Interpretation

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# Question 1. Which Store has Maximum Sales?

• Store 14 has the highest maximum weekly sales among all Walmart locations. • Store 20 has the highest total sales value

# Question 2 . Which store has maximum standard deviation i.e., the sales vary a lot. Also, find out the coefficient of mean to standard deviation

• Store 14 has the highest weekly standard deviation among all Walmart locations • Store 35 has the highest coefficient of variation

# Question 3. Which store/s has good quarterly growth rate in Q3’2012

• Store 7 has the highest quarterly growth rate in Q3 2012

# Question 4. Some holidays have a negative impact on sales. Find out holidays which have higher sales than the mean sales in non-holiday season for all stores together

* Weekly sales for at least one store was greater than the average sales on non-holiday weeks (i.e. 1,041,256) for all stores for the below holidays: Super Bowl week: 2010-2012 Labour Day week: 2010-2012Thanksgiving week: 2010-2011Christmas week: 2010-2011

# Question 5. Provide a monthly and semester view of sales in units and give insights

• We observe a seasonality effect for the month of December in which sales increases; Given the finding in question 4, this increase might have been due to the Christmas holiday effect. • There is also an increase in sales for the months of April and to some degree in June/July • There is a seasonality in which sales is lower in the first half of the year compared to the second half of the year.

• Sharp decrease in sales for semester 2 2012 could be because data was not available for the entire year so there are limitations in terms interpretation of data for the second half of 2012

# 6. Statistical Model :

• We built a model predicting sales using CPI, fuel price, unemployment rate, week number (as mentioned above by numbering the weeks) and fuel price.• The result of the linear regression model indicates that the model was statistically significant with an R2 of 0.09• CPI was the only predictor variable that was statistically significant. The result indicates that with a unit increase in CPI, sales goes up by $21,680 dollars controlling for CPI, unemployment rate, fuel price, and week number• Other predictors (i.e. CPI, unemployment rate, week number) were not statistically significant predictors of sales

#Model with best accuracy

• A model with inclusion of month and the year is the best model with R2 increasing to 0.4 and residual standard error decreasing from 151000 in model one to 128100 in model 2. Also, AIC decrease from 3823 to 3787

# 7. Change dates into days by creating new Variable

Done! Please check the script file