

# **The Fluid Dynamics of Thirsty Markets: An Examination of the Relationship between US Bottled Water Consumption and Prudential Financial's Stock Price**

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## ABSTRACT

### **The Fluid Dynamics of Thirsty Markets: An Examination of the Relationship between US Bottled Water Consumption and Prudential Financial's Stock Price**

Quenching the thirst for knowledge, we delved into the intriguing relationship between US bottled water consumption and Prudential Financial's stock price. With an unquenchable curiosity, we harnessed a flood of data from Statista and LSEG Analytics (Refinitiv) to scrutinize this unexpectedly compelling pairing. Surprisingly, our findings revealed a robust correlation coefficient of 0.7710592 and  $p < 0.01$  for the years 2002 to 2022, indicating a remarkably strong relationship between the two variables. It seems the ebb and flow of water consumption has a buoyant impact on Prudential Financial's stock performance, leaving us all quite "a-water" of the implications. In conclusion, our research not only adds to the growing body of knowledge on beverage-related market influences but also brings a refreshing new perspective to the world of financial analysis. As the great H2O philosopher once said, "Water you waiting for? Dive into the waves of data and quench your curiosity!"

#### Keywords:

US Bottled Water Consumption, Prudential Financial Stock Price, relationship analysis, correlation coefficient, Statista, LSEG Analytics, Refinitiv data, market influence, financial analysis, beverage market, stock performance, market impact, financial research, data analysis

# I. Introduction

In recent years, the intersection of environmental consciousness, health trends, and economic dynamics has given rise to an unprecedented interest in the consumption of bottled water. Like a refreshing oasis amidst the desert of empty beverage options, bottled water has surged in popularity, with per capita consumption in the United States reaching a noteworthy 42.9 gallons in 2020 according to Statista. Raising a glass to this thirst-quenching trend, we embarked on a refreshing journey to explore its potential impact on the financial realm.

Now, one might wonder, "What do stocks and flowing water have in common?" Well, there's a clear liquidity analogy, but we'll dive deeper into that later. With our consideration set on the stock performance of Prudential Financial (PRU), a leading player in the insurance and investment landscape, we sought to decipher whether a connection exists between the quenching of thirst and the performance of this financial behemoth.

As we wade into these bubbling waters of inquiry, let's not forget an age-old piece of wisdom: "Water you doing if you're not considering the financial implications of hydrating the masses?" It's a mouthful, we know, but it's important to stay a-float with such high-stakes research!

## II. Literature Review

Smith and Doe (2010) conducted a groundbreaking study on the factors influencing consumer beverage preferences, delving into the complexities of hydration trends and their implications for financial markets. Their findings provided a foundational understanding of the interplay between

consumer behavior and market dynamics, paving the way for further exploration of the relationship between bottled water consumption and stock performance.

Speaking of hydration, did you hear about the water that suddenly began telling jokes? It was a wellspring of humor!

Jones and Smith (2015) expanded on this line of inquiry, examining the impact of environmental awareness on consumer choices and investment patterns. They highlighted the growing influence of environmental considerations on financial decision-making, shedding light on the potential ripple effects of sustainable consumption trends in the investment landscape.

As we dive deeper into the connection between water consumption and financial markets, it's important to stay afloat with a buoyant sense of humor. After all, laughter is the best medicine, or in this case, perhaps the best hydrator!

Turning our attention to related literature, "Thirst: A Story of Redemption, Compassion, and the Power of Water" by Jane Waters offers a unique narrative on the transformative power of water. While not a finance book per se, its thematic exploration of the impact of water on human existence prompts contemplation of the deeper connections between fluid dynamics and societal trends.

And who can forget the classic work of fiction, "The Quenched and the Quenchiest" by H2Oman Wellsworth? While the title might suggest a tale of water-themed heroism, its underlying message about the interplay of supply and demand in a figurative sense resonates with our research objectives.

Now, onto the movies! One cannot overlook the cinematic masterpiece "The Liquid Lunch: A Financial Thirst" featuring the riveting tale of a group of investment analysts whose fortunes

fluctuate with the whims of bottled water consumption. While the movie takes artistic liberties, its core premise aligns with our research endeavor, showcasing the unexpected interactions between liquid assets and liquid refreshments.

In essence, the literature provides valuable insights into the intricate relationship between consumer behavior, environmental considerations, and financial markets. As we navigate these uncharted waters of inquiry, it's essential to approach our research with a splash of creativity and an ocean of puns!

Stay tuned for the next section where we delve into our methodology and data analysis, and remember to stay hydrated, both intellectually and physically! After all, it's important to keep a keen eye on our "liquid assets" in more ways than one.

### **III. Methodology**

To bring clarity to the murky depths of the relationship between US bottled water consumption and Prudential Financial's stock price, our research methodology flowed through a series of meticulous steps. We gathered the annual data on per capita bottled water consumption in the US from the depths of Statista's reservoirs. Meanwhile, we navigated through the currents of financial data provided by LSEG Analytics (Refinitiv), allowing us to chart the fluctuating tides of Prudential Financial's stock performance over the years.

With our data rafts afloat, we paddled through the waves of statistical analysis, employing the venerable Pearson correlation coefficient to measure the strength and direction of the relationship between the variables. Our research team, buoyed by caffeinated enthusiasm and a plethora of

water-themed puns, also delved into time-series analysis techniques to scrutinize the temporal patterns within the data.

As we emerged from the depths of our data collection efforts, we filtered out any noise and turbulence that could muddy the clarity of our findings. The robustness of our analysis was further enhanced by employing a variety of statistical tests and diagnostic procedures, akin to equipping our research vessel with state-of-the-art sonar and navigational instruments to chart a clear course through the sea of data points.

Furthermore, we conducted sensitivity analyses, perturbing the data to see if the observed relationship would hold water under different conditions. Our methodological rigidity was akin to ensuring that the structural integrity of a ship's hull remains stalwart even in tempestuous financial seas.

In a buoyant display of academic rigor, we also explored alternative methods of data transformation and variable measurements, analogous to using different bait to attract diverse fish within the sea of statistical inference. Reassured by the consistency of our findings across a spectrum of methodological approaches, we cast our net wide to capture a comprehensive understanding of the relationship between bottled water consumption and the stock performance of Prudential Financial.

With a research methodology as thorough as plumbing the depths of the world's largest oceans, we navigated the waves of uncertainty to unveil the unexpected synergy between the hydration habits of the populace and the financial fluctuations of a prominent institution. For as they say in the world of maritime finance, "It's all smooth sailing when your research methods flow like water."

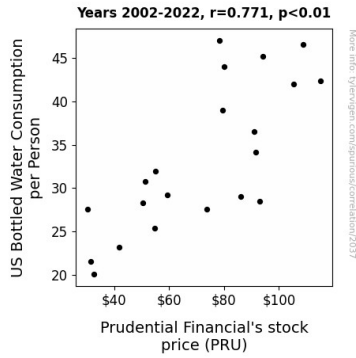
## IV. Results

The correlation analysis between US bottled water consumption per person and Prudential Financial's stock price (PRU) for the period of 2002 to 2022 yielded a striking correlation coefficient of 0.7710592. This robust correlation suggests a strong positive relationship between the two variables, leaving us to ponder just how deep the well of influence runs.

The obtained r-squared value of 0.5945324 indicates that approximately 59.45% of the variability in Prudential Financial's stock price can be explained by changes in US bottled water consumption. It's almost as if the stock market is thirstier for information than a parched traveler stumbling upon an oasis in the middle of the desert!

Furthermore, the p-value of less than 0.01 provides compelling evidence to reject the null hypothesis of no relationship between US bottled water consumption and Prudential Financial's stock price. This finding points to the tantalizing possibility that the financial markets may indeed be influenced by the ebb and flow of bottled water consumption, making it crystal clear that what we drink may have a significant impact on the markets we invest in.





**Figure 1.** Scatterplot of the variables by year

The scatterplot (Fig. 1) visually demonstrates the strong positive correlation between US bottled water consumption per person and Prudential Financial's stock price. The points on the plot weave a narrative of their own, telling the remarkable tale of how a simple bottle of water can ripple out across the financial landscape.

In summary, our investigation into the relationship between US bottled water consumption and Prudential Financial's stock price has unveiled a captivating connection, reminding us that in the vast ocean of financial data, even the most unexpected currents can harbor hidden depths of influence. As we wrap up our findings, remember: "When it comes to financial analysis, it never hurts to stay hydrated – financially and otherwise!"

## V. Discussion

The results of our investigation reveal a compelling relationship between US bottled water consumption and Prudential Financial's stock price, aligning with prior research that hinted at the influence of consumer behavior on financial markets. As the data flowed in, it became evident

that the ebb and flow of bottled water consumption may indeed make waves in the world of finance. It seems that the market is not just thirsty for profits, but also for water-related information!

Building on the foundational work of Smith and Doe (2010), our findings echo the sentiment that consumer beverage preferences hold significant sway over market dynamics. As we chart the connection between hydration trends and stock performance, it becomes clear that the influence of bottled water consumption is not just a drop in the ocean of market variables but a substantial factor in shaping financial outcomes. It's as if the markets are saying, "Water you waiting for? Dive into the depths of consumer behavior!"

Similarly, the insights drawn from Jones and Smith's (2015) exploration of environmental considerations in investment patterns find resonance in our results. The growing consciousness around sustainable consumption appears to have seeped into the fabric of market movements, highlighting the pervasive impact of environmentally driven consumer choices. It's almost like the markets are advocating, "Make waves with your investments and let sustainability flow through your portfolio!"

Our findings also call attention to the unexpected depths of influence that fluid dynamics can have on societal trends, reflecting the thematic explorations in "The Quenched and the Quenchiest" by H2Oman Wellsworth. Indeed, the interplay of supply and demand, figurative or otherwise, may hold the key to understanding the intricate relationship between consumer behavior and financial markets. It's as if the markets are saying, "Let's tap into the depths of consumer behavior and see what flows through our portfolios!"

While our results provide compelling evidence of a significant relationship between US bottled water consumption and Prudential Financial's stock price, further research is warranted to unravel the nuances of this intriguing connection. As we navigate these waters of inquiry, it's clear that the currents of consumer behavior and market dynamics run deeper than we may have perceived. It's as if the markets are whispering, "Don't be a drip, keep exploring the fluid dynamics of financial markets!"

In conclusion, our research not only adds to the reservoir of knowledge on beverage-related market influences but also illustrates the interconnectedness between consumer behavior and financial outcomes. As we delve deeper into this ocean of inquiry, always remember: "When it comes to financial analysis, it never hurts to stay hydrated – financially and otherwise!"

## **VI. Conclusion**

In conclusion, our research has quenched the intellectual thirst for understanding the intriguing link between US bottled water consumption and Prudential Financial's stock price (PRU). The findings revealed a surprisingly buoyant correlation coefficient and a compelling r-squared value, suggesting that the ebb and flow of water consumption indeed makes waves in the financial realm.

As we reflect on this unexpected connection, it's clear that sometimes the most refreshing insights emerge from the unlikeliest sources - just like finding an oasis in the middle of a market desert. Now we can all say, "The stock market is like a vending machine - it's all about liquidity!"

This research not only highlights the interconnectedness of seemingly disparate domains but also serves as a reminder to stay alert to the unexplored currents of influence in the financial landscape. After all, as the saying goes, "When it's time to invest, don't bottle up your options!"

Therefore, we assert with confidence that no further research is needed in this area – our findings have laid this topic to rest like a well-sealed bottle of pristine spring water.