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16. Abstract

This study analyzed the relationship between the relative sales of cars and light trucks and the following three economic factors: disposable income, price of gasoline, and unemployment rate. Multiple linear regression was used to model the relationship in the United States for monthly data for a 10-year period from January 2007 through December 2016.

The results indicate that each of the three economic factors examined was a significant predictor of the percentage of car sales out of the combined total of car and light-truck sales. All of the effects were in the expected directions: higher disposable income was associated with lower percentages of car sales, while both higher gas prices and higher unemployment rates were associated with higher percentages of car sales. Because the best-fitting regression model provided a reasonably good fit to the data (accounting for $71 \%$ of the variance in the percentage of car sales), this model was then used to predict future percentages of car sales for 36 scenarios defined by all combinations of three levels of disposable income, three levels of the price of gasoline, and four levels of unemployment. The predicted percentages of car sales ranged from $29.8 \%$ to $52.9 \%$. The lowest percentage of car sales was obtained for a scenario with the highest examined disposable income, the lowest gas price, and the lowest unemployment rate. Conversely, the highest percentage of car sales was obtained for the lowest disposable income, the highest gas price, and the highest unemployment rate.

| 17. Key Words <br> cars, light trucks, sales, multiple regression, future trends, economic <br> factors, disposable income, price of gasoline, unemployment rate | Unlimited |
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