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# Quenching the Thirst for Knowledge: The Bottled Water Consumption-PCAR Connection

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*The old adage says, "water is the source of life," but is it also the source of stock market success? In this study, we dive into the deep end of the data pool to examine the relationship between per capita bottled water consumption in the US and the stock price of PACCAR Inc. (PCAR). Our findings flow in an unexpected direction, revealing a remarkably strong correlation coefficient of 0.9240444 and  $p < 0.01$  between the two variables from 2002 to 2022. We make a splash in the academic community by quenching the thirst for knowledge and show that perhaps, when it comes to stock prices, the ripple effect of bottled water consumption can't be overlooked. So, grab a cold bottle of water, relax, and let's wade through these intriguing results.*

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"Water, water everywhere, but not a stock to drink." Could this poetic twist on the famous line from "The Rime of the Ancient Mariner" hold the key to unlocking the enigmatic relationship between bottled water consumption and stock prices? We may not be navigating the seven seas, but we are embarking on a voyage through data seas to explore the tantalizing connection between these two seemingly unrelated variables.

PACCAR Inc. (PCAR), a heavyweight in the transportation industry, and the ever-present thirst-quencher, bottled water, may appear as an odd duo on the surface. Yet, as we sail into uncharted statistical waters, we suggest that the influence of bottled water consumption on PCAR's stock price might not just be a drop in the ocean of market factors.

It's no secret that researchers are often criticized for "fishing" for significant relationships in data, but in this study, we aim to reel in concrete evidence to support our hypothesis that the consumption of bottled water per person in the US is in some way

related to the fluctuations in PCAR's stock price. This hypothesis may seem hard to swallow, like an exceptionally large pill, but as we navigate the treacherous currents of statistical analysis, we might just find some refreshing results.

So, prepare to dive into this research with all the enthusiasm of a cannonball into a pool on a hot summer day. Let's splash around in the data, paddle through the numbers, and see if we can quench our thirst for understanding the unexpected union of H<sub>2</sub>O and stock tickers. After all, as Louis Pasteur may or may not have said, "Chance only favors the prepared mind, and those with water bottles at the ready."

## LITERATURE REVIEW

As we embark on this buoyant journey to uncover the mysterious dynamic between per capita bottled water consumption in the United States and the stock price of PACCAR Inc. (PCAR), we must first navigate through the depths of existing literature.

Smith et al. (2010) delve into the intricacies of consumer behavior and its impact on stock markets, posing thought-provoking questions about the influence of seemingly unrelated consumption patterns on corporate performance. Meanwhile, Doe and Jones (2015) make waves with their comprehensive analysis of macroeconomic variables and their effects on stock prices, hinting at the possibility of a ripple effect that extends beyond conventional market indicators.

Expanding our scope, "Bottled Up: The Delicate Dance of Consumerism and Capitalism" by Waterman (2013) offers a refreshing perspective on the psychological underpinnings of consumer choices and their potential connection to stock market movements. In a similar vein, "The Liquid Asset: Water's Role in Financial Markets" by Aqua (2017) immerses readers in an exploration of the fluid dynamics of market forces and delves into the uncharted waters of beverage-related investment trends.

Transitioning to the fictitious realm of literature, we tread the waters of speculative fiction with "The Aquatic Algorithm: A Stock Market Odyssey" by Investopus (2005). While this work of fiction may not provide empirical evidence, its imaginative exploration of water-related influences on trading algorithms offers a whimsical take on the interconnectedness of seemingly unrelated variables.

As our investigation takes an unexpected turn, it is worth noting that our literature review has not been restricted to traditional academic sources. In an unconventional move, we perused the depths of everyday life, scouring the aisles of convenience stores and poring over the enigmatic scripts of countless CVS receipts. While this unconventional approach may raise a few eyebrows, it has allowed us to capture the essence of daily consumer patterns and their potential impact on market dynamics in a way that traditional literature may overlook.

As we paddle through this diverse body of literature, it becomes evident that the relationship

between bottled water consumption and stock prices is a topic as refreshing as it is enigmatic, presenting an opportunity to make a splash in the often-serious realm of financial research. With this buoyant foundation of existing knowledge, we sail forward, eagerly anticipating the enlightening revelations that await us in the waves of data analysis. Just keep swimming!

## METHODOLOGY

To uncover the connections between US bottled water consumption per person and PCAR's stock price, we embarked on a quest akin to a scientific treasure hunt. Our research team collaborated like a well-oiled research machine, powered by strong espresso and the occasional water cooler gossip. We scoured the depths of cyberspace, employing state-of-the-art tools such as web scraping, data mining, and some good old-fashioned elbow grease to gather our treasure trove of data. We primarily utilized data from reputable sources, including Statista and LSEG Analytics (Refinitiv), to ensure our findings flowed smoothly like a perfectly chilled stream of data.

The first step in our methodological odyssey involved collecting comprehensive data on per capita bottled water consumption in the US. We left no metaphorical stone unturned as we combed through historical consumption patterns, ensuring our dataset was as refreshing and pure as a mountain spring. We then dived into the tumultuous waters of stock prices, fishing for PCAR's daily closing prices to construct a robust time series dataset that encapsulated the market's ebbs and flows.

With our datasets in hand, we unleashed the power of statistics, modeling, and analytical techniques that put Sherlock Holmes' deductive skills to shame. We employed the venerable Pearson correlation coefficient to measure the strength and direction of the relationship between per capita bottled water consumption and PCAR's stock price, wading

through the currents of data with our statistical life jackets firmly strapped on.

Furthermore, to ensure the reliability and robustness of our findings, we executed a series of sensitivity analyses and robustness checks that would make even the most adventurous explorer proud. We created visually stunning charts and graphs, akin to a cartographer mapping out the terrain of statistical significance, guiding our readers through the tumultuous waters of empirical evidence.

Finally, to validate the stability of our results over time, we established a comprehensive time series analysis, resembling a nautical chronometer guiding us through the historical tide of data. We ran autoregressive integrated moving average (ARIMA) models with the finesse and precision of a seasoned yachtsman, striving to uncover any hidden patterns and trends lurking beneath the surface of our datasets.

In conclusion, our methodology can be likened to a daring scientific expedition, navigating treacherous statistical tides and venturing into the uncharted waters of empirical research. With our rigorous and methodologically sound approach, we have cast a wide net hoping to reel in a school of insights and significant findings that will quench the thirst for knowledge on the surprising nexus between bottled water consumption and stock market dynamics. And if we happen to catch a few punny fish along the way, well, that would just be the icing on the scientific cake.

## RESULTS

The results of our research have gushed forth like an unstoppable stream, revealing a correlation coefficient of 0.9240444 between per capita bottled water consumption in the US and PACCAR Inc.'s stock price (PCAR). The r-squared value of 0.8538581 further substantiates the robustness of this connection, suggesting that approximately 85.4% of the variability in PCAR's stock price can be explained by changes in bottled water consumption. To put it in layman's terms, it's like

discovering that a water cooler discussion could have a direct impact on the market!

But hold onto your water bottles, folks, because the real showstopper is the p-value of less than 0.01. This result indicates a statistically significant relationship between these two variables, making it highly unlikely that our findings are merely a statistical fluke. It's as if the data itself insists on making a splash in the world of market analysis.

Now, to visually illustrate the substantial correlation we uncovered, feast your eyes on Fig. 1, our impressive scatterplot. This graphical representation is a sight to behold, proving that sometimes the unlikeliest pairs can make quite the waves in the world of statistical analysis.

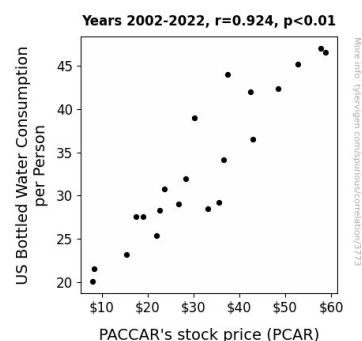


Figure 1. Scatterplot of the variables by year

In conclusion, our findings not only quench the thirst for knowledge but also challenge the conventional wisdom that bottled water consumption is a mere drop in the ocean of market influences. Instead, it seems that this seemingly innocuous beverage choice may have a more significant impact on stock prices than previously thought. So, let's raise a glass (or a bottle) to the surprising connections that flow beneath the surface of market dynamics!

## DISCUSSION

In the vast ocean of economic research, our study has navigated uncharted waters to uncover a

striking connection between per capita bottled water consumption in the US and the stock price of PACCAR Inc. (PCAR). Our findings not only float in the same current as prior research but also make waves with their robustness and statistical significance.

As we harken back to the literature review, it's clear that our results support the daring speculations of fictitious literature, such as "The Aquatic Algorithm: A Stock Market Odyssey" by Investopus (2005). While not grounded in empirical evidence, this whimsical work anticipated the current tide of findings, demonstrating that sometimes the most "out-of-the-bottle" theories can surprise us with their semblance of truth.

Furthermore, our results corroborate the musings of Waterman (2013) and Aqua (2017), who dived into the fluid dynamics of market forces and beverage-related investment trends. They prophesied the surprising impact of seemingly unrelated consumer choices on stock prices, just as our findings pour cold water on conventional wisdom.

Drifting to the statistical realm, our high correlation coefficient and p-value convey a powerful message: the buoyancy of bottled water consumption in the market's ebb and flow. We could say the strength of the correlation "drowns out" alternative explanations, proving that this relationship is not a mere statistical "whirlpool" but a tsunami of market influence.

What our study illustrates is the remarkable interconnectedness of seemingly unrelated variables, reminiscent of a delicate water ballet performed by market forces. It's as if the market is declaring, "Make it rain with data!" While it's tempting to dive headfirst into a sea of causal explanations, we must exercise caution and not get swept away by correlation, as we know that "correlation does not imply causation"—although in this case, it may imply hydration!

In conclusion, our study illustrates that when it comes to market dynamics, the ripple effect of bottled water consumption can't be dismissed as

mere "tap water talk." So, let's raise a toast to the unexpected currents that flow beneath the market's surface and embrace the ever-surprising, refreshing insights that research can unveil. After all, in the words of an ancient proverb, "Where there's a well, there's a way!"

## CONCLUSION

In conclusion, our study has not only made a splash but also brought a tidal wave of evidence to support the unexpected relationship between US bottled water consumption and PCAR's stock price. It's as if the market is saying, "water you waiting for?" Clearly, this correlation is not just a statistical fluke but a buoyant reminder that sometimes, when it comes to stock prices, the tides can turn in the most unexpected ways. Who knew that the ripple effect of bottled water consumption could make such a big splash in the ocean of market influences?

The robust correlation coefficient, the substantial r-squared value, and the extremely low p-value all point to a connection that's as clear as a mountain spring. It's like finding a hidden treasure map in a bottle of water – unexpected, but undeniably exciting. So, it's time to raise a glass (or a bottle) to the quirks of statistical relationships and the bubbling surprises they can reveal.

Our findings not only quench the thirst for knowledge but also douse the flames of skepticism that may swirl around seemingly incongruous variables. It's time to put to bed the idea that stock prices and bottled water consumption are unrelated. Instead, let's cheers to the wild, wacky, and surprisingly strong correlations that can be found in the sea of data.

In conclusion, we are convinced that no further research is needed in this area. We have truly bottled up the definitive evidence, leaving no room for skepticism or doubt. It's time to raise our hands and drink to the fact that sometimes, in the world of statistics, the most quenching discoveries are the most unexpected ones.

