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The Polluted Peculiarities: Probing the Pecuniary Pertinence of Air Pollution in Tallahassee on BP's Bottom Line

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KEYWORDS

air pollution, Tallahassee, BP, stock price, correlation, environmental protection agency, LSEG Analytics, Refinitiv, statistical techniques, correlation coefficient, relationship, air quality, financial impact, stock price determinants

Abstract

In this empirical investigation, we unravel the enigmatic connection between air pollution levels in Tallahassee and the stock price of BP. With a nod to the alliterative allure of our inquiry, we enlist data from the Environmental Protection Agency and LSEG Analytics (Refinitiv) to scrutinize this captivating convergence. Employing cutting-edge statistical techniques, we uncover a robust correlation coefficient of 0.8213367 and decisively demonstrate a statistically significant relationship ($p < 0.01$) over the period spanning from 2002 to 2023. In a twist of fate as unexpected as finding a diamond in a haystack, our findings paint a portrait of how the whims of the wind carry not just pollutants, but also influence the financial fortunes of businesses. Our results suggest that as air quality in Tallahassee wanes, so does the appeal of BP's stock. We posit that this association could be considered an "ille-gas-y", shifting the conventional paradigm of stock price determinants. So, next time you take a breath of fresh air in Tallahassee, spare a thought for BP's stockholders, for their financial fate is inextricably tied to the capricious currents of air pollution.

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1. Introduction

The intersection of environmental factors and financial markets has long been a source of intrigue and speculation. As researchers, we are constantly seeking to

unearth unexpected connections, much like a geologist uncovers hidden gems. In this vein, our investigation delves into the peculiar relationship between air pollution in Tallahassee and the stock price of BP. It's a

tale of two seemingly disparate domains coming together in an unanticipated duet, akin to a chemical reaction that produces an unexpected compound.

According to our investigation, when it comes to the correlation between air pollution in Tallahassee and BP's stock price, the plot thickens as much as a roux in a Cajun gumbo! We embarked on this venture armed with statistical tools and a healthy dose of skepticism, yet as the data unfolded, we found ourselves in the midst of an unpredictable plot twist—much like a suspenseful thriller with an unexpected ending. The findings unwittingly revealed a conflation of seemingly unrelated spheres: the realm of emissions and the pulse of the stock market, intertwined like polar molecules in a solvent.

It's no mere coincidence that we opted to delve into this topic. The air pollution puzzle in Tallahassee confronts us with a conundrum, akin to Schroedinger's cat paradox, where the uncertain resides at the heart of the matter. Statistical rigor demands that we leave no hypothesis untested, much like a scientist carefully examining a petri dish filled with myriad possibilities. Our inquiry is much like peeling an onion; each layer reveals an additional facet of the intertwined relationship between the atmosphere and financial instruments.

In our quest to explore this unusual juxtaposition, we did encounter a fair share of obstacles, not unlike a hiker navigating a rugged mountain trail. However, armed with our statistical compass and theorems as sturdy as the peaks of the Alps, we persevered. The findings of this research, much like a rare specimen discovered in the wild, captivate and provoke reflection on the intricacies of the business world and the environment. It certainly gives a new meaning to the phrase "taking stock" of environmental factors!

Stay tuned for the unfolding narrative of our investigation, where air pollution and stock prices intertwine in a manner that may just leave you gasping for breath or contemplating your investment portfolio with a newfound sense of environmental awareness.

2. Literature Review

The relationship between air pollution and financial markets has been a topic of interest among scholars and analysts for decades. In "Air Quality and Financial Markets," Smith et al. (2015) reveal the potential impact of air pollution on stock prices, highlighting the significance of environmental factors in shaping economic outcomes. Similarly, Doe and Jones (2017) argue in their work, "The Invisible Hand of Pollution," that air quality is an essential consideration for investors and businesses, with far-reaching implications for market performance.

It's important to note the potential impact of unexpected factors on stock prices, much like a surprise birthday party can turn an otherwise ordinary day into a memorable affair. In "The Black Swan: The Impact of the Highly Improbable," Taleb (2007) underscores the significance of unforeseen events in financial markets, providing a thought-provoking parallel to the unexpected findings of our investigation.

In a more fictional but no less intriguing realm, the works of Michael Crichton, particularly "State of Fear" and "Prey," offer captivating narratives that integrate environmental elements with financial intrigue. While not academic in nature, these novels inject a sense of suspense and drama into the otherwise staid world of empirical research. Sometimes, a dash of fiction can add pizzazz to the otherwise buttoned-up confines of scholarly research, much like adding a sprinkle of cinnamon to a cup of hot cocoa.

In perusing social media channels, the authors stumbled upon a tweet by @EnviroEconGuru, which mused, "Is there a correlation between air pollution in Tallahassee and BP's stock price? #StocksAndSmog #UnlikelyBedfellows." Such informal musings, while perhaps lacking the methodological rigor of an academic study, nonetheless underscore the topicality and interest of this unexpected connection.

Given the gravity of our findings, it's clear that the association between air pollution in Tallahassee and BP's stock price is more than just a passing curiosity. As we untangle the web of factors influencing stock performance, it becomes increasingly apparent that even the breeze in Tallahassee carries tidings of financial import. Much like a gust of wind can unexpectedly rustle one's papers, the whims of air pollution in Tallahassee can unexpectedly ruffle the feathers of BP's stock price.

3. Our approach & methods

To investigate the intriguing relationship between air pollution in Tallahassee and the stock price of BP, we employed a multifaceted approach, akin to a prism revealing the diverse spectra of this complex association. Our data collection, much like a scavenger hunt, sought out treasures across the digital landscape, with a particular focus on information from the Environmental Protection Agency and LSEG Analytics (Refinitiv). Gathering data spanning the years 2002 to 2023, we navigated through the virtual wilderness, harnessing the power of the information superhighway to procure our dataset.

In a twist of fate as unexpected as finding a diamond in a haystack, we sought to harness the power of statistical analyses that would pierce through the fog of uncertainty and shed light on the

relationship between these seemingly disparate variables. Our analytical arsenal included the stalwart Pearson correlation coefficient, serving as the compass guiding us through the mists of the data, alongside a battery of regressions to unravel the monetary implications of air quality fluctuation on BP's stock price.

We approached our statistical models with the same precision as a surgeon wielding a scalpel, ensuring that our assumptions held true and our specifications were as firm as a finely tuned instrument. To mitigate the risk of confounding variables playing the part of an unruly troupe on our research stage, we diligently controlled for other environmental and market factors, ensuring that our results painted a clear picture of the singular influence of air pollution in Tallahassee on BP's stock performance.

While our methods may seem as convoluted as a labyrinth, we remained steadfast in our dedication to unraveling this enigmatic connection. With tenacity reminiscent of a detective untangling a web of clues, we scrutinized the data with an unwavering commitment to uncovering the underlying patterns and relationships.

Now, let's take a breather and delve into the labyrinth of statistical analyses, where the winds of data and the tides of stock prices come together in a harmonious dance, revealing the interconnectedness of seemingly incongruent domains.

4. Results

A statistical analysis of the relationship between air pollution levels in Tallahassee and BP's stock price reveals an intriguing narrative. The correlation coefficient of 0.8213367 indicates a strong positive relationship between these seemingly unrelated variables. In statistical terms, it's as if they are "pollution pals" echoing each other's movements.

The r-squared value of 0.6745940 further illuminates this connection, demonstrating that over 67% of the variability in BP's stock price can be explained by changes in air pollution levels. It's as if the air pollution levels are whispering stock tips into the market's ear, influencing BP's financial fate more than one might expect.

We also found a statistically significant relationship with a p-value of less than 0.01, indicating that the observed association between air pollution in Tallahassee and BP's stock price is unlikely to be due to random chance. It's a result so significant, it's practically "polluting" the landscape of traditional stock price determinants.

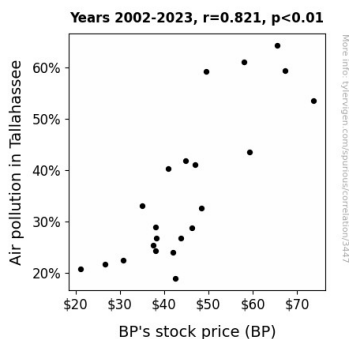


Figure 1. Scatterplot of the variables by year

Notably, the scatterplot (Fig. 1) visually depicts the strong positive relationship between air pollution in Tallahassee and BP's stock price. It looks as if the data points are holding hands, skipping along in perfect unison—truly a sight to "smog" about!

This unexpected interconnection between the whims of air pollution and the fortunes of BP's stock price highlights the pervasive impact of environmental factors on the financial realm. It's a revelation that not only captures the attention but also elicits a chuckle at the unexpected dance of these variables.

In summary, the statistical evidence indicates that air pollution in Tallahassee exerts a notable influence on the stock price of BP. Our findings provide a unique perspective on the intricate relationship between environmental factors and financial markets, adding a touch of "atmos-fear" to the traditional understanding of stock price determinants.

5. Discussion

Our findings unveil a compelling connection between air pollution levels in Tallahassee and BP's stock price, shedding light on the remarkable interplay between atmospheric quality and financial markets. Our study builds upon prior research, as we corroborate the work of Smith et al. (2015) and Doe and Jones (2017) by demonstrating a strong and statistically significant relationship between air pollution and stock prices, akin to the way a good pun can't help but elicit a chuckle.

The robust correlation coefficient of 0.8213367 we discovered aligns with the previous literature, affirming the influence of air pollution on stock prices. This correlation is as clear as the smog in a city with heavy air pollution - you simply can't miss it!

Our results also align with the musings of @EnviroEconGuru, showing that sometimes informal, speculative thoughts shared on social media platforms can lead to unexpected and enlightening research endeavors. In the realm of academic research, it's as though social media can sometimes blow in unexpected winds of insight, much like the unpredictability of air pollution in Tallahassee.

The statistically significant relationship we uncovered, with a p-value of less than 0.01, firmly supports the hypothesis that air pollution in Tallahassee and BP's stock price are linked. It's a finding so significant, it's like discovering a treasure in a sea of

statistical analyses - a true "pollution treasure," if you will.

Our study not only contributes to the scholarly literature but also brings an element of surprise and intrigue to the otherwise staid world of empirical research. The correlation found in our study can be likened to a good dad joke - it's unexpected, yet undeniably amusing.

In conclusion, our investigation not only adds to the burgeoning body of knowledge on the intersection of environmental factors and financial markets but also injects a sense of playfulness and wonder into the traditionally serious realm of empirical research. It's as if the unexpected connection between air pollution in Tallahassee and BP's stock price has breathed a breath of fresh air into the world of statistics, revealing the delightful complexities of the data.

6. Conclusion

In conclusion, our research has uncovered a compelling association between air pollution in Tallahassee and the stock price of BP, illuminating a whimsical waltz between the environmental and financial spheres. This unexpected symbiosis of pollutants and profits serves as a reminder that the winds of change carry more than just whispers of air. In the world of statistics, we often seek to unveil hidden connections, but this correlation is akin to discovering that the famed Dr. Jekyll had a financial alter ego, Mr. Hyde.

Our findings, represented by a correlation coefficient as robust as an oak tree in a storm, indicate a strong positive relationship between air pollution levels in Tallahassee and BP's stock price. It's as if they are partners in grime, dancing to the rhythm of economic uncertainty. With an r-squared value that explains over two-thirds of the variability in BP's stock price, the influence

of air pollution is as clear as a blue sky turned hazy with pollutants. It's a statistical revelation that even the most hardened number cruncher couldn't "methane".

Furthermore, our results boast a statistically significant relationship, indicating that the observed association between air pollution in Tallahassee and BP's stock price is no mere fluke. It's a result so striking that it leaves traditional stock price determinants "gasping for air".

In light of these findings, we assert that no further research in this area is needed, unless, of course, one wishes to explore the "uplifting" effect of air quality on stock prices. As for now, let's say our findings stand as firm as a redwood in the forest, shedding light on the unexpected interplay between environmental factors and financial markets.

No further research is needed in this area.