

Business statistics



With fluctuating fuel prices causing a major concern, there arises a need to understand the impact of fuel costs in the future. This report studies the state by state average fuel prices of unleaded regular, premium gasoline and diesel in the United States using statistical tools. More focus has been given to the Colorado state.

The histogram (Fig. 1) of the state by state average fuel prices for regular unleaded gasoline¹ shows that among the 51 states, a large number of states had the average fuel price around \$1.7 to \$2. Table 1 shows that the mean of the data set is \$1.8916 with a standard deviation of \$0.1828.

Nearly 17 states had \$1.8 as their average fuel price. But the coefficient of variation is obtained as 9.67.

The median shows that about 25 states have average fuel prices above \$1.84. This clarifies that the data is normally distributed with just one state having the \$2.3 as the average price. However, the histogram shows two states, Alaska and Hawaii as outliers with their average fuel prices around \$2.5 which is considered to be the highest fuel price.

Table 1: Descriptive Statistics

Variable	Mean	StDev	CoefVar	Median
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Regular	1.8916	0.1828	9.67	1.8400
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Fig. 1

1. Data source: <http://www.fuelgaugereport.com>. Prices updated: 2/26/2009 3:05:15 AM

The scatter plot (Fig. 2) of the state by state average fuel prices for diesel fuel and premium unleaded fuel² shows that both fuel are almost equally priced. Most of the pricing is in the range of \$1.8 to \$2.5. However, the graph shows that when the price of diesel is low (or high) the price of

premium fuel tends to be high (or low). We also find that Alaska and Hawaii are the two states highlighted as outliers measuring the highest diesel and premium fuel prices.

Fig 2

2. Data source: <http://www.fuelgaugereport.com>. Prices updated: 2/26/2009 3: 05: 15 AM

The Colorado weekly regular unleaded gas prices³ for the past 8 weeks from 5th January 2009 to 23rd February 2009 has been plotted as a line chart (Fig 3). The graph shows that there has been a gradual increase in the price every consecutive week. However there have been fluctuations in the price rise in the 6th, 7th and 8th weeks. The time series plot also shows a smooth linear upward trend indicating a smooth increase in the fuel price every week.

Fig 3

3. Source: http://www.eia.doe.gov/oil_gas/petroleum/data_publications/wrgp/padd_colorado_mini_report.html

The above study on the state by state average fuel prices of unleaded regular, premium gasoline and diesel in the United States shows that the prices are fairly equal among all the states except Alaska and Hawaii where the prices are very high.