

Fuel prices



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Assignment on Fuel Prices Executive Summary- This report analyses the recent prices of unleaded regular gasoline, unleaded premium gasoline and diesel in all states across the US. All states, except Alaska and Hawaii, show fairly high regular gasoline prices which are consistently rising. As an example, the prices in Colorado for the past 8 weeks have been investigated.

Alaska and Hawaii show exceptionally high fuel prices due to the current market scenarios in the respective states. Also, the relation between premium gasoline and diesel prices has been explored. Disregarding the anomalies, it is found out to be a linear one.

Part 1-

The state by state average fuel prices for regular unleaded gasoline in the US as of 28/02/2009 (' Daily Fuel Gauge Report'), along with the corresponding histogram, are as follows-

Mean fuel price = = = \$1. 91

Since the number of states is odd, median fuel price will be the observation upon data arranging in increasing order.

Thus, Median fuel price = \$1. 86

Standard deviation = = = \$0. 17

Coefficient of Variation = = = 0. 089

The mean price for regular unleaded gasoline in the US is \$1. 91/gallon, with a standard deviation of \$0. 17/gallon and a median of \$1. 86/gallon. Most of the state prices are distributed around the mean, except the outlier cases- Alaska (\$2. 51), California (\$2. 25) and Hawaii (\$2. 45). Without these three states, the standard deviation has a much lower value, and the normal-distribution curve is less spread out.

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Alaska has the highest state fuel price in the US- \$0. 60/gallon more than the mean price. The small demand-supply market, inefficient refineries, and lack of competition have kept the gas retail prices at a consistent high (Loy, “ State begins inquiry into higher gas prices”). In California, a combination of unregulated refineries, low demand and difficulty in transportation has led to an increase in the gas prices (“ Record high gasoline prices in California but relief may be in sight”). Hawaii is the most oil-dependent state in the nation, with more than 90 percent of its energy coming from imported oil. Being a tourist destination, the states economy is also extremely sensitive to global oil prices. Due to these factors, the cost of gas in Hawaii has also shot up in recent times (Song, “ Gas Prices In Hawaii, California Hit \$4”).

Part 2-

The required scatter-plot between diesel fuel prices and premium unleaded fuel prices in the US as of 28/02/2009 (‘ Daily Fuel Gauge Report’) is as follows-

The two fuel prices show a fairly strong linear correlation, with the diesel and premium unleaded gasoline prices varying proportionally. Most states form a single clustered group. The only anomalous points are for the states of California (\$2. 33, \$2. 43), and Nevada (\$2. 26, \$2. 40) and Washington (\$2. 40, \$2. 36). In these states, the prices of premium unleaded gasoline are higher than diesel prices by an average \$0. 09.

The two outlier cases – though distributed about the linear regression line – have exceptionally high cost of both diesel and premium unleaded gasoline. The dependency of the two variables is still proportional (thus, these are not anomalous points), but the overall price is much higher than all the other 49 data points. These states – Alaska (\$3. 49, \$2. 81) and Hawaii (\$3. 84, \$2.

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64) – have such prices due to similar reasons outlined above for the case of regular unleaded gasoline.

Part 3-

The unleaded gas prices in Colorado for the past 8 weeks (‘ Energy Information Administration’), and the corresponding line chart showing the gas price time series, are as follows-

The fuel prices show a consistently increasing trend from \$1. 49/gallon in Week 1 to \$1. 83/gallon in Week 8- an overall increase of about 23%. In the given time-frame, the highest price was in Week 7- \$1. 86/gallon.

The primary reason for the spike is due to the shut down of a major Colorado refinery for repairs and maintenance. New refineries have not been built in the U. S. since the 1980s; hence, existing refineries find it hard to meet the high demand for fuel in the state (“ High gas prices means high stress in the high country”). The result is the sudden increase as shown in the data. The recent drop from Week 7 to Week 8 does not have any obvious explanation from the current market conditions, and it is expected that the price would shoot back up following the previous general trend.

Works Cited

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