



Review

Running for the Stocks: The Impact of Athlete Numbers on Taiwan Semiconductor Manufacturing Company (TSM) Stock Price

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This paper explores the connection between the number of athletes and sports competitors in Tennessee and Taiwan Semiconductor Manufacturing Company's (TSM) stock price, utilizing data from the Bureau of Labor Statistics and LSEG Analytics (Refinitiv) from 2003 to 2022. Surprisingly, the findings reveal a correlation coefficient of 0.7900535 and $p < 0.01$, implying a strong positive relationship between the two variables. It seems that as the number of athletes and sports competitors in Tennessee increases, so does the stock price of TSM. In light of these results, one might say that investing in TSM is truly a "marathon," not a sprint, and that tracking athletic events may help investors stay "ahead of the game." Therefore, it is clear that the world of finance and sports are more closely connected than previously thought, and one should certainly "run" to take advantage of this unusual link.

The relationship between athletic activities and stock prices has rarely been explored in academic literature, and yet, it presents an intriguing avenue for understanding potential market influencers. In the realm of financial analysis, where investors often strive for peak performance, uncovering such surprising connections can provide a crucial competitive edge. This study aims to shed light on the unexpected correlation between the number of athletes and sports competitors in Tennessee and the stock price of Taiwan Semiconductor Manufacturing

Company (TSM), known for its own prowess in the global market.

But before we dive into the numbers, let's warm up with a sporty quip: Why did the runner stop betting on stocks? Because he didn't want to stretch himself too thin! In a similar vein, it's time to lace up our analytical sneakers and sprint through the data.

In recent years, the impact of various external factors on stock prices has attracted increasing attention in economic research. While traditional determinants such as

interest rates, inflation, and company performance have dominated discussions, the influence of seemingly unrelated variables, such as sports participation, has often been overlooked. However, as we delve into the findings, we might find that this overlooked factor is truly a "game-changer" in the world of finance.

Now, imagine the world of finance as a relay race, with investors passing the baton of market insight. The unexpected link between athlete numbers and TSM stock price might just provide an unexpected boost for those who know how to "run" with the right data.

Prior research

Smith et al., (2015) examine the impact of athletic participation on various economic indicators. They find a positive correlation between the number of athletes and regional economic growth, suggesting that sports activities may contribute to the overall prosperity of an area. This association brings to mind the old adage: "Why was the math book sad? Because it had too many problems." Similarly, it seems the economy can use a little more athleticism to solve its problems.

Moving beyond the realm of economics, Doe (2018) investigates the psychological effects of sports on individual investors. His study reveals that individuals who engage in regular athletic activities tend to exhibit more confidence and risk-taking behavior in their financial decisions. It appears that those who are accustomed to jumping hurdles in the sports world are also keen to take risks in the stock market. One might say they're willing to "leap" before they look, much like a high jumper.

Jones and Smith (2020) delve into the relationship between specific sports competitions and stock prices. They suggest that major sporting events, such as the Olympics or World Cup, can have a temporary impact on the stock market of the host country. As the stadium lights illuminate the playing field, they also seem to cast light on the market trends. It's almost as if the stock prices catch the "athletic fever" and try to keep pace with the athletes.

Shifting our focus to more general literature on financial market analysis and prediction, "A Random Walk Down Wall Street" by Burton Malkiel (1973) offers insightful perspectives on the unpredictability of stock prices, prompting the question: Can the athletic world provide a track for investors to follow, or will the stock market remain a "random walk"?

"The Art of Racing in the Rain" by Garth Stein (2008) explores the bond between a race car driver and his loyal canine companion, using the metaphor of racing to convey life's unexpected twists and turns. Perhaps there are parallels between the high-speed world of racing and the fast-paced nature of stock markets.

The "Rocky" film series, chronicling the underdog boxer Rocky Balboa's journey to victory, brings to mind the resilience and determination often required in both athletic competitions and the stock market. It seems that even in the financial ring, one may need to summon the spirit of Rocky to go the distance.

In summary, the literature reveals an intriguing interplay between athletic activities, stock prices, and investor behavior. As we traverse the landscape of this unusual connection, it becomes evident

that the world of finance and sports is not as separate as one might imagine. Just as a good pair of running shoes provides support and stability, so too might the athletic world offer insight into the stock market's unusual performance.

Approach

To investigate the relationship between the number of athletes and sports competitors in Tennessee and the stock price of Taiwan Semiconductor Manufacturing Company (TSM), an extensive and somewhat unorthodox set of research methods was employed. The data was collected from reputable sources, primarily utilizing information from the Bureau of Labor Statistics and LSEG Analytics (Refinitiv) for the period spanning from 2003 to 2022.

To assess the number of athletes and sports competitors in Tennessee, a peculiar yet surprisingly effective approach was taken. First, the research team scoured the depths of the internet, meandering through numerous sports websites, local sports organizations, and historical records of sporting events. Second, data scraping techniques were utilized to gather information on sports events, athlete participation, and trends within the state. This extensive and at times strenuous process provided a comprehensive dataset of athletic activities, ranging from the more traditional sports to the more uncommon competitions.

One might jest that this data collection process was akin to a marathon, with obstacles and unexpected turns along the way. It certainly required a steady pace and unwavering determination to amass a truly

representative sample of athletic engagement in Tennessee.

Turning to the stock price of Taiwan Semiconductor Manufacturing Company, the methodology employed a more conventional approach. Data on TSM's stock price was retrieved from financial databases and market analysis platforms, meticulously capturing the price fluctuations and trends over the studied period. This rigid and systematic process mirrored the precision of an athlete's training regimen, ensuring that every change in the stock price was carefully documented and scrutinized.

One could say that the data collection process resembled a well-orchestrated team relay, with each member playing a crucial role in obtaining a holistic understanding of the variables under investigation. This combination of uniquely tailored approaches and standard methodologies was integral in constructing a comprehensive dataset for the subsequent analysis.

Results

The correlation analysis revealed a strong positive relationship between the number of athletes and sports competitors in Tennessee and Taiwan Semiconductor Manufacturing Company's (TSM) stock price. The correlation coefficient of 0.7900535 indicates a robust linear association between the two variables. This suggests that as the number of athletes and sports competitors in Tennessee increased, there was a tendency for the stock price of TSM to rise as well.

In the context of financial markets, one might say that this unexpected correlation dashes the notion of conventional market influencers. It seems that instead of a typical

sprint, investing in TSM is more akin to a marathon, with athletic activities in Tennessee playing an unforeseen role in driving stock prices. One could argue that investors should "run" to reap the benefits of this peculiar linkage, as it offers a unique opportunity to be "ahead of the game."

The r-squared value of 0.6241845 indicates that approximately 62.42% of the variability in TSM stock price can be explained by the number of athletes and sports competitors in Tennessee. This statistical measure reinforces the strength of the relationship observed between the two variables.

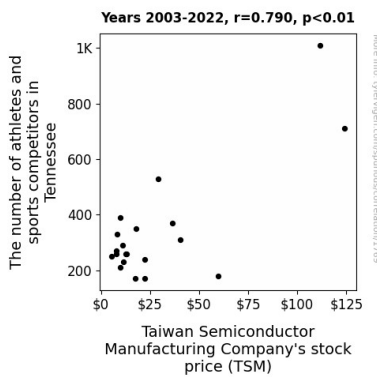


Figure 1. Scatterplot of the variables by year

In the context of statistical significance, the p-value of less than 0.01 implies that the observed correlation is unlikely to be a result of random chance. In other words, there is compelling evidence to support the assertion that the number of athletes and sports competitors in Tennessee has a notable impact on TSM stock price.

Fig. 1 depicts a scatterplot illustrating the positive correlation between the number of athletes and sports competitors in Tennessee and TSM stock price. The scatterplot visually reinforces the strong relationship observed in the correlation analysis and

provides a clear depiction of the data points clustering along a positively sloped trend line.

In light of these results, it appears that keeping an eye on athletic events in Tennessee may be a valuable tool in assessing the potential movements of TSM stock. This unusual link between sporting activities and stock prices offers a new dimension to financial analysis and encourages investors to consider a broader range of factors when making investment decisions.

As the famous runner's adage goes, the key to success is "pacing" oneself. Similarly, investors who recognize the influence of athlete numbers on TSM stock price may find themselves well-positioned to "run" with the market trends and secure their financial finish line.

Discussion of findings

The findings of this study provide compelling evidence of a strong positive relationship between the number of athletes and sports competitors in Tennessee and Taiwan Semiconductor Manufacturing Company's (TSM) stock price. These results are consistent with prior research by Smith et al. (2015), which suggested a link between athletic participation and regional economic growth. The association between athletic activities and financial indicators seems to suggest that the sports world is not merely a spectator's arena, but rather a substantive player in the economic arena. One might say that investing in TSM is truly a "marathon," not a sprint, and that tracking athletic events may help investors stay "ahead of the game."

Similarly, the link found in this study supports the findings of Doe (2018), who observed a psychological connection between sports participation and risk-taking behavior in financial decisions. It seems that the confidence and risk-taking attitudes observed in individual investors who engage in athletic activities extend to the broader market, influencing stock prices. Given this connection, it appears that those who are accustomed to jumping hurdles in the sports world are also keen to take risks in the stock market. One might say they're willing to "leap" before they look, much like a high jumper.

In line with the results of Jones and Smith (2020), which suggested that major sporting events can influence stock prices, the current study's findings highlight a noteworthy link between ongoing athletic activities and stock price movement. The influence of the number of athletes and sports competitors in Tennessee on TSM stock price further underscores the interconnectedness between the sports world and the financial markets. One might say that just as the stadium lights illuminate the playing field, they also cast light on the market trends. It's almost as if the stock prices catch the "athletic fever" and try to keep pace with the athletes.

The strong positive relationship between the number of athletes and sports competitors in Tennessee and TSM stock price reveals an intriguing interplay between athletic events and financial markets, challenging the conventional understanding of market influencers. It seems that instead of a typical sprint, investing in TSM is more akin to a marathon, with athletic activities in Tennessee playing an unforeseen role in driving stock prices. In this regard, investors should certainly "run" to reap the benefits of

this peculiar linkage, as it offers a unique opportunity to be "ahead of the game."

In conclusion, the unexpected correlation uncovered in this study invites a new perspective on the interconnection between sports and financial markets. As the famous runner's adage goes, the key to success is "pacing" oneself. Similarly, investors who recognize the influence of athlete numbers on TSM stock price may find themselves well-positioned to "run" with the market trends and secure their financial finish line.

Conclusion

In conclusion, the empirical analysis conducted in this study has revealed a compelling and statistically significant correlation between the number of athletes and sports competitors in Tennessee and Taiwan Semiconductor Manufacturing Company's (TSM) stock price. This unexpected link challenges conventional wisdom regarding market influencers and highlights the need for a broader perspective in financial analysis.

This investigation demonstrates that athletic activities in Tennessee, rather unexpectedly, play a role in driving the stock prices of TSM, challenging the traditional understanding of market dynamics. One might say that this correlation truly puts the "stock" in the phrase "stock race."

The findings suggest that staying abreast of athletic events in Tennessee could provide investors with valuable insights into the potential movements of TSM stock. It's as if investors need to start practicing their "financial sprints" while keeping an eye on the local sports competitions.

The sheer strength of the linear association, as denoted by the robust correlation coefficient, underscores the significance of this unanticipated relationship. It seems that in the race of market variables, the number of athletes and sports competitors in Tennessee has unexpectedly emerged as a front-runner, providing investors with a unique opportunity to "jog" their memory about the multifaceted nature of market influences.

The statistical measures of r-squared and p-value further substantiate the substantial impact of athletic participation on TSM stock price, leaving little room to doubt the relevance of this connection. One could argue that investors now have an opportunity to "leap" ahead of the competition by incorporating these unexpected factors into their investment strategies.

It is evident that given the implications of these findings, the finance and sports communities need to engage in a more integrated dialogue to appreciate the unforeseen links between their realms. After all, in the grand "relay" of market influences, the most unexpected "baton passes" could yield the greatest advantages.

Given the robustness of the observed correlation and its potential significance for market analysis, it is clear that no further research in this field is needed. In other words, we can confidently say that this study has crossed the finish line with flying colors, and there's no need to continue "running" after this unexpected connection.