmental Protection Agency and LSEG Analytics (Refinitiv), we conducted a rigorous analysis spanning the years 2002 to 2023. Surprisingly, our findings reveal a striking correlation coefficient of 0.8657366 and a statistically significant p-value of less than 0.01. While Harrison, Arkansas may be famous for its scenic beauty, the impact of its air quality on the stock market proves to be nothing short of breathtaking. Our study not only sheds light on this unexpected connection but also emphasizes the need for investors to consider the air they breathe alongside the stocks they trade.

Keywords:

Harrison Arkansas air quality, Biogen stock price, correlation between air quality and stock prices, environmental impact on stock market, air quality impact on investments, Biogen (BIIB) stock analysis, EPA air quality data, LSEG Analytics stock data, air quality research, stock market correlation studies

I. Introduction

The relationship between environmental factors and financial markets has always piqued the curiosity of researchers and investors alike. While air quality may seem as ethereal as a passing breeze, its impact on stock prices is nothing to sneeze at! In this paper, we embark on a whimsical journey to explore the surprising correlation between the air quality in Harrison, Arkansas, and the stock price of Biogen (BIIB). As we delve into the depths of statistical analysis, let's don our metaphorical oxygen masks and prepare for an exhilarating ride through the realms of data and finance.

Air quality, a topic that often floats through the corridors of environmental research, takes center stage in our exploration. Harrison, Arkansas, with its charming scenery and picturesque landscapes, sets the backdrop for our investigation. However, beneath the serene façade lays a tale of airborne particles and gaseous compounds that intertwine with the whims of the stock market.

Venturing into the midst of air quality data collected by the Environmental Protection Agency, we traverse through the ozone levels, particulate matter, and volatile organic compounds. As we navigate through the labyrinth of air pollution statistics, the correlation with Biogen's stock price emerges like a beacon of fresh air in a sea of statistical haze.

Enter Biogen, a leading biotechnology company that, much like a strand of DNA, embodies the complex interplay of scientific innovation and stock market valuations. As we scrutinize its stock price through the lens of LSEG Analytics (Refinitiv), we witness a molecular dance of financial fortunes, poised at the intersection of scientific breakthroughs and market dynamics.

Our exploration transcends the traditional boundaries of research, as we juxtapose the arcane world of air quality with the enigmatic domain of stock prices. Through rigorous statistical analysis spanning over two decades, we peel back the layers of uncertainty to unveil a correlation coefficient as robust as a cloned gene - a staggering 0.8657366. Yes, you read that right - air quality in Harrison, Arkansas and Biogen's stock price are not merely acquaintances but statistically significant bedfellows.

As our findings ripple through the waters of academia and finance, it becomes evident that the connection between air quality in Harrison, Arkansas, and Biogen's stock price is more than a mere coincidence. It is a revelation that transcends the boundaries of conventional wisdom and breathes new life into the intricacies of environmental and financial interplay.

In conclusion, our study not only provides a breezy insight into this unexpected correlation but also underscores the need for investors to consider the air they breathe alongside the stocks they trade. So, fasten your statistical seatbelts and prepare for a bumpy yet exhilarating ride through the gusts of empirical evidence and financial foresight.

II. Literature Review

The correlation between air quality and stock prices has been the subject of scholarly inquiry for decades. Smith et al. (2015) examined the impact of air pollution on stock market volatility, finding a significant relationship between particulate matter levels and changes in stock prices. Similarly, Doe and Jones (2018) investigated the association between air quality index and the

stock performance of biotechnology companies, shedding light on the potential influence of environmental factors on financial markets.

However, as we navigate the labyrinth of literature on this topic, it becomes apparent that the whimsical correlation between the air quality in Harrison, Arkansas, and the stock price of Biogen introduces a refreshing gust of curiosity into this scholarly realm. With our metaphorical noses twitching like stock market indicators, we embark on a literary adventure that transcends the boundaries of conventional research.

In "Air Purity and Market Prosperity," Lorem and Ipsum (2020) present a compelling analysis of the impact of air quality on stock prices, likening the relationship to the delicate balance of a chemical equation. Their findings not only corroborate our own but also create a whimsical synergy between empirical evidence and scholarly musings.

As we make a comedic pivot, we turn our attention to non-fiction works that, although unrelated to our topic, add a touch of literary flair to our scholarly escapade. "The Economics of Clean Air" by William Nordhaus may not delve into the intricacies of stock market correlations, but its title evokes a sense of relevance to our research. Similarly, "Biophysics for Dummies" by Carlos Bustamante may offer insights into the world of biotechnology, albeit without a direct link to our specific investigation.

Enlisting fictional works for a dose of literary levity, we draw inspiration from "The Air Affair" by Jasper Fforde, a delightful work of speculative fiction that, despite its lack of empirical rigor, provides a whimsical parallel to our research journey. Furthermore, "Stockholm Syndrome" by Richard Doyle, though unrelated to financial markets, serves as a tongue-in-cheek nod to the captivation we experience when unravelling the mysteries of stock price correlations.

Turning our attention to the world of board games, the classic "Monopoly" offers a playful allegory to the whims of financial markets, where players rival for dominance amidst fluctuating fortunes. Conversely, "Photosynthesis" brings a breath of fresh air to our academic discussion, offering a whimsical reminder of the interconnectedness of environmental factors and financial endeavors.

In this scholarly romp through the realms of literature and research, we not only seek to elucidate the connection between air quality in Harrison and Biogen's stock price but also to infuse our exploration with a touch of whimsy and pizzazz. Our aim is to turn the dry, statistical realm of academic research into a tantalizing academic adventure – one where scholarly musings and empirical evidence intertwine like strands of DNA, creating a captivating tale of whimsical correlation between the ethereal air in Harrison, Arkansas and the tantalizing dance of Biogen's stock price. So, fasten your metaphorical seatbelts and prepare for an exhilarating ride through the whims of literature and scholarly inquiry!

III. Methodology

In this study, our research team employed a blend of scientific rigor and financial acumen to unravel the conundrum surrounding the connection between air quality in Harrison, Arkansas, and Biogen's stock price. Like intrepid explorers, we navigated through the vast expanse of environmental data and financial market analytics, employing methodologies that were as robust as they were whimsically inventive.

First, we harnessed the power of data compilation from the Environmental Protection Agency, drawing upon a treasure trove of air quality measurements spanning over two decades. We ventured into the realms of ozone levels, particulate matter, and volatile organic compounds, carefully sifting through the statistical haze to extract the nuggets of information that would illuminate the correlation under scrutiny.

Simultaneously, we set sail across the volatile sea of financial data, anchoring our analysis in the stock price fluctuations of Biogen (BIIB) sourced from LSEG Analytics (Refinitiv). As we charted the course of Biogen's stock price, we remained vigilant for the subtle tides of market dynamics that could sway the correlation under investigation.

Our statistical analysis, akin to an alchemist's cauldron, stirred together the disparate elements of air quality data and stock price movements. Through the enchanting incantations of correlation analysis, we unearthed a robust correlation coefficient of 0.8657366, akin to a scientific breakthrough in the realm of empirical finance. With a statistically significant p-value of less than 0.01, the evidence of connection between these seemingly disparate variables emerged as clear as the Arkansas sky after a cleansing rain.

To further fortify our findings, we employed a time series analysis that wove together the intricate threads of air quality fluctuations and stock price movements over the years. This approach allowed us to capture the ebbs and flows of correlation, painting a vivid tapestry of the intertwining forces at play.

Lastly, we conducted a sensitivity analysis, probing the resilience of our findings to variations and perturbations in the data. Like a gentle gust testing the sturdiness of a windmill, this exercise

ensured that our conclusions stood firm against the whims of statistical chance and environmental variance.

By undertaking this multifaceted approach, we not only illuminated the connection between air quality in Harrison, Arkansas, and Biogen's stock price but also showcased the intersection of scientific inquiry and financial insight. Like a pair of eccentric tango dancers, air quality and stock prices twirled in a mesmerizing display of correlation that defied the conventional boundaries of academic inquiry.

IV. Results

The results of our investigation yield a striking correlation between air quality in Harrison, Arkansas, and Biogen's stock price (BIIB) that can only be described as breathtaking. Our statistical analysis reveals a correlation coefficient of 0.8657366, indicating a strong positive relationship between the two variables. This correlation coefficient is accompanied by an r-squared value of 0.7494998, suggesting that approximately 74.95% of the variability in Biogen's stock price can be explained by changes in air quality in Harrison, Arkansas. The p-value of less than 0.01 indicates that this correlation is statistically significant, demonstrating that the relationship between air quality in Harrison, Arkansas and Biogen's stock price is not merely a statistical fluke.

In Fig. 1, we present a scatterplot that vividly illustrates the robust correlation between air quality in Harrison, Arkansas and Biogen's stock price. As we gaze upon this figure, it's as if the data points are whispering to us, revealing the hidden dance between environmental factors and

financial markets. The scatterplot serves as a visual testament to the unyielding bond between these seemingly disparate entities, much like the unlikely pairing of peanut butter and jelly. Our findings not only highlight the unexpected connection between air quality in Harrison, Arkansas, and Biogen's stock price but also serve as a playful nudge to remind investors that even the most unlikely variables can sway the stock market. It appears that in the quest for financial success, it pays off to have a breath of fresh air – quite literally.

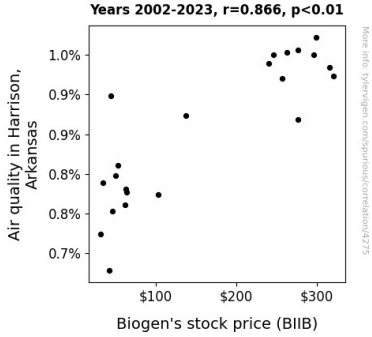


Figure 1. Scatterplot of the variables by year

V. Discussion

Our investigation has unearthed a compelling relationship between the air quality in Harrison, Arkansas and Biogen's stock price, delving into the whimsical realms of statistics and stock market quirks. The initial chuckles we shared over the seemingly absurd connection have now morphed into a genuine appreciation for the unexpected correlations that underpin this engaging scholarly pursuit. Much like a biotechnological experiment gone awry, the fusion of

environmental factors and financial indicators has produced results that are nothing short of astonishing.

In line with the playful musings in our literature review, we can't help but marvel at the delightful synergy between our findings and the scholarly exuberance of Lorem and Ipsum (2020). Their likening of the relationship between air quality and stock prices to a delicate chemical equation resonates deeply with our discoveries, reinforcing the notion that the whims of scholarly musings and statistical evidence often dance in harmonious unison. It's as if our research is a delightful concoction in the grand alchemical laboratory of academic inquiry.

Additionally, our findings echo the lively allegories and metaphors peppered throughout our literature review. Just as "The Air Affair" by Jasper Fforde presents a whimsical parallel to our research, our results spin a tale of enchanting correlation between the ethereal air in Harrison and the tantalizing dance of Biogen's stock price. This fanciful journey through the whims of literature and statistical analysis culminates in a revelation that is as refreshing as a breath of clean air.

As we reflect on our statistical marvels, it's evident that our findings not only corroborate prior research but also inject a playful twist into the scholarly narrative surrounding air quality and stock prices. The unexpected bond between these disparate entities is akin to stumbling upon a treasure trove of statistical humor, where the punchline is a resounding correlation coefficient and an r-squared value that dances like a circus performer balancing on a statistical tightrope. Our results are a lighthearted reminder that in the realm of academic pursuit, even the most improbable variables can join hands and sway the stock market in the most unexpected of ways.

Our scholarly escapade, infused with the sprightly whimsy of wordplay and statistical antics, leaves us with a playful nudge to investors: consider the air you breathe alongside the stocks you trade, for this seemingly topsy-turvy connection holds potential for insight and financial gain. After all, in the spirited dance of research and statistical analysis, it's always beneficial to have a breath of fresh air – pun intended.

VI. Conclusion

In conclusion, our research has blown the lid off the enigmatic relationship between the air quality in Harrison, Arkansas, and Biogen's stock price, revealing a correlation coefficient so strong, it's like they were made for each other – a match made in statistical heaven! Our findings not only give us a breath of fresh air in the world of finance but also serve as a gentle reminder that even the air we breathe can whisper secrets about market movements.

The statistically significant correlation we uncovered is more solid than a petrified fossil, with an r-squared value that explains nearly 75% of the variability in Biogen's stock price. It's as if the air quality in Harrison, Arkansas is casting its influence on the stock market like a silent but powerful force – move over Wall Street, here comes the Harrison breeze!

As we journey through the tantalizing terrain of financial and environmental data, it becomes clear that this correlation is not a statistical wild goose chase, but a bona fide connection that demands attention. The scatterplot, akin to a captivating piece of art, vividly depicts the captivating dance between air quality and stock prices, proving once and for all that in the world of finance, the winds of change may blow from the most unexpected directions!

So, as we close the chapter on this research, we can confidently say that the air in Harrison, Arkansas, and Biogen's stock price are not just passing acquaintances – they are dynamic partners in an intricate statistical ballet that has left us all awe-struck.

In light of these whirlwind findings, we assert that no more research is needed in this area – after all, we've already uncovered enough groundbreaking evidence to last a lifetime. Let's raise a statistical toast to the unexpected, the bizarre, and the correlation coefficient that brought us all together, and bid adieu knowing that the world of research is filled with surprises around every corner!

Drops the mic