

Data Science Assignment

The background is a dark blue gradient. It features several abstract elements: three large, semi-transparent blue arrows pointing upwards and to the right; a bar chart with vertical bars of varying heights on the right side; and a line graph with circular markers connected by lines, also trending upwards. In the top left corner, there are three vertical, rounded rectangular shapes in shades of gray and blue.

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Context

> Data Insight

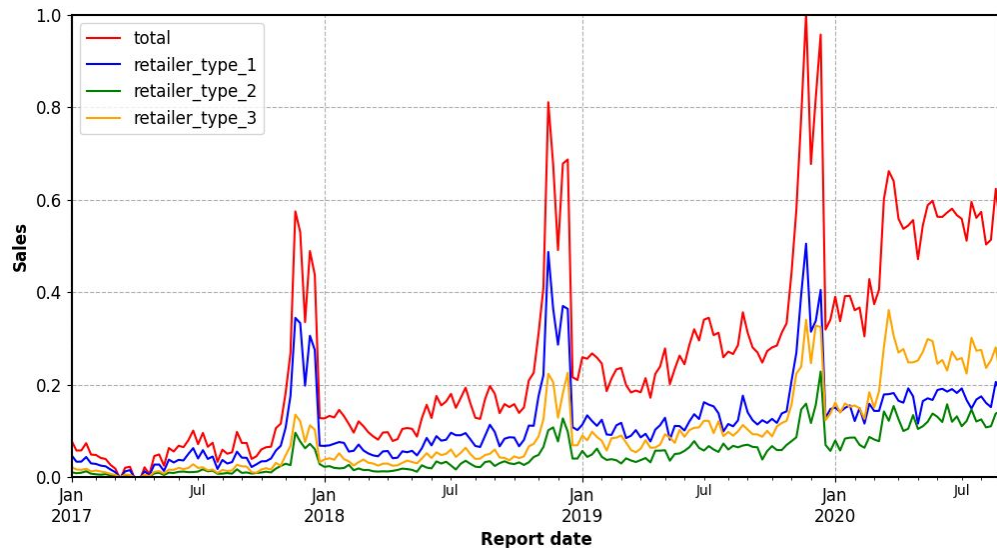
Characteristics of the data

> Forecast

Upcoming 12 weeks (not included in the dataset) for all 4 levels.

> Learning from Machines

Extra knowledge said by the machine learning forecast model



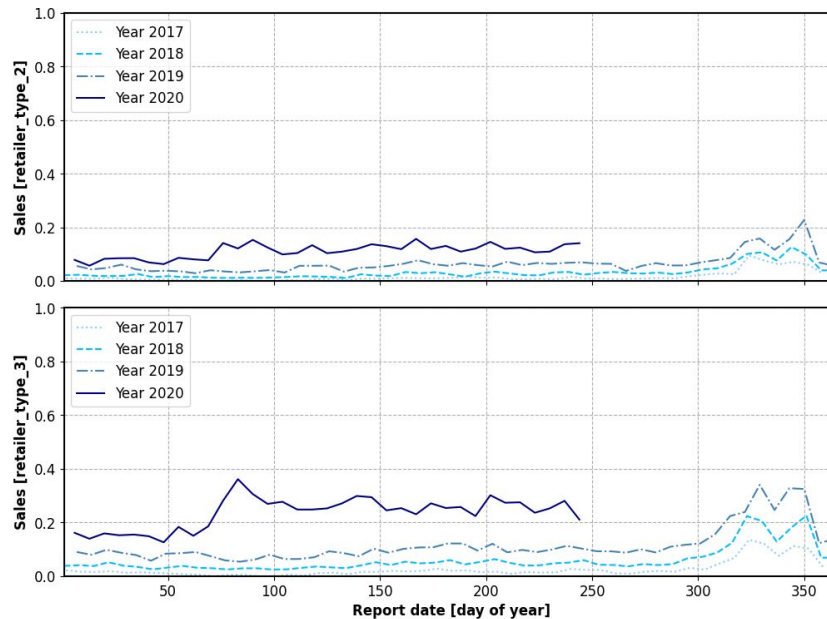
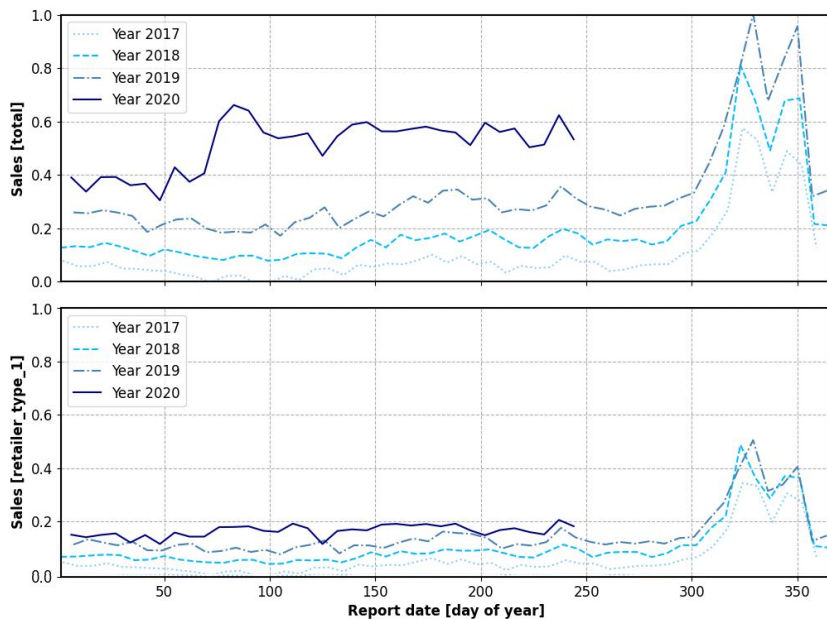
- > The dataset contains **weekly data** from **January 2017** to **August 2020**
- > The dataset contains **4 levels**, total and three `retailer type` levels
- > The `retailer_type` levels as **subsets of the total sales**

Sales Data

Data Insight

inter-annual variation

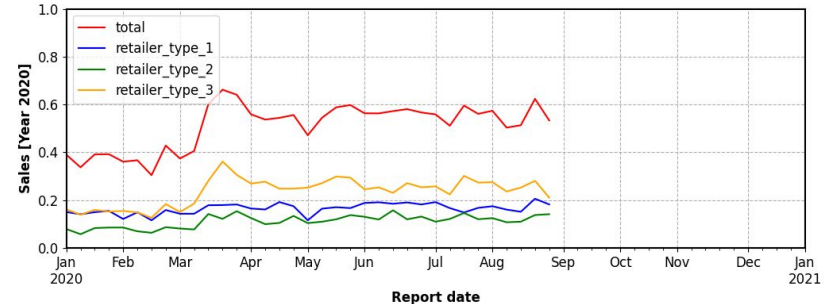
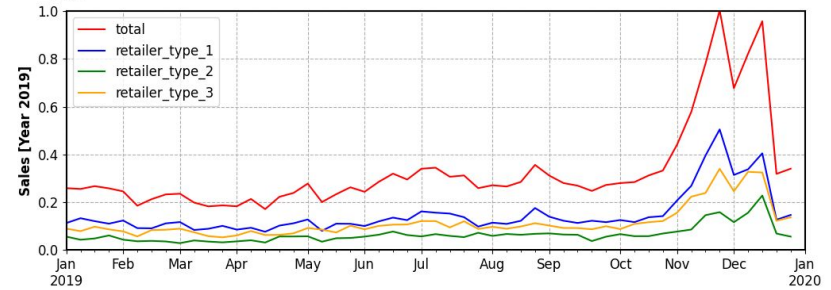
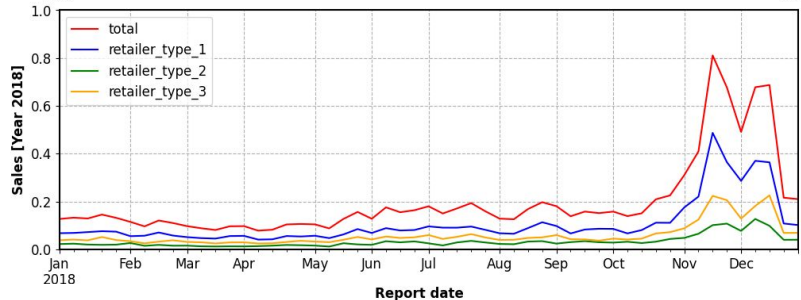
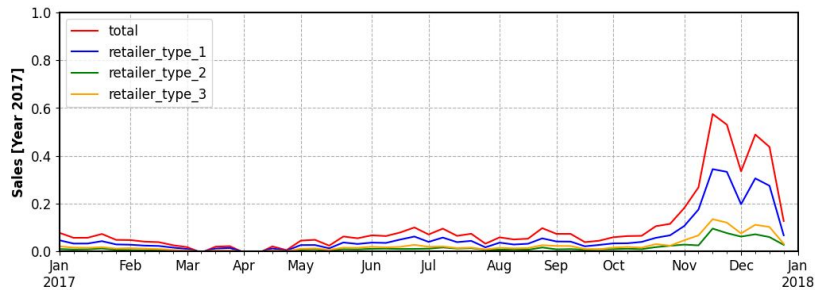
- > Increasing year by year
- > peak seasons during November to December
- > pattern change in Year 2020



Data Insight

intra-annual variation

- > Retailer Type 1 dominated sales prior to 2020
- > Retailer Type 3 experienced a surge in sales during 2020
- > Retailer Type 2 exhibits a consistent and stable sales pattern



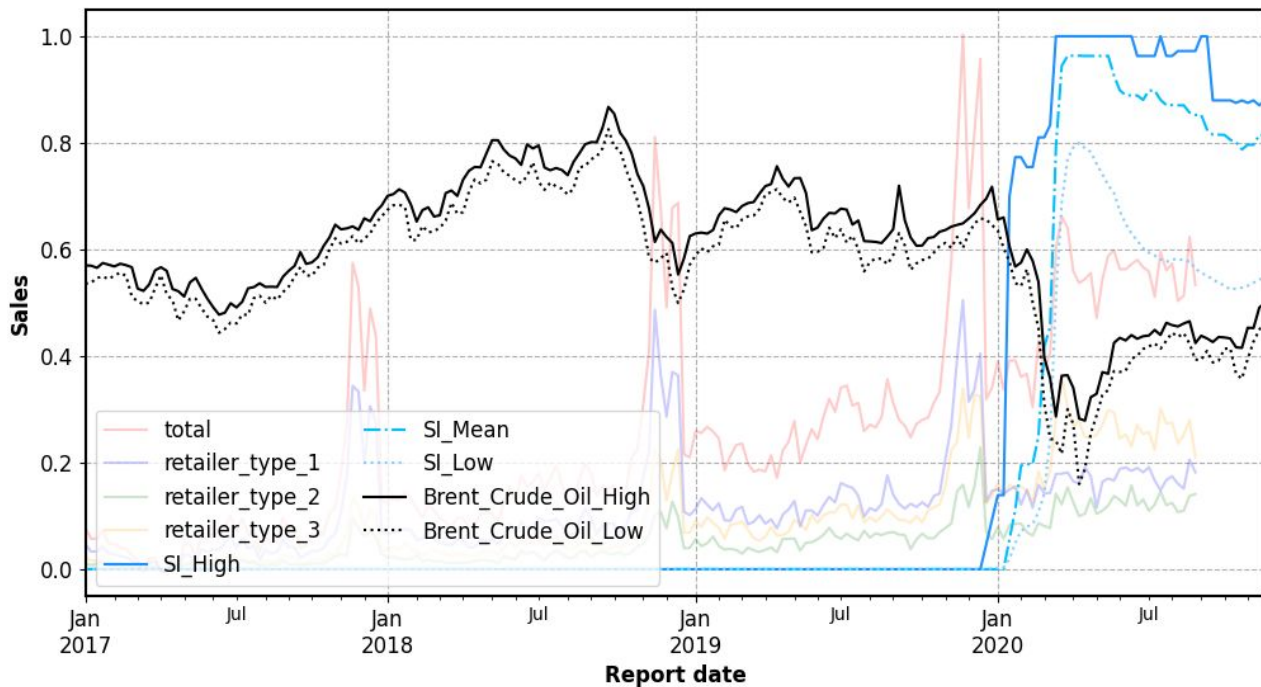
Data Insight

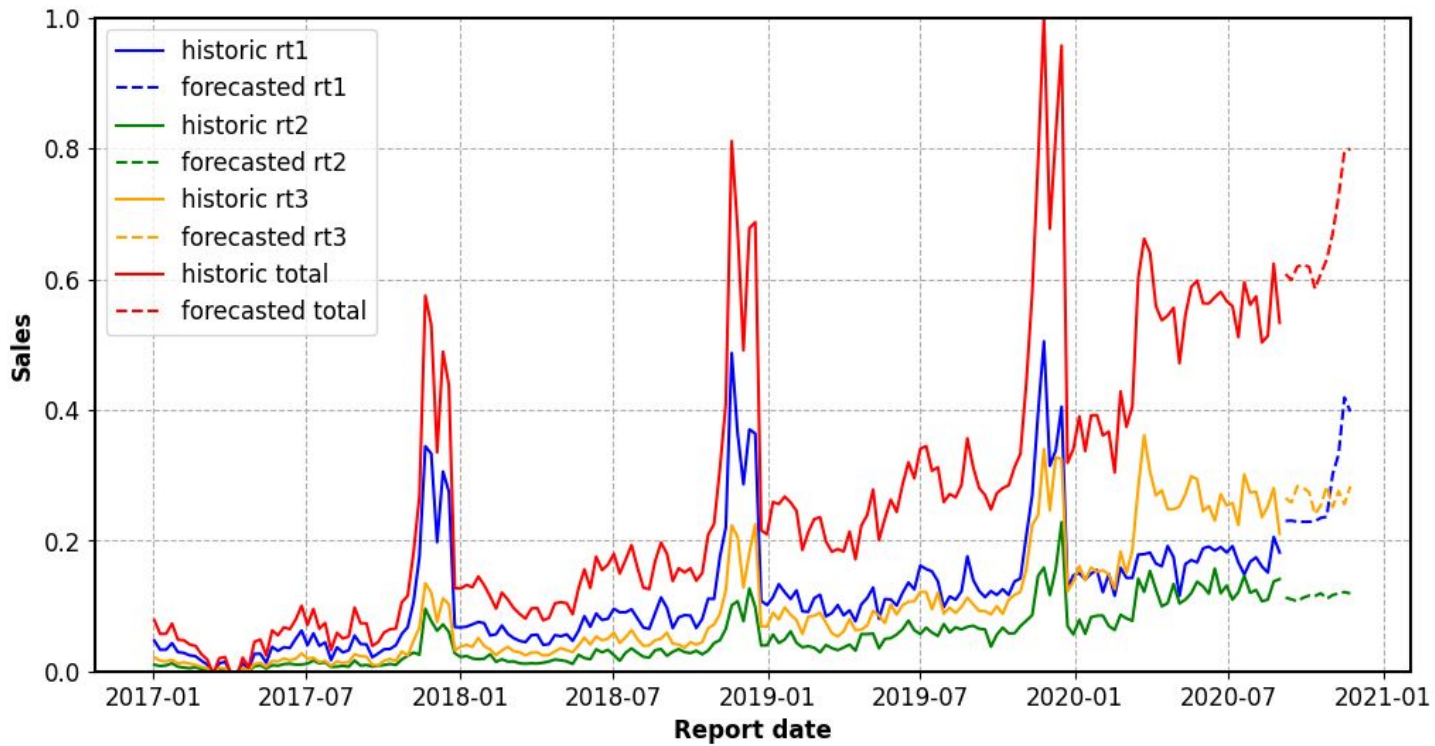
external dataset

> Dataset 1: Brent crude oil futures contracts

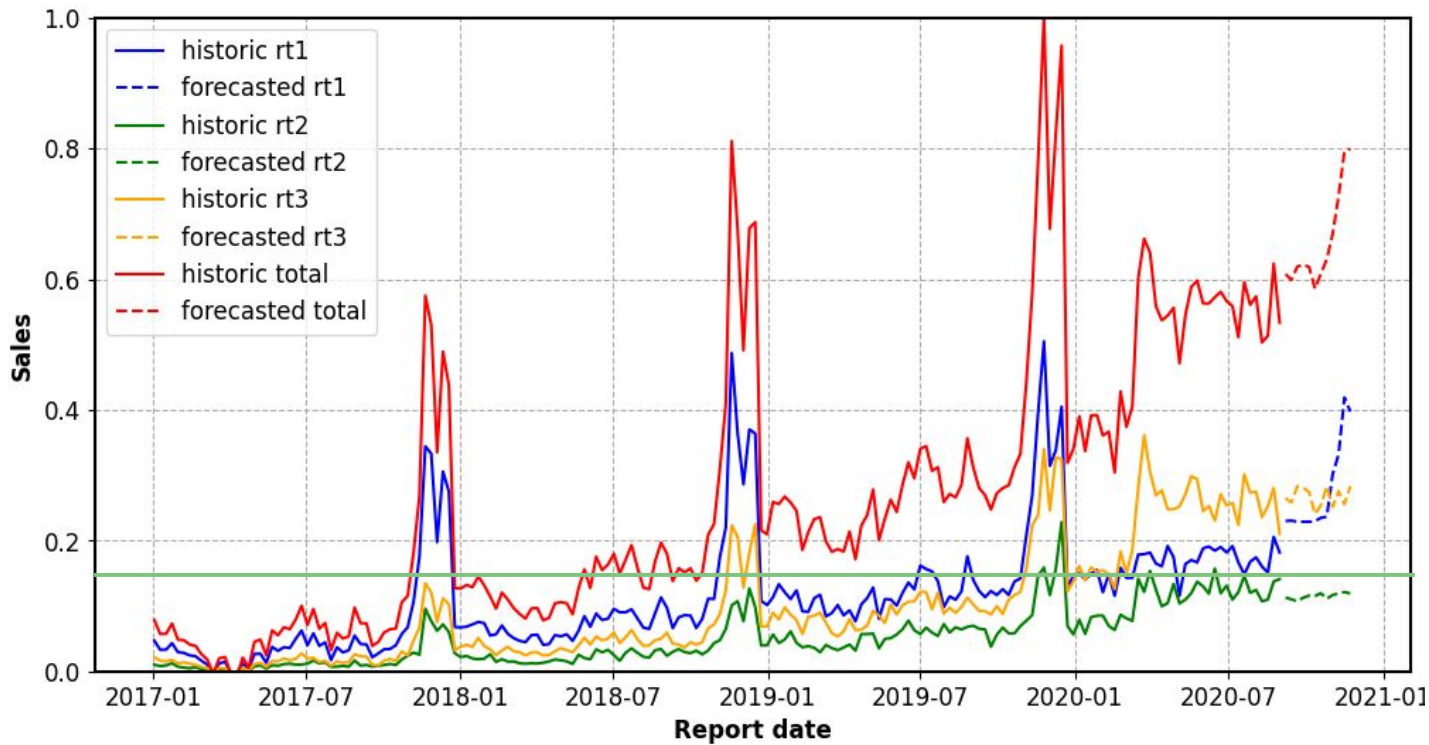
> Dataset 2: COVID-19: Stringency Index

The stringency index is a composite measure based on nine response indicators including school closures, workplace closures, and travel bans, rescaled to a value from 0 to 100 (100 = strictest).



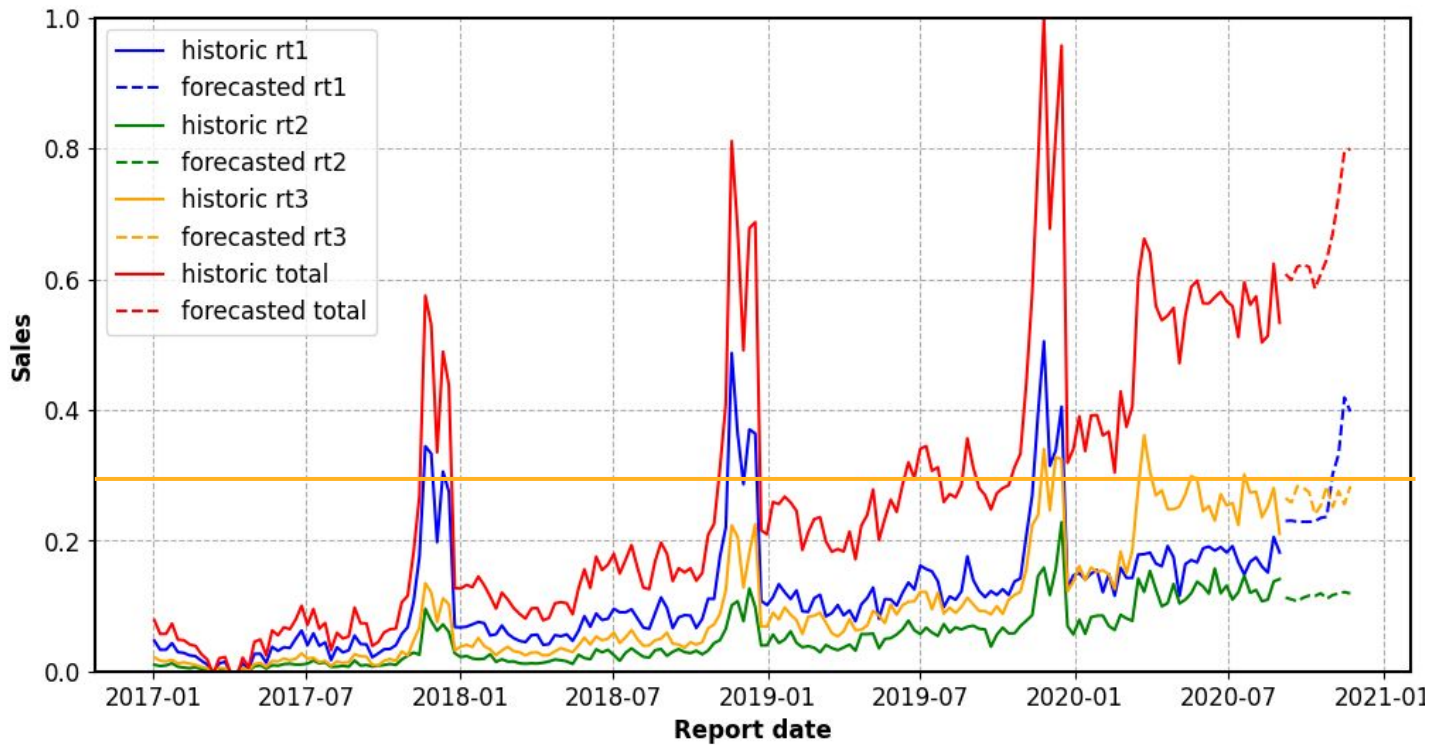


Forecast



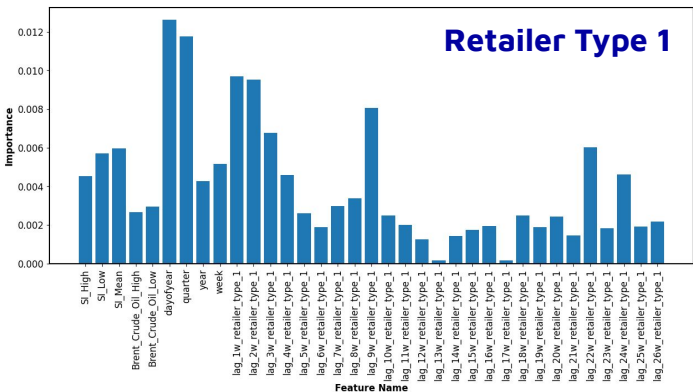
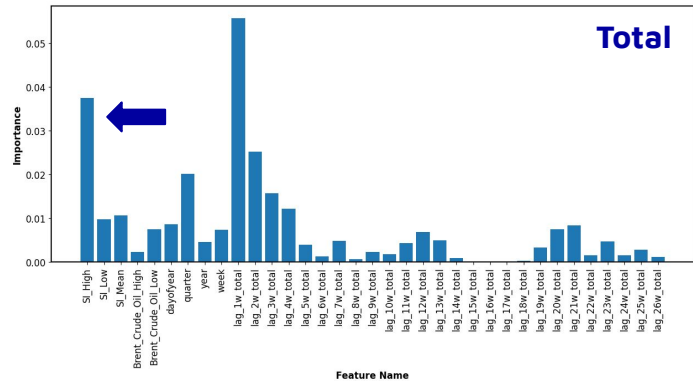
Attention: Sales of Retailer Type 2 are already quite high compared to its historical records.

Forecast



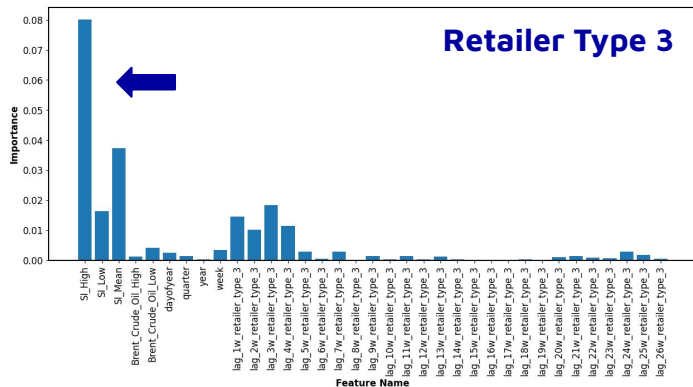
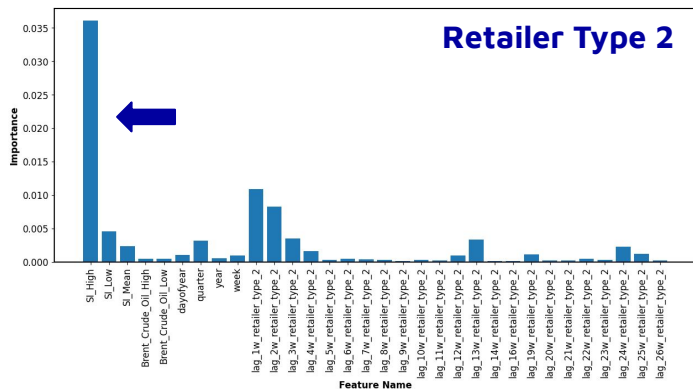
Attention: Sales of Retailer Type 3 are already quite high compared to its historical records.

Forecast



Learning from Machines

COVID-19 Stringency is influencing the sales, especially for retailer type 2 and retailer type 3



Questions?

Thanks for your attention.

Additional questions can go to:
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