This is a preliminary report and documentation of my project.
Still requires some grid search on hyperparameter tuning and task automation.
But you still can see the accuracy of my model, if the data given is correctly documented and follows a certain pattern.
Further work in progress, please stay in tune. 😊😊😊

Model details:
Trend:

- **cubic regression with respect to time**

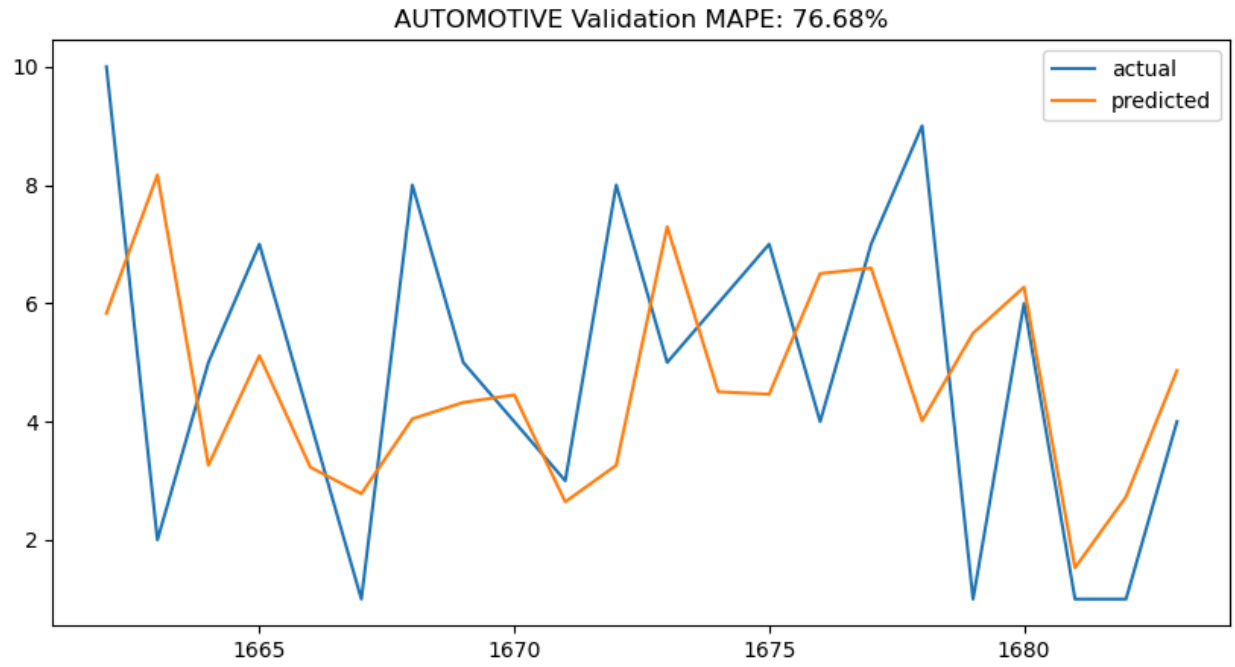
Seasonality:

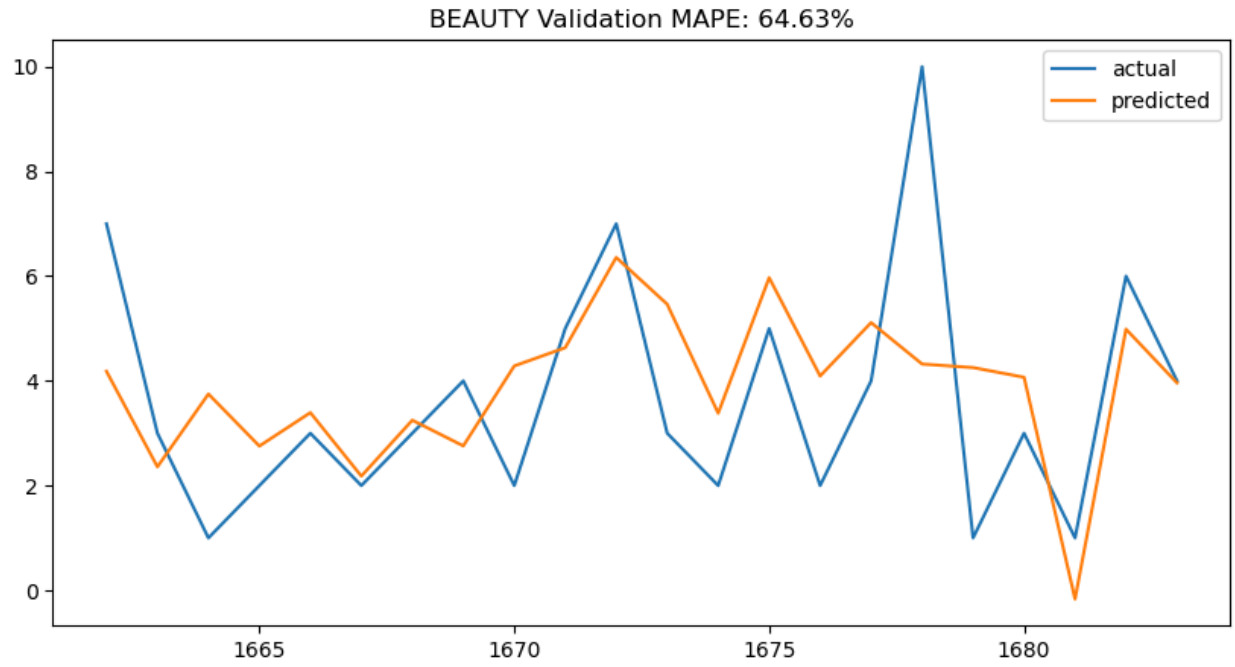
- **7 one hot encoded Monday, Tuesday, etc.**
- **Top 15 Fourier pairs with max variance on weight.**
- **one hot encoded all regional and national holidays, also considered holidays that are transferred.**

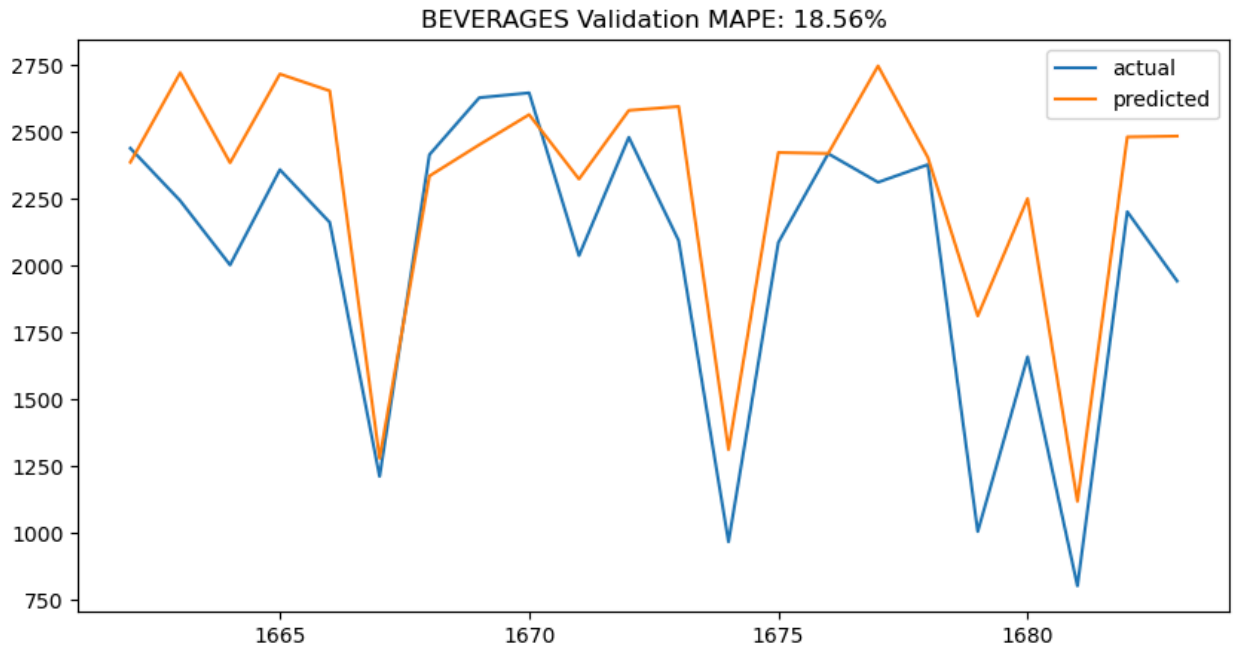
Cycles:

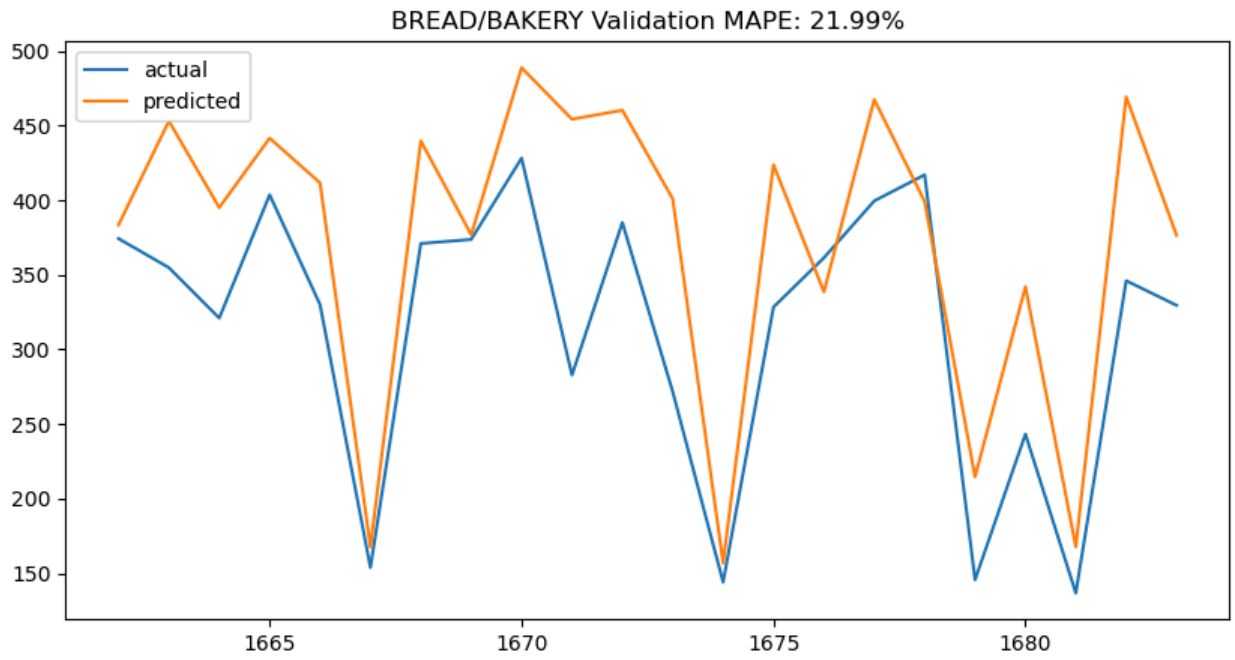
- **7 oil price lags**
- **8 sales lags**
- **3 on_promotion lags and 4 leads**

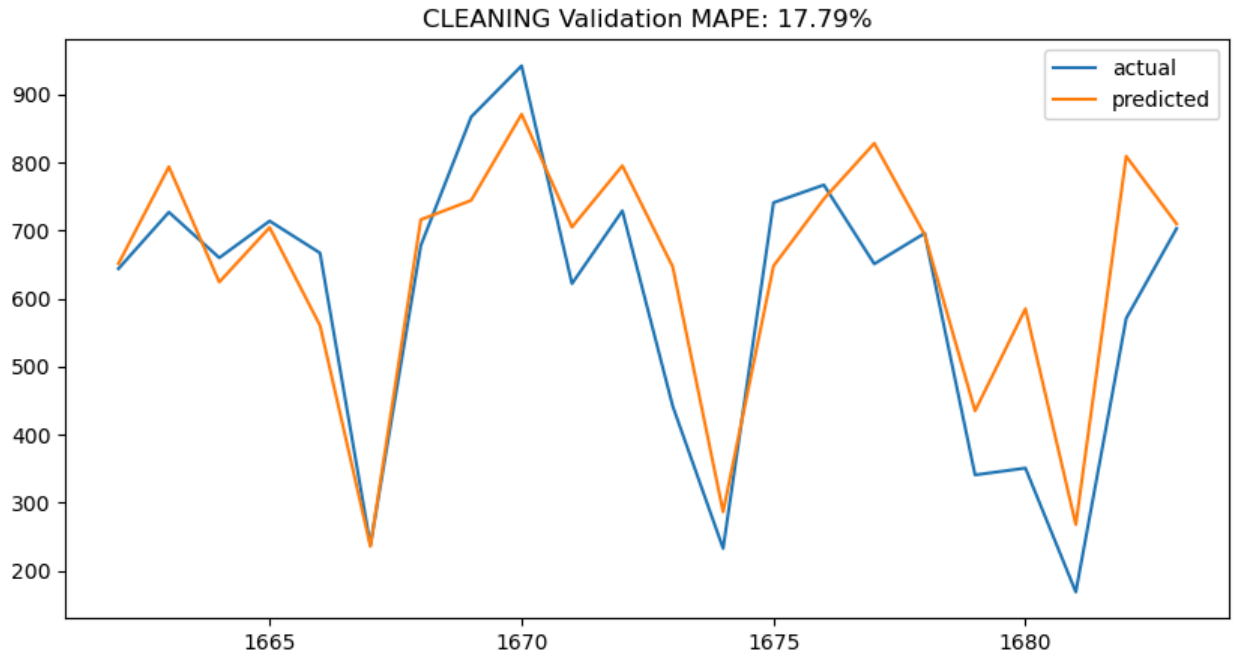
Some validation results:

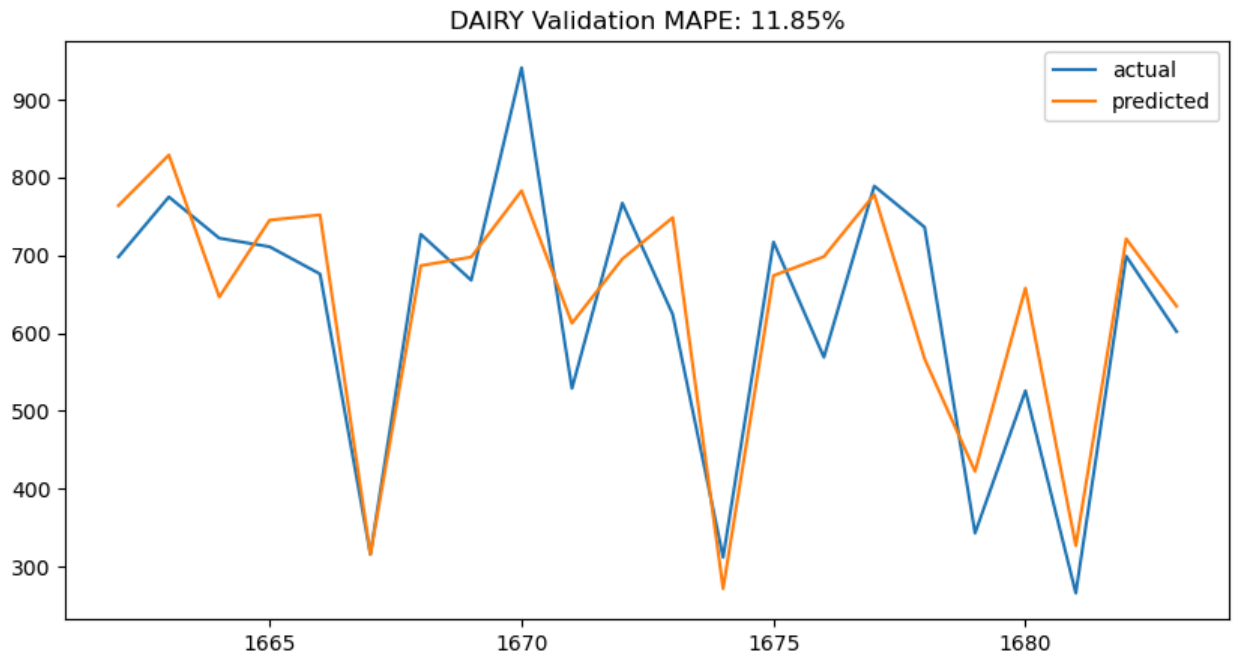


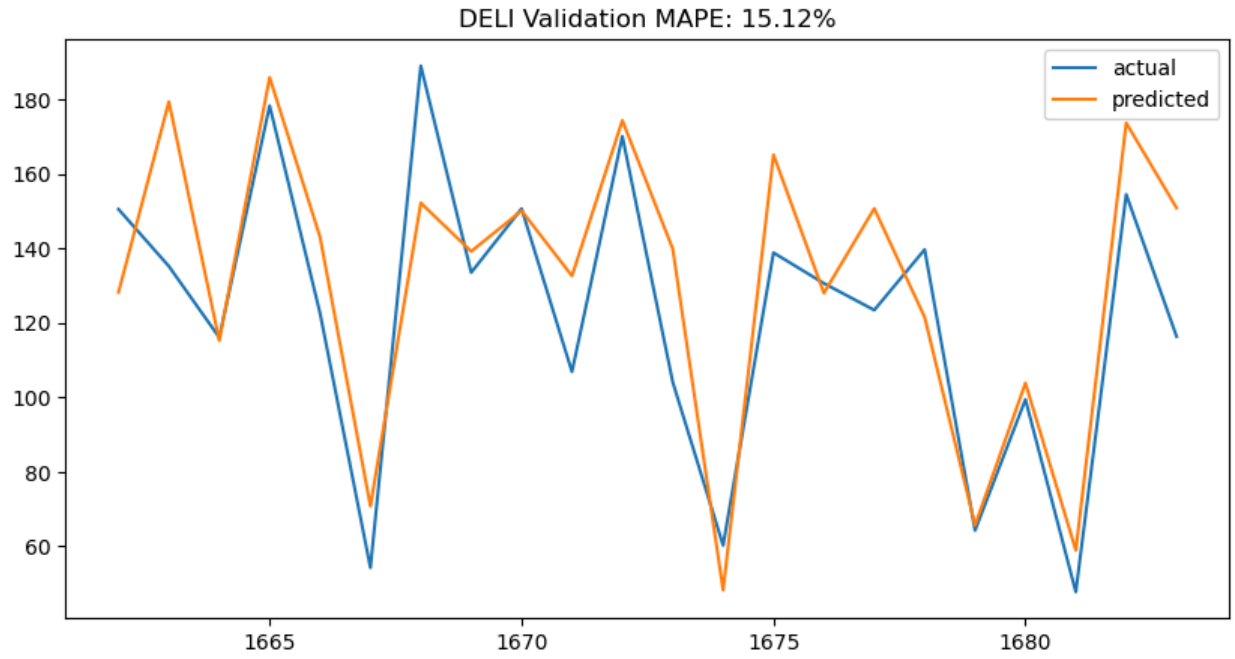

BEAUTY Validation MAPE: 64.63%
actual
predicted
10
8
6
4
2
0
1665
1670
1675
1680

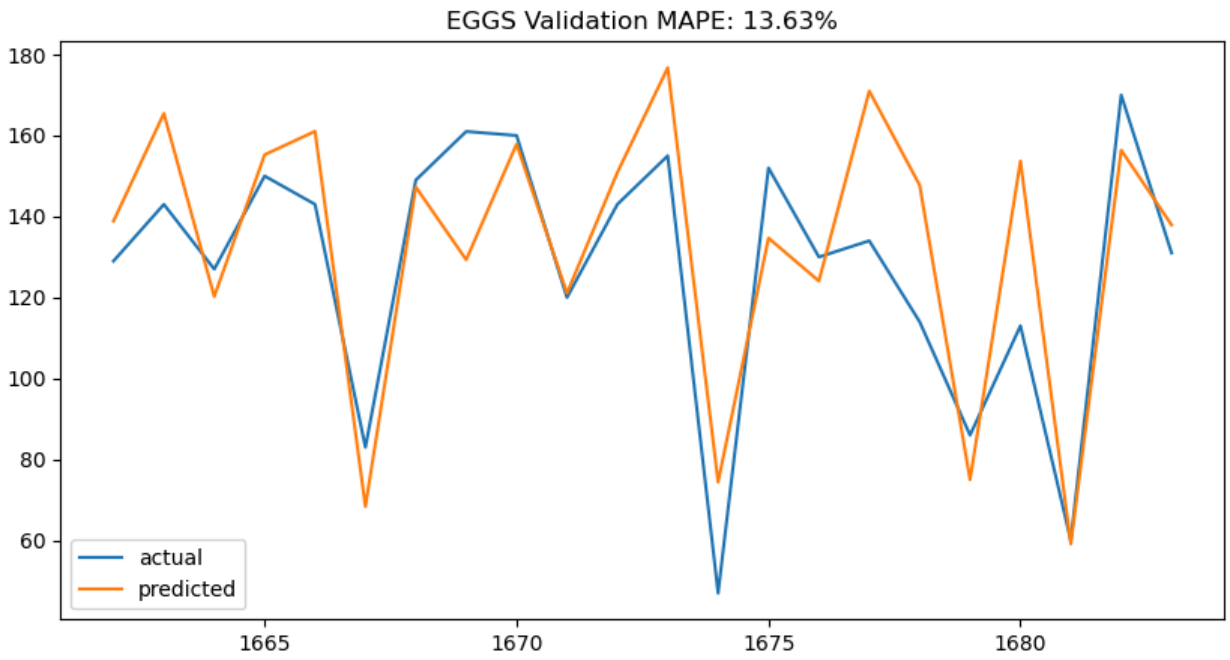

BEVERAGES Validation MAPE: 18.56%
actual
predicted
2750
2500
2250
2000
1750
1500
1250
1000
750
1665
1670
1675
1680

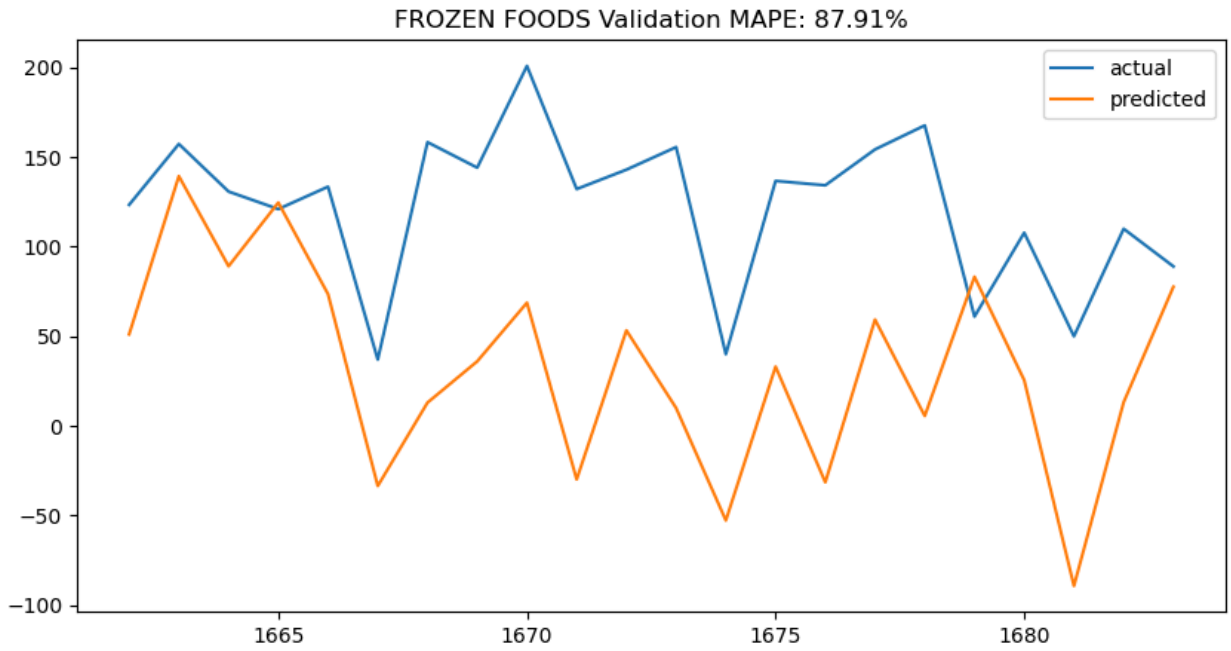

BREAD/BAKERY Validation MAPE: 21.99%
actual
predicted
500
450
400
350
300
250
200
150
1665
1670
1675
1680

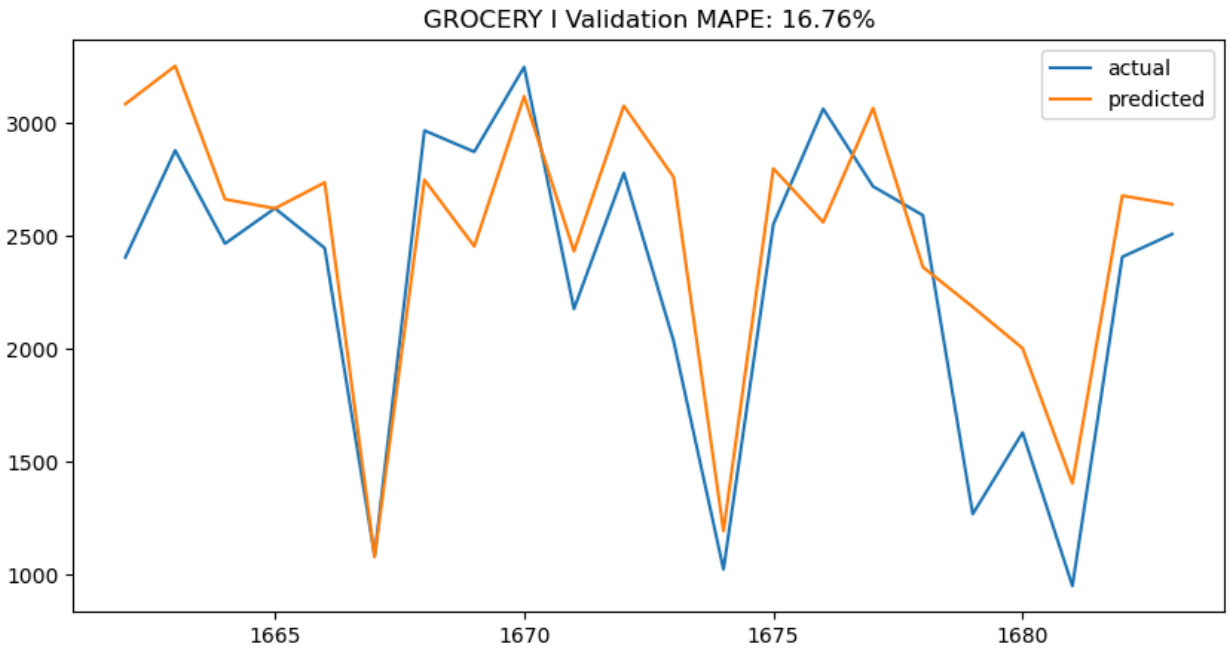

CLEANING Validation MAPE: 17.79%
actual
predicted
900
800
700
600
500
400
300
200
1665
1670
1675
1680


DAIRY Validation MAPE: 11.85%
actual
predicted
900
800
700
600
500
400
300
1665
1670
1675
1680


DELI Validation MAPE: 15.12%
actual
predicted
180
160
140
120
100
80
60
1665
1670
1675
1680


EGGS Validation MAPE: 13.63%
180
160
140
120
100
80
60
actual
predicted
1665
1670
1675
1680


FROZEN FOODS Validation MAPE: 87.91%
actual
predicted
200
150
100
50
0
−50
−100
1665
1670
1675
1680


GROCERY I Validation MAPE: 16.76%
actual
predicted
3000
2500
2000
1500
1000
1665
1670
1675
1680