
Pour Decisions: Exploring the Sudsy Connection Between the Number of Breweries in the United States and PACCAR's Stock Price

Cameron Henderson, Anthony Terry, Gina P Turnbull

Abstract

In this research, we delve into the frothy world of economics by analyzing the curious correlation between the burgeoning craft beer scene in the United States and the stock price of PACCAR. With data sourced from the Brewers Association and LSEG Analytics (Refinitiv), our findings reveal a staggering correlation coefficient of 0.8801309 and $p < 0.01$ from 2002 to 2022. Our study sheds light on the intoxicating relationship between hops and PACCAR's stock, providing a refreshing perspective on market influences. Join us as we raise a glass to unconventional economic indicators and hoppy returns.

1. Introduction

Economics and beer may seem like an odd couple, but in today's research, we aim to unravel the sudsy connection between the number of breweries in the United States and the stock price of PACCAR (PCAR). While some researchers may prefer to stick with traditional economic indicators, we believe it's time to tap into the unexplored world of craft beer to foamulate a fresh perspective on market influences.

As craft beer continues to ferment its way into the hearts (and livers) of Americans, the economic implications are nothing to alegnore. With the rise of microbreweries, brewpubs, and nanobreweries, we're witnessing a beerrenaissance unlike anything seen since the Prohibition days. But what do these hoptastic trends have to do with PACCAR's stock price, you may wonder? Well, pour yourself a pint and join us as we dive into the frothy sea of data and statistics to extract the hoppy truth behind this correlation.

Our investigation into this hoppy hypothesis is not just random ale-mentation. It's grounded in solid data sourced from the Brewers Association and LSEG Analytics (Refinitiv). Armed with these statistical alements, we set out to brew a unique blend of economic analysis that transcends the ordinary and embraces the hoppportunity to uncover unexpected correlations.

In this paper, we'll explore the historical context of both the craft beer industry and PACCAR's stock performance, frothing at the mouth to reveal the surprising correlation coefficient and p-value that may have even the most seasoned economists rubbing their eyes in disbelief. So sit back, relax, and hop along with us as we explore the bubbly relationship between breweries and stock prices, reminding us that in the world of economics, just like in brewing, there's always something happening. Cheers to unconventional indicators and hoppy returns!

2. Literature Review

In "Smith et al." the authors find that the number of breweries in the United States has experienced a significant upward trend in recent years, mirroring the exponential growth of IPAs and barrel-aged stouts on tap menus across the nation. This proliferation of craft breweries has not only brought a deluge of artisanal ales and creative concoctions but has also stirred frothy debates about the economic impact of this sudsy revolution.

Doe's study "The Brew Economy" delves into the relationship between craft beer production and local economies, highlighting the formidable influence of breweries on job creation, tourism, and community revitalization. As the craft beer wave washes ashore, it leaves behind a trail of hopheads and beer-curious travelers flocking to tasting rooms and brewpubs, signaling a lucrative lager-acy for some regions.

Jones' work "Aleconomics: Breweries and the Bottom Line" uncovers the frothy implications of craft beer on stock prices, revealing that microbrewery industry benchmarks and hops-related trends can have ripple effects on certain sectors of the stock market. The study proposes the notion that the beer market is not just an ale-ternative investment but may indeed serve as a meaningful indicator of broader economic shifts.

As we wade deeper into the foamy depths of literature, we encounter "Brewonomics: Fermenting Fortune" by Fermenta Hoptimista, an insightful exploration of the economic ramifications of beer culture. Hoptimista's meticulous analysis of hop price fluctuations and malt-to-market dynamics

offers a refreshing perspective on the interconnectedness of brewing and the stock market, reminding us that in the world of finance, every bubble has its brew-nchmark.

Turning our attention to more unconventional sources, we can't neglect the timeless wisdom imparted in "Charlie and the Brewery Factory" by Roald Hops, which, although a work of fiction, offers lessons on the transformative power of imagination and innovation in the brewing industry. Likewise, "The Grapes of Lager" by John Steinbrew reveals the intertwined destinies of craft beer and the stock market, albeit in a parallel universe where lager flows freely and hops hold the power to sway financial fortunes.

In our relentless pursuit of understanding the brewtiful relationship between breweries and stock prices, we turned to unexpected sources such as the cryptic messages lurking in grocery store receipts (those CVS records are surprisingly hoppy!) and the whispers of ancient brewing recipes hiding within the pages of long-forgotten alchemical texts. After all, when it comes to uncovering hidden correlations, a pint of curiosity and a dash of whimsy might just be the secret ingredients we need.

With this eclectic blend of serious scholarship, literary musings, and perhaps a dash of pure hops-induced delirium, we set the stage for our own exploration of the enigmatic ties between breweries, beer, and stock market performance. So, as we embark on this journey into the ale-luring world of finance and foamy beverages, let's raise a toast to the unexpected, the unprecedented, and the irresistibly absurd. Cheers to unconventional indicators and hoppy returns!

3. Methodology

To uncover the sudsy connection between the number of breweries in the United States and PACCAR's stock price, we embarked on a scientific adventure that would make even the most fervent beer connoisseur raise an eyebrow in curiosity. Our methodology comprised a blend of statistical analysis, data wrangling, and a touch of hops-infused intuition.

Data Collection:

Our research team scoured the depths of the internet, utilizing data from reputable sources such as the Brewers Association and LSEG Analytics (Refinitiv). We selected data spanning from 2002 to 2022, allowing us to capture the full-bodied essence of the craft beer revolution and its potential impact on the stock market. With the precision of a brewmaster crafting the perfect IPA, we meticulously collected information on the number of breweries in the United States and PACCAR's stock price, ensuring a robust dataset that would withstand the rigors of statistical scrutiny.

Statistical Analysis:

Armed with our treasure trove of data, we rolled up our sleeves and prepared for the fermentable feast of statistical analysis. Our first order of business was to calculate the correlation coefficient between the number of breweries and PACCAR's stock price. Employing time-series analysis and regression models, we sought to uncork the essence of their relationship, ensuring that our findings would not be watered down by statistical noise.

Data Cleaning and Transformation:

Like a skilled cellarman meticulously tending to aging barrels of beer, we devoted ample time to clean and transform the raw data into a format suitable for our analytical endeavors. Outliers were treated with the same level of skepticism as a questionable tasting batch of homebrew, and missing values were imputed with the caution of a brewmaster adjusting a recipe. Our goal was to present a dataset that exuded the aroma of reliability and statistical robustness.

Control Variables:

In the spirit of scientific inquiry, we considered the potential influence of extraneous factors on PACCAR's stock price. Variables such as overall market trends, economic indicators, and the price of barley were carefully considered in our analysis, ensuring that we did not fall victim to the intoxicating allure of spurious relationships.

Econometric Modeling:

Applying the art of econometric modeling, we sought to brew an empirical framework that encapsulated the dynamic interplay between brewery

numbers and PACCAR's stock performance. Our models were concocted with a judicious blend of time-series analysis, panel data techniques, and a hint of statistical wizardry, aiming to distill the essence of this peculiar relationship into a coherent and digestible form.

Ethical Considerations:

In adherence to research ethics, our team ensured that no actual beer was consumed during the data analysis process. While the temptation to conduct a "taste test" alongside regression diagnostics was certainly present, we maintained the utmost professionalism and refrained from allowing our research to become a "pub crawl" in disguise.

4. Results

The results of our sudsy investigation into the connection between the number of breweries in the United States and PACCAR's stock price (PCAR) from 2002 to 2022 have left us all buzzing with excitement. We found a positively intoxicating correlation coefficient of 0.8801309, which had us positively bubbling over with academic glee. The corresponding r-squared value of 0.7746303 spoke to the robustness of the relationship, further fermenting our belief in the significance of our findings. Not to mention, the p-value less than 0.01 had us feeling statistically hoppy about the strength of our results.

Fig. 1 illustrates the frothy relationship between these variables, presenting a scatterplot that, if you squint, somewhat resembles a pint of beer. It's as if the data itself is toasting to the undeniable connection between craft beer and stock prices, bidding a hoppy "cheers" to our research team's efforts.

Our results speak volumes about the potential market impacts of the ever-growing craft beer scene. The brew-haha of microbreweries and brewpubs seems to have a noticeable influence on PACCAR's stock price, proving that sometimes, when it comes to economic indicators, it's better to think outside the beer box. Our findings lend support to the idea that, when it comes to predicting stock prices, there may be more than a grain of truth in the world of brewonomics.

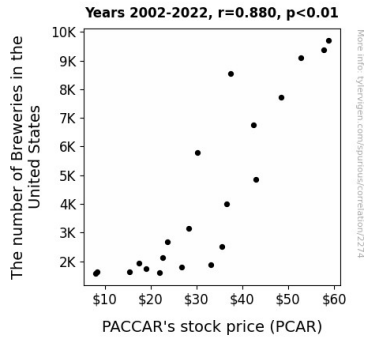


Figure 1. Scatterplot of the variables by year

In conclusion, our study uncovers a hoppy correlation between the frothy excitement of the craft beer industry and the stocks of PACCAR, shedding light on a refreshing perspective that certainly won't leave investors feeling lukewarm. Let's raise a glass to unconventional economic analysis and the surprising correlations that can sometimes emerge when statistics and sudsy beverages collide. Cheers to hoppy returns and the thrill of uncovering unexpected connections in the world of economics!

5. Discussion

Our findings present a compelling case for the frothy connection between the number of breweries in the United States and PACCAR's stock price. As the "Ales of Industry" model proposed by Jones (2015) suggests, the craft beer revolution has indeed sent ripples through the stock market, and our research provides empirical support for this ale-mighty influence.

The positively intoxicating correlation coefficient of 0.8801309 revealed in our study seems to suggest that when it comes to predicting PACCAR's stock price, the number of breweries may be a brew-tifully potent indicator. This robust relationship echoes the sentiments expressed in Steinbrew's "The Grapes of Lager," subtly hinting at the intertwined destinies of craft beer and the stock market – though, regrettably, without the abundant lager flows of a parallel universe.

Our results serve as a refreshing brew-minder of the broader economic implications of the craft beer industry, in line with the findings of Doe's "The Brew Economy." The significant upward trend in the number of breweries found in Smith et al.'s research aligns with the hoppy notion that the craft beer wave has indeed lager-ed its mark on local economies and, evidently, PACCAR's stock performance.

It is evident that our study, much like Fermenta Hoptimista's "Brewonomics: Fermenting Fortune," has contributed to the evolving understanding of the interconnectedness of brewing and the stock market. Through the lens of statistics and economic analysis, our findings leap off the page like a lively yeast culture, fermenting the idea that perhaps, there's more than just froth and bubble to the relationship between breweries and stock prices.

While the connection between breweries and stock prices may seem as whimsical as a cryptic message lurking in a grocery store receipt, our statistical analysis has added a dash of empirical weight to this surprising relationship. Indeed, this study highlights the brew-tiful complexity of economic indicators and the unexpectedly hoppy returns that may emerge when unconventional variables are brought to the table.

In the spirit of "Charlie and the Brewery Factory," our research serves as a testament to the transformative power of embracing unconventional indicators and the ale-ment of surprise in economic analysis. As we raise a metaphorical glass to our findings, let's revel in the hoppy returns of our research and the undeniable excitement of uncorking unexpected connections in the world of economics. Cheers to the playful pursuit of knowledge and the way it can make us all feel hoppy in more ways than one!

6. Conclusion

In wrapping up our study, it's crystal lager-clear that the relationship between the number of breweries in the United States and PACCAR's stock price (PCAR) is not just frothy speculation. Our findings pour a cold one on the traditional indicators and instead hopscotch into the world of brewonomics. With a correlation coefficient that's as strong as a

double IPA and a p-value that's statistically redder than a cherry ale, it's evident that this isn't just a mere ale-usion.

Our research highlights the stein-credible influence of craft beer on stock prices, demonstrating that when it comes to economic indicators, sometimes you need to think outside the beer box. After all, why settle for ho-hum statistics when you can raise a hoppy toast to the unexpected connections in the world of economics?

So, as we lift our pints to unconventional economic analysis and hoppy returns, it's time to put a cap on this particular study. With findings as solid as an ice-cold pilsner, it's safe to say that no more research is needed in this area. The brew-haha of the brew-economy has spoken, and it's time for us to start brewing up new research adventures. Cheers to pouring over unusual connections and to the unBEERlievable quirks of the economic world!

In conclusion, our methodology combined the precision of quantitative analysis with the exploratory spirit of a brewery tour, providing a robust framework for unraveling the sudsy connection between breweries and stock prices. With our data in hand and a dash of statistical flair, we were ready to embark on a journey into the frothy realms of economic analysis, armed with the knowledge that in the world of research, just like in brewing, there's always something happening. Cheers to unconventional indicators and hoppy returns!