

Insights and Data to Help Manage Today's Changing Consumer Environment

Does the price of gas affect the purchase of lottery products? It's a question our industry has wrestled with for years but the recent spike in fuel costs has provided a unique opportunity to examine the question more closely. Our Market Analytics Team did an analysis of lottery sales and gas prices over various periods of time looking for what relationship (if any) might exist between the two factors and, if so, to what degree. We share our findings in this issue of Data in Motion.

Methodology

While the US inflation rate has been steadily on the rise since early 2021, it jumped to 7.9% in February 2022 and accelerated to 8.5% in March with gas prices up 48%¹.

US Retail Gas Prices



Our analysis took into account weekly per cap (WPC) lottery sales from three separate timeframes to capture both the current hike in gas prices and longer-term trends:

- WPC sales since January 1st, 2021
- WPC sales since January 1st, 2022
- WPC sales from February to March 2022

Next, gas prices from across the country were collected and these prices were compared to WPC lottery sales. This analysis included a broad sampling of state specific gas price data as well as the US industry average. Finally, a Pearson correlation coefficient was calculated for each time period to illustrate the relationship between gas prices and WPC lottery sales.

The Pearson correlation coefficient is the measure of strength of a linear association between two variables. In this case, the coefficient was used to indicate whether the price of gas has a positive, negative, or negligible relationship with lottery sales. And, when applied to our separate timeframes, provides context on whether the relationship between gas and lottery is a *new* relationship, a *changing* relationship, or a *well-established* relationship.

Findings

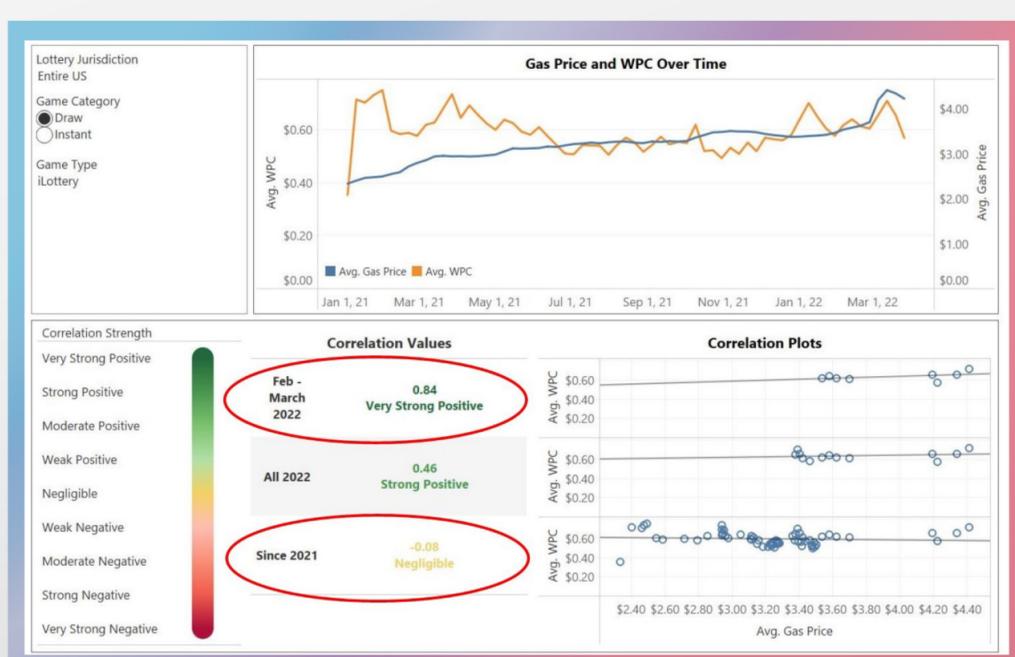
The inherent codependence of gas prices and other economic factors makes it impossible to isolate the impact that gas prices *alone* have on lottery sales. What *can* be evaluated is the directional relationship gas prices have had with lottery sales and how strong that relationship is. It is important to remember that these relationships are *correlational* and not *causal*, i.e., one factor did not cause the other to occur.

When we examine the correlations between gas prices and US WPC sales by game type over time, a few key stories appear. Most draw games have had consistent and *negligible* relationships with gas prices. In other words, sales of Bloc Lotto, Cash Lotto, Monitor Games, Numbers, and 'Other' games have not been affected one way or the other by the price of gas.

Fast Play, Regional Bloc Lotto, and Win For Life games, however, have consistently had a *positive* relationship with gas prices. This means that as gas prices go up, so do sales for these games.

When evaluating how the interaction between sales and gas prices have changed in the near-term, from February through March 2022, vs. the interaction in 2021 we see that many products have shifted their relationships from negative to positive. For example, as the chart below shows, iLottery has transformed from a *negligible* relationship in early 2021 to a strong *positive* relationship in early 2022, indicating that sales of these games have been heavily tied to gas prices in recent months.

Correlational Plots for Gas Prices & iLottery WPC Sales – US Averages



Another story worth noting is that instant product sales have gone from having a weak *negative* relationship with gas prices since early 2021 into a strong *positive* relationship in February and March of 2022 (see chart below). This implies that sales are more likely to rise with gas prices than to drop as gas prices fluctuate.

Correlational Plots for Gas Prices & Instant WPC Sales – US Averages



Final Thoughts

So, what conclusions are we able to draw from this analysis? While there are certainly some interesting findings to keep in mind, we believe our analysis shows that, overall, gas prices are not a good indicator of lottery sales performance. The fluctuations in correlational findings from game to game and over time is evidence that the gas/lottery relationship is, at best, on shaky ground. We take this as good news for our industry – it means that sales of our products are not anchored to, and we are not beholden to, the price of gas. The effects of long-term, intense economic pressure on lottery spend is still a question however, so Scientific Games is tracking the impact of the current financial situation through both data analysis and consumer research. We look forward to sharing what we learn in future editions of Data in Motion.

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Sources: 1. Trading Economics (March 2022). United States Inflation Rate. <https://tradingeconomics.com/united-states/inflation-cpi>
 2. YCharts (April 2022). US Retail Gas Price. https://ycharts.com/indicators/us_gas_price
 3. Scientific Games iNFUSE & MAP Data Sources

Clarification:

Our **April 5th** edition covered new lottery players and whether they were sticking around now that other entertainment options have opened up. In that issue, we stated that “*Players who started to play less than 12 months prior to December 2021 played at elevated levels across all price points and played \$20+ dollar games 9 percentage points higher (on average).*”

While it's true that players who started to play less than 12 months prior to December 2021 do play at elevated levels across all price points when compared to existing players, the “*9 percentage points higher (on average)*” that was cited for \$20+ games was considering *both* groups of new players: 1) started play 1-2 years prior *and* 2) started play 12 months prior.