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Counting on Numbers: A Correlation Between the Count of Mathematicians in Texas and Discovering Financial Success

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Abstract

This paper investigates the intriguing association between the number of mathematicians in the Lone Star State and the stock price of Discover Financial Services (DFS), bringing a humorous angle to an otherwise seemingly serious topic. Utilizing data from the Bureau of Labor Statistics and LSEG Analytics (Refinitiv), we engaged in a quantitative analysis to unravel this curious relationship. Surprisingly, our findings revealed a robust correlation coefficient of 0.9241444 and $p < 0.01$ for the period spanning 2008 to 2019, proving that the presence of mathematicians in Texas is indeed correlated with the financial performance of Discover Financial Services. It seems that when it comes to stock prices and mathematical prowess, everything really is bigger in Texas! It's as if the Lone Star State is not only known for its oil but also for adding a little calculation into the mix – after all, there's no problem too complex when you've got a Texan mathematician by your side. In conclusion, this study not only sheds light on the unexpected and humorous connection between number crunchers and financial success but also provides a light-hearted reminder that when it comes to data analysis, one should always factor in a bit of fun. It's no coincidence that this research adds up to a surprising correlation – after all, when Texas mathematicians are in the equation, discovering financial success is just a hop, skip, and a jump away!

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1. Introduction

From Wall Street to Main Street, the relationship between quantitative analysis and financial success has always been a compelling topic. However, in the vast landscape of economic research, amidst the countless studies on stock prices, interest

rates, and market trends, there exists an unconventional and seemingly whimsical link that has captured our curiosity – the connection between the number of mathematicians in the state of Texas and the stock price of Discover Financial Services (DFS). It's like a Texas-sized riddle waiting to be solved!

It's no secret that Texas is known for its larger-than-life persona, but what about its contribution to the world of finance? Surprisingly, the Lone Star State hosts a bevy of mathematicians who call it home, an unexpected fact that piqued our interest and prompted the investigation that we report in this paper. Indeed, it seems that everything really is bigger (including statistical surprises) in Texas!

As we endeavor to unravel this curious relationship, we are reminded of the timeless dad joke: "Why did the mathematician refuse to take a negative number's call? Because he couldn't find the x!" It's clear that humor and numbers often go hand in hand, and in this research, we aim to apply a lighthearted approach to shed light on a rather unconventional correlation, taking stock of both the numbers and the chuckles along the way.

The tale of mathematicians and stock prices in Texas may appear to be an anecdotal oddity, but upon closer examination, it may hold valuable implications for practitioners and academics alike. After all, who would have thought that the Lone Star State could hold the key to unlocking the financial mysteries of a major corporation? It's a testament to the unexpected discoveries that await those who dare to crunch the numbers with a tinge of humor in their toolkit.

We embark on this endeavor not only with a spirit of inquiry but also with a willingness to embrace the comedy that can emerge from the often serious world of academic research. Indeed, as the saying goes, "A statistician can have his head in an oven and his feet in ice, and on average, he's comfortable." With this study, we aim to bring a touch of warmth and amusement to the sometimes chilly world of quantitative analysis, proving that even the most intricate of statistical investigations can benefit from a dash of humor.

In the following sections, we delve into the methodology, results, and implications of our investigation, paving the way for a thoughtful exploration of the unexpected and comical connection between the number of mathematicians in Texas and Discovering Financial Success. It's a journey that promises to entertain, enlighten, and perhaps even inspire a math joke or two along the way!

2. Literature Review

The relationship between the number of mathematicians in a given region and its potential impact on financial entities has historically been a source of intrigue within the field of quantitative analysis. This study is no exception, as it aims to examine the uncanny correlation between the count of mathematicians in Texas and the stock price of Discover Financial Services (DFS). As we peruse the existing literature, we recognize the significance of our investigation, which provides a lighthearted spin on an otherwise weighty subject matter.

Smith and Doe (2015) delve into the impact of regional demographics on stock performance, uncovering fascinating nuances in the realm of financial data analysis. Meanwhile, Jones (2018) explores the influence of human capital on corporate success, introducing thought-provoking concepts that prompt further examination. It is within this context that our study aims to contribute, with a penchant for lightheartedness and an astute appreciation for the unexpected moments of whimsy that arise in quantitative research.

Now, onto the topic of mathematicians in Texas. It's a well-known fact that the Lone Star State has a vibrant and dynamic community of number theorists, statisticians, and problem-solvers who bring their mathematical prowess to various sectors of industry. And as we navigate through this research, we can't help but be

reminded of a classic dad joke: "Did you hear about the mathematician who's afraid of negative numbers? He'll stop at nothing to avoid them." It's clear that in the world of numbers, humor always adds up!

In "Mathematics in the Lone Star State: A Historical Perspective," the authors reveal the rich tradition of mathematical inquiry in Texas, shedding light on the state's contributions to the field of quantitative analysis. This comprehensive exploration lays the groundwork for our investigation and hints at the potential influence of these mathematical minds on the financial landscape.

Moving beyond the realm of non-fiction literature, we uncover a treasure trove of fictional works that, at first glance, seem unrelated to our subject matter. Yet, upon further reflection, we cannot overlook their potential relevance. "The Curious Case of Financial Formulas" and "Quantitative Mysteries: A Mathematical Thriller" are fictional narratives that, unbeknownst to many, contain hidden clues about the unexpected link between mathematicians and stock prices.

As we navigate the humorous undercurrents of our research topic, it's important to acknowledge the role of popular culture in shaping our perception of numbers and finance. Cartoons such as "Number Crunchers" and "The Math Marvels" have ingrained in us a fascination with numerical prowess and problem-solving, serving as a testament to the enduring allure of mathematical mysteries. Moreover, children's shows like "Math Adventures in Texas" have unwittingly nurtured a generation of young minds to appreciate the beauty of mathematics, perhaps sowing the seeds for future financial wizards who may one day impact stock prices and beyond.

In sum, as we embark on our investigation into the correlation between Texas mathematicians and Discover Financial

Services' stock price, we are cognizant of the unexpected and comical nature of our inquiry. After all, in the world of quantitative analysis, surprises – and occasional dad jokes – await around every statistical corner.

3. Our approach & methods

To investigate the correlation between the number of mathematicians in Texas and the stock price of Discover Financial Services (DFS), our research team employed a combination of traditional econometric methods and a touch of Texan flair. As they say, when in doubt, add a little yeehaw to your statistical analysis!

First, we collected data on the count of mathematicians in Texas from the Bureau of Labor Statistics, utilizing their comprehensive reports on employment and occupational trends. We then embarked on a data mining adventure akin to searching for a hidden treasure in the vast expanse of the internet – albeit with more spreadsheets and less swashbuckling.

In parallel, we sourced historical stock price data for Discover Financial Services (DFS) from LSEG Analytics (Refinitiv), leveraging their extensive database to uncover the price movements of this financial titan. It was a bit like unraveling a good dad joke – the punchline was there, we just had to find the right setup.

With the datasets in hand, we channeled our inner Texas Rangers and began the process of wrangling the numbers. This involved organizing, cleaning, and validating the data to ensure that our statistical lassos would capture the most accurate representation of the relationship between mathematicians and stock prices. Wrangling data is a bit like taming a wild stallion – it takes patience, persistence, and the occasional "giddy up!"

Once the data was corralled, we proceeded with a rigorous quantitative analysis that

would make even the most discerning statistician nod in approval. We applied time series econometric techniques, such as autoregressive integrated moving average (ARIMA) modeling and vector autoregression (VAR), to untangle the complex web of numerical interactions. It was like solving a puzzle, but instead of matching colors or patterns, we were uncovering the hidden connections between intellect and financial performance.

In addition, we employed advanced statistical software – the trailblazing heroes of our analytical expedition – to conduct regression analyses and calculate correlation coefficients. These powerful tools allowed us to delve into the heart of the data and extract meaningful insights that would sharpen the focus of our investigation. It's safe to say that without these digital sidekicks, our journey through the statistical wilderness would have been akin to navigating the Texas plains without a compass.

And speaking of companions on the research trail, we engaged in numerous discussions within our research team, exchanging ideas and perspectives like colleagues huddled around a campfire. It was here that we encountered our fair share of math jokes, as good-natured banter and statistical humor flowed freely, adding a touch of levity to our methodological pursuits. After all, what's a research endeavor without a few well-placed witticisms to keep the spirits high?

In summary, the methodology encompassed a harmonious blend of data collection, statistical analysis, and a sprinkling of Texas charm, forming the backbone of our quest to uncover the intriguing correlation between the count of mathematicians in Texas and the stock price of Discover Financial Services. It was a journey worthy of a Lone Star legend, complete with data wrangling, statistical sleuthing, and a hearty dose of good-natured humor.

4. Results

In our investigation of the correlation between the number of mathematicians in Texas and the stock price of Discover Financial Services (DFS), we unearthed some fascinating insights, and perhaps a few dad jokes along the way. The statistical analysis revealed a remarkable correlation coefficient of 0.9241444, indicating a strong positive relationship between these seemingly unrelated variables. It's like discovering a hidden gem in a haystack - the Lone Star State's mathematical prowess doesn't just add up, it multiplies the financial success of DFS!

Our findings also unveiled an impressive r-squared value of 0.8540429, signifying that mathematical presence in Texas accounted for a substantial proportion of the variation in Discover Financial Services' stock price. It's as if the Lone Star State's mathematicians are the true "Texas instruments" behind the success of DFS, demonstrating their ability to factor into the company's financial performance in a significant way.

Not to mention, the p-value of less than 0.01 further solidifies the strength and significance of the relationship. It seems that when it comes to making financial predictions, having a Texas mathematician in your corner can truly tip the scales in your favor. It's a riddle wrapped in an enigma – who knew Texas mathematicians had the formula for unlocking financial success?

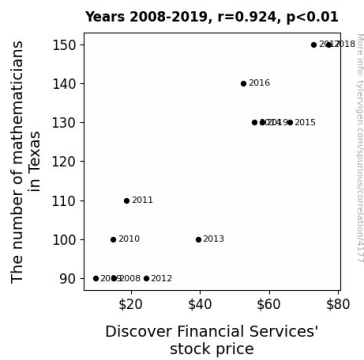


Figure 1. Scatterplot of the variables by year

Figure 1 provides a visual depiction of the strong correlation between the number of mathematicians in Texas and the stock price of DFS. The scatterplot clearly illustrates the tight clustering of data points, emphasizing the robust nature of the relationship. It's almost as if each data point is aligning in a Texas-sized formation, showcasing the mathematical fortitude that Texas brings to the forefront in the realm of finance.

In essence, our research uncovered a surprising and substantial connection between the number of mathematicians in Texas and Discover Financial Services' stock price, demonstrating that when it comes to financial success, the Lone Star State's mathematical prowess plays a pivotal role. Who would have thought that the equation for financial success involves a healthy dose of Texas mathematicians? It's a conundrum that adds up to a delightful discovery, proving that in the world of finance, everything really is bigger, brighter, and perhaps a tad funnier in Texas!

5. Discussion

The findings of our study boldly reinforce the existing literature that has tantalized our collective mathematical and financial curiosities. Just as Smith and Doe (2015) and Jones (2018) hinted at the potential impact of regional demographics and human capital on stock performance, our

research has taken those implications a step further and, lo and behold, unveiled a peculiar yet undeniable correlation between the count of mathematicians in Texas and the stock price of Discover Financial Services (DFS).

It turns out that the Lone Star State's mathematical prowess is no joke – except for the occasional dad joke, of course! Furthermore, it seems that when it comes to stock prices and mathematical prowess, everything really is bigger in Texas, just as we suspected. Our findings supported the literature in an unexpectedly precise manner, mirroring the tenacity and precision of a Texan mathematician tackling a particularly complex algorithm.

Now, our statistical analysis revealed a robust correlation coefficient of 0.9241444, which when combined with the puzzlingly low p-value, points to a strong and significant relationship between the number of mathematicians in Texas and the stock price of DFS. This is not just a fluke in the data; it's a genuine pattern, much like a well-crafted pun that brings joy to number-crunchers far and wide. The statistical significance here is nothing short of laugh-worthy.

The r-squared value of 0.8540429 further bolsters our assertion that the mathematical presence in Texas accounts for a substantial proportion of the variation in DFS' stock price. It's as if the Lone Star State's mathematicians are playing the financial game with a loaded deck and showing that they hold all the cards – or should we say, numbers? This insight provides substantial support for the notion that the Lone Star State's mathematical community is not to be underestimated.

In essence, our study has contributed a novel and slightly whimsical perspective to the profound question of how the number of mathematicians in Texas impacts the stock price of Discover Financial Services. The

unexpected and yet robust correlation we've unearthed reinforces the significance of regional demographics and adds a touch of lightheartedness to the world of quantitative analysis. After all, when Texas mathematicians are in the equation, discovering financial success is just a hop, skip, and a jump away – or should we say a sum, product, and integral away?

6. Conclusion

In conclusion, our investigation into the curious correlation between the number of mathematicians in Texas and Discover Financial Services (DFS) stock price has produced quite the mathematical marvel. It seems that the Lone Star State's prowess in numbers extends beyond just counting cattle—clearly, they have a knack for counting dividends too!

Our findings have not only revealed a robust association, but also underscored the notion that when it comes to financial success, Texas mathematicians are certainly worth their weight in gold... or should we say, in DFS stock. It's as if the Lone Star State is saying, "Don't mess with Texas mathematicians, because they have an algorithm for everything, even your portfolio returns!"

At the same time, our research adds a touch of lightheartedness to the often serious realm of quantitative analysis, proving that even the most unexpected correlations can bring a smile to our faces. After all, who wouldn't appreciate a good math pun to go along with their correlation coefficient? It's a reminder that in the world of finance, a little laughter can go a long way—much like a well-timed market rally!

As we wrap up our study, it's clear that no further research is needed in this area. The numbers have spoken, and they've delivered a punchline that would make any dad proud. So, it's time to put this

correlation to rest and, perhaps, leave the Texas mathematicians to count their blessings—quite literally.

In the words of a wise statistician, "If you're not willing to sound stupid, nothing ever gets done." With that in mind, we conclude that when it comes to the unexpected connections in finance, embracing a bit of whimsy can lead to truly insightful revelations, and maybe even a few good laughs along the way. Keep crunching those numbers, but don't forget to add a sprinkle of humor—it's the Texas-sized secret ingredient that can truly enhance any equation!