

Decision Making

Directions

Complete the simulation found on the Assignment Manager page on the Pearson site and answer the questions below.

- Use ExcelOM for each of the grades of gasoline
- Use Moving Average forecasting template
 - Setup for 30 periods
 - Include the Graph and Tracking signal options

Questions

1. What was the resulting MAPE for overall, regular, mid-grade, and premium? Was any grade more difficult to track?

Parameters		Current Simulation		
Forecasted Demand and Actual Demand				
	Regular	Midgrade	Premium	
Forecasted Demand	198,095	37,296		12,384
Actual Demand	198,122	37,147		12,382
MAPE (In %)	2.83	3.83		2.92
Congratulations, you met and far exceeded your MAPE goal! The forecasting models you built work pretty well. Put it down on your "business lessons learned" notebook. Keep up the great work!				
MAPE Goal				
Overall MAPE (%)				3.19
Congratulations, you met and far exceeded your MAPE goal! The forecasting models you built work pretty well. Put it down in your "business lessons learned" notebook. Keep up the great work!				

MAPE was fairly easy to track. I used a formula where I used the monthly variance multiplier and used that information to determine the next months likely demand by dividing that variance by last months price, and then multiplying it by the next months variance multiplier. This net me a very close number for Regular, Midgrade, and Premium.

2. How was the expert advice used? How was it decided when to use the advice?

I originally used expert advice at the beginning of the simulation thinking that some of the major events that were reported in emails or texts by other people were going to have a great impact on the market. That didn't seem to be the case and the market stayed consistent with my models, so after using the help once, I didn't use it ever again.

3. What impact did using the ExcelOM template have on the ability to forecast? How would the accuracy have changed without it?

I think templating a model helps with the ability to come up with reasonable estimates and forecasts, however for this model, the most relevant data was from a year ago rather than the past 3 months. For this reason I used the variance of the price rather than the moving average. This gave me really accurate results, and while I can't speak to the efficacy of ExcelOM (Unfortunately microsoft refuses to release ExcelOM for Linux users), I can say developing my own formula using google sheets was fast and efficient. Once it was created I could copy it over the rest of my data for accurate results.

4. How was the forecast changed for any unplanned events?

If a particular event was mentioned, and my formulas had given a particular estimate based on the previous year, I would react to the data by rounding up or down to the nearest fairly whole number depending on how valid I felt the data was. Most of the time the predicted outcomes were more accurate alone than with the added unplanned events factored in.

5. Were the goals reached for the simulation? If not, how could it have been improved? If yes, then what was done that led to the success?

I think the goals for the simulation were reached. I was able to create a model, use it, and react to many different factors over a short period of time. Overall it was an enjoyable simulation and a good assignment for better learning and understanding of the course material. I think by developing the model and thinking about what factors would matter, it allowed me to think like an OM manager.

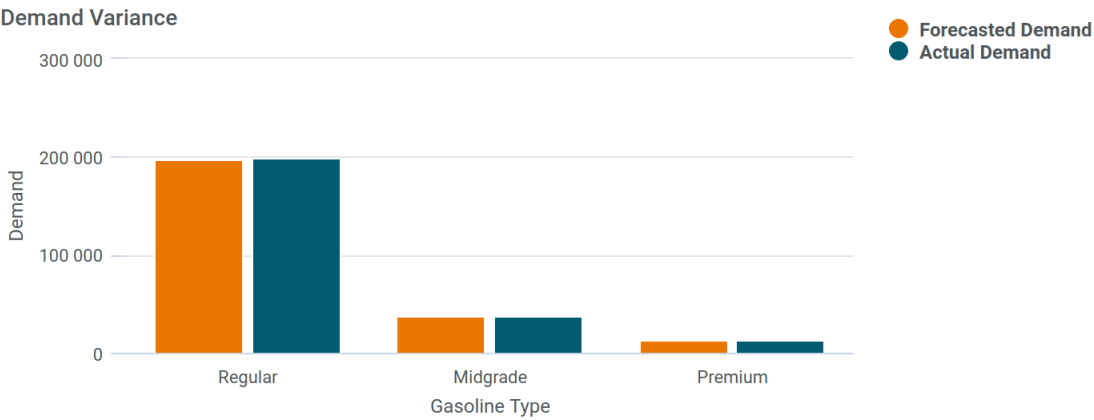
General Feedback

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Demand Analysis

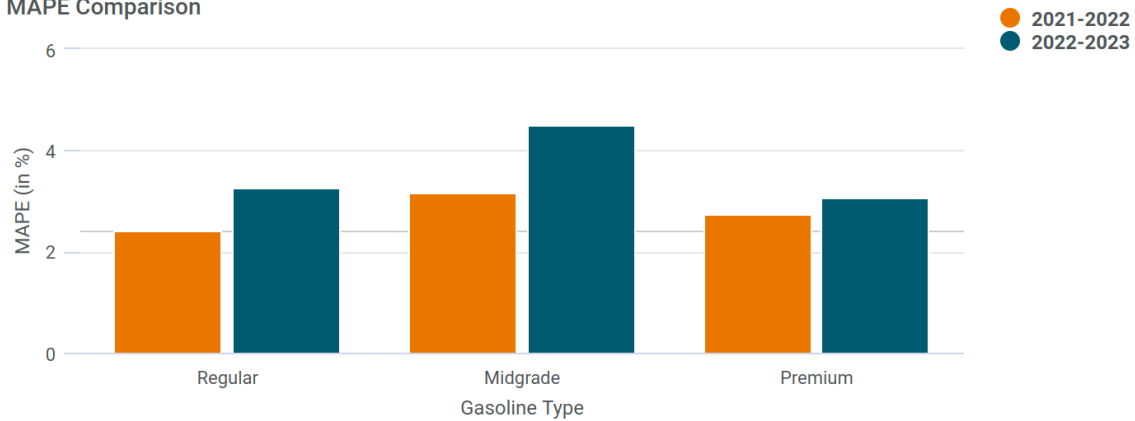
Demand Analysis



Gasoline Type	Forecasted Demand	Actual Demand
Regular	198,095	198,122
Midgrade	37,296	37,147
Premium	12,384	12,382

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MAPE Comparison



Gasoline Type	MAPE 2021-2022	MAPE 2022-2023
Regular	2.42	3.25
Midgrade	3.17	4.5
Premium	2.75	3.08

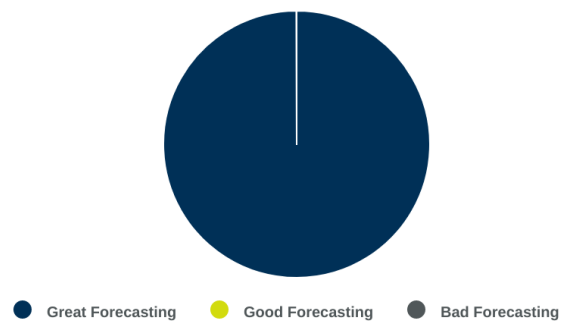
Forecasting Analysis

Forecasting Analysis

Regular

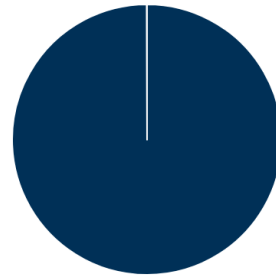
Verdict for Regular Gasoline

- 100.00% of the forecasted demand was excellent.
- 0.00% of the forecasted demand was acceptable.
- 0.00% of the forecasted demand was unacceptable.



Midgrade**Verdict for Midgrade Gasoline**

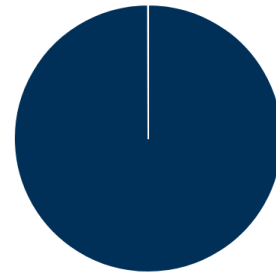
- 100.00% of the forecasted demand was excellent.
- 0.00% of the forecasted demand was acceptable.
- 0.00% of the forecasted demand was unacceptable.



Great Forecasting Good Forecasting Bad Forecasting

Premium**Verdict for Premium Gasoline**

- 100.00% of the forecasted demand was excellent.
- 0.00% of the forecasted demand was acceptable.
- 0.00% of the forecasted demand was unacceptable.



Great Forecasting Good Forecasting Bad Forecasting