

Palm Oil Prices



Agenda

1. Palm Oil Price Data

- Details
- Visualization of Prices from 2008 – 2022
 - Predicted vs Actual
- Yearly Trend of Prices
 - Possible Causes
- Factors Affecting Prices
 - Oilseeds
 - Brent Oil
 - Humidity
 - MPOB News Articles



1. Palm Oil Price Data



Palm Oil prices

- **Developed scrape to scrape data from MPOB Malaysia Website**
 - Link:
 - https://bepi.mpob.gov.my/admin2/price_local_daily_view_cpo_msia.php?more=Y&jenis=1Y&tahun=2022
 - Data is daily Palm Oil prices (working days) from **2008** to current year (**2022**)

Palm Oil prices

- Example:

Raw data

	Crude Palm Oil (Local Delivered) Minyak Sawit Mentah (Hantaran Tempatan)							
Date	January	February	March	April	May	June	July	August
01	NT	PH	7,786.50	6,251.00	PH	6,676.50	4,838.50	4,143.50
02	PH	PH	8,076.50	NT	PH	6,752.00	NT	3,946.50
03	5,214.00	NT	7,530.50	PH	PH	6,771.00	PH	4,011.50
04	5,245.50	5,744.00	6,843.50	6,357.50	PH	NT	4,698.00	3,939.00
05	5,331.00	NT	NT	6,457.00	7,469.50	PH	4,344.00	4,040.50
06	5,340.00	PH	PH	6,571.00	7,090.50	PH	3,934.00	NT
07	5,336.00	5,749.50	7,005.50	6,487.50	NT	6,753.50	4,088.50	PH
08	NT	5,515.00	7,005.00	6,533.50	PH	6,746.50	4,205.50	4,119.00
09	PH	5,642.50	7,410.00	NT	7,052.00	6,644.50	NT	4,175.50
10	5,347.00	5,751.00	7,546.00	PH	7,010.50	6,540.50	PH	4,166.50
11	5,266.00	5,799.50	7,440.50	6,626.50	7,078.00	NT	PH	4,245.50
12	5,278.00	NT	NT	6,619.50	6,939.00	PH	4,244.00	4,420.00
13	5,301.00	PH	PH	6,551.50	6,950.00	6,091.00	4,000.00	NT
14	5,294.00	5,837.00	6,927.50	6,639.00	NT	6,068.00	3,990.00	PH
15	NT	5,970.50	6,846.50	6,642.50	PH	5,914.50	3,631.50	4,253.00
16	PH	5,951.50	6,895.00	NT	PH	5,719.00	NT	4,240.00
17	5,297.00	5,964.00	6,737.00	PH	6,635.50	5,703.50	PH	4,217.00
18	PH	6,027.50	6,392.00	6,710.00	6,679.50	NT	3,810.00	4,158.00
19	5,409.00	NT	NT	6,633.50	6,635.50	PH	3,956.00	4,153.00
20	5,380.50	PH	PH	6,717.50	6,734.50	5,398.50	3,956.50	NT
21	5,421.50	6,158.00	6,382.00	6,773.50	NT	5,245.00	3,810.50	PH
22	NT	6,279.00	6,502.00	6,777.50	PH	5,046.00	3,820.50	4,210.50
23	PH	6,485.00	6,646.00	NT	6,715.00	4,770.50	NT	4,196.00
24	5,497.00	6,845.50	6,688.50	PH	6,894.50	4,765.50	PH	4,258.50
25	5,413.00	6,775.00	6,661.50	7,321.50	6,851.50	NT	3,782.50	4,236.00

After scraping and pre-processing

Date	Price	
3/1/2022	5214	
4/1/2022	5245.5	
5/1/2022	5331	
6/1/2022	5340	
7/1/2022	5336	
10/1/2022	5347	
11/1/2022	5266	
12/1/2022	5278	
13/1/2022	5301	
14/1/2022	5294	
17/1/2022	5297	
19/1/2022	5409	
20/1/2022	5380.5	
21/1/2022	5421.5	
24/1/2022	5497	
25/1/2022	5442	
26/1/2022	5497.5	
27/1/2022	5605.5	
28/1/2022	5788	

Palm Oil prices

- Pre-processing includes:
 - Discard non-working days data value (weekends, holidays, no trade)
 - Only include days with actual price value in final data

Date	January
01	NT
02	PH
03	5,214.00

NT – No Trade / Tiada Urusniaga

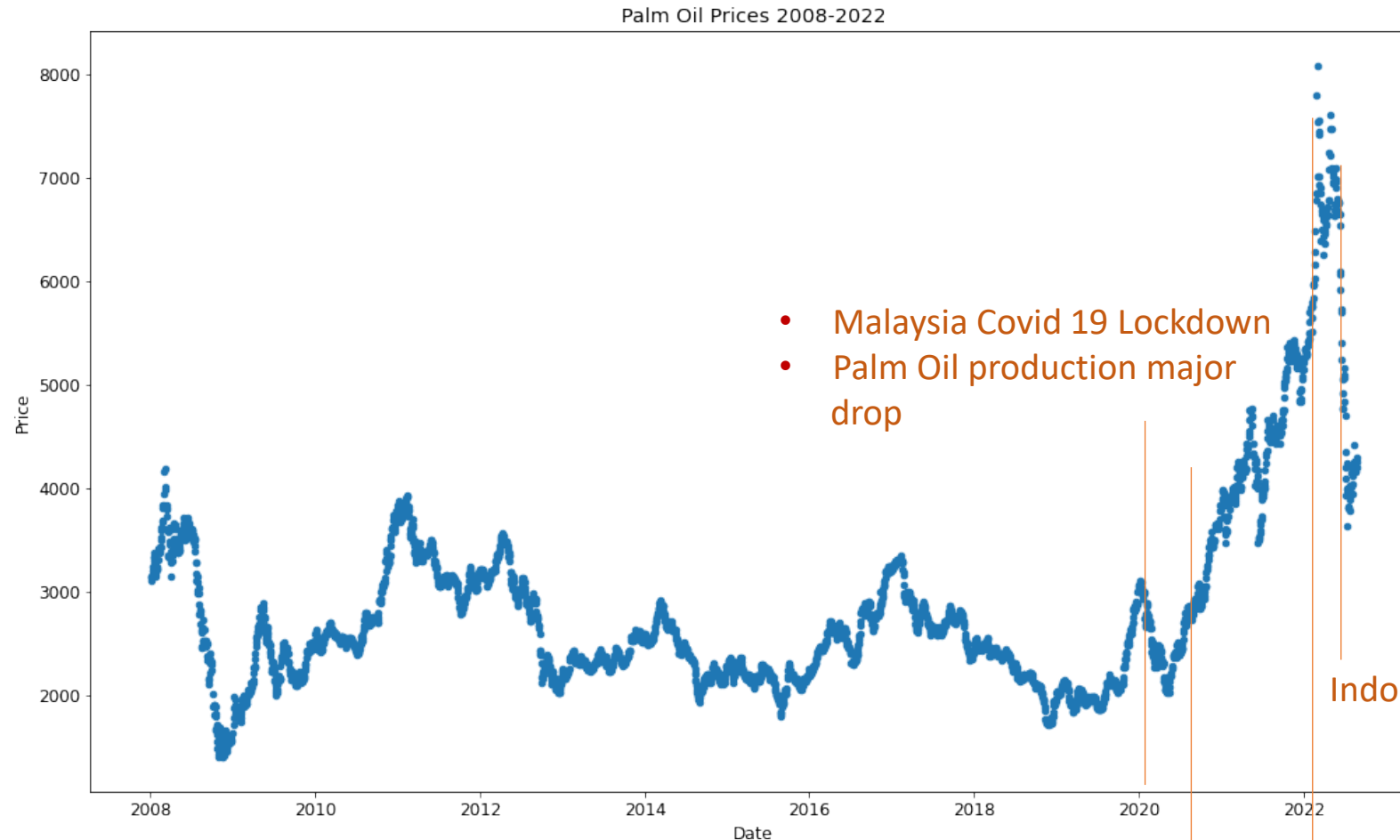
PH : Public Holiday / Cuti Am

- Add date value in datetime format

Visualization of Data

- Price from 2008-2022

- Palm Oil Prices currently in decreasing trend after constantly increasing since 2020



- Important timeline that may have possibly affected the recent price trend

- Articles Links:

- [Production drop due to lockdown](#)
- [Indonesia Export Ban](#)
- [Indonesia Export Ban Lifted](#)

La Nina season begins (bring higher Precipitation in Malaysia)

- Russia – Ukraine War
- Indonesia Palm Oil Export Ban

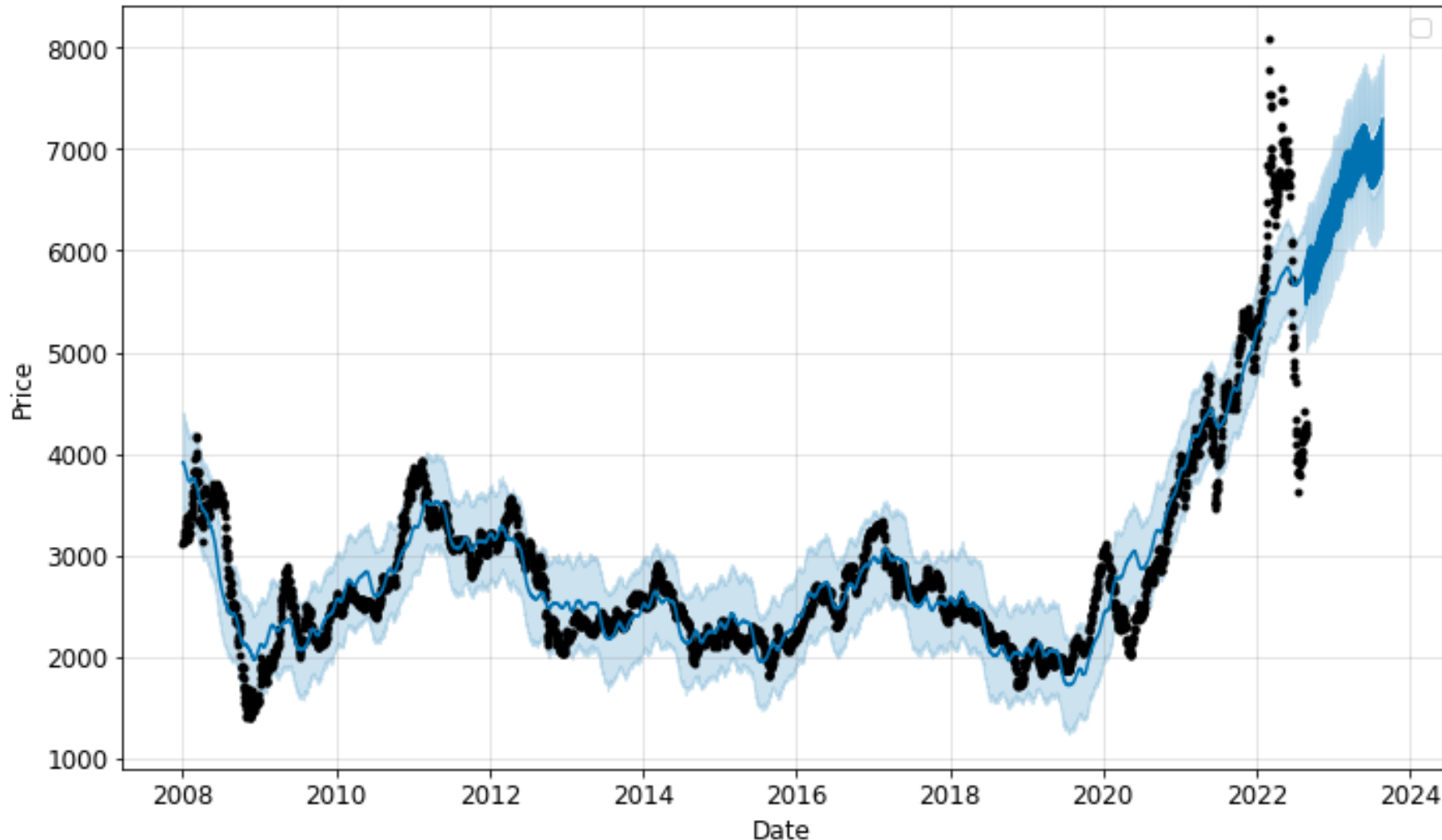
Visualization of Data

- Predicted Palm Oil Price

- Actual Value : Black Dot

- Predicted: Blue Line

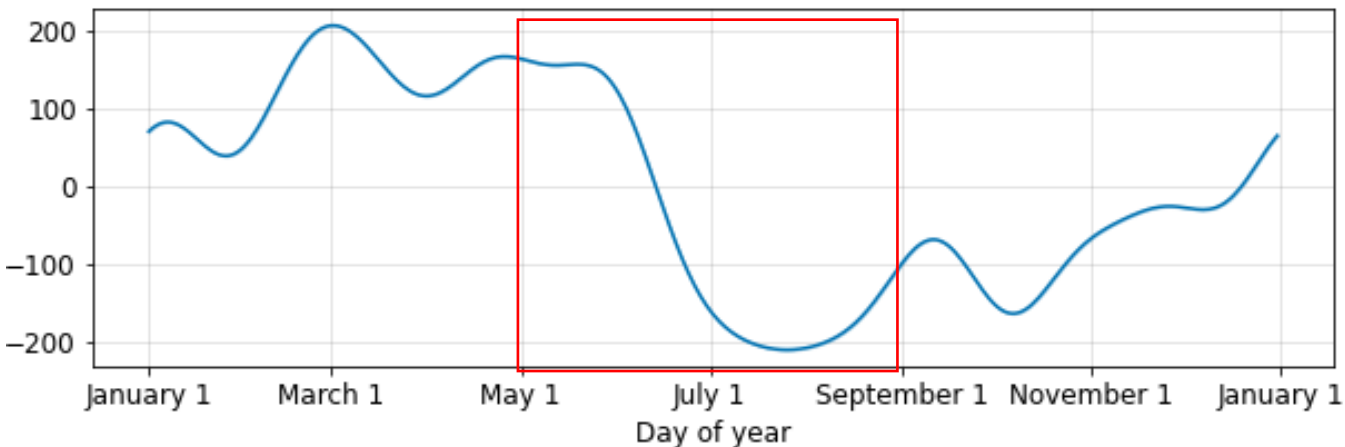
Palm Oil Prices 2008-2022



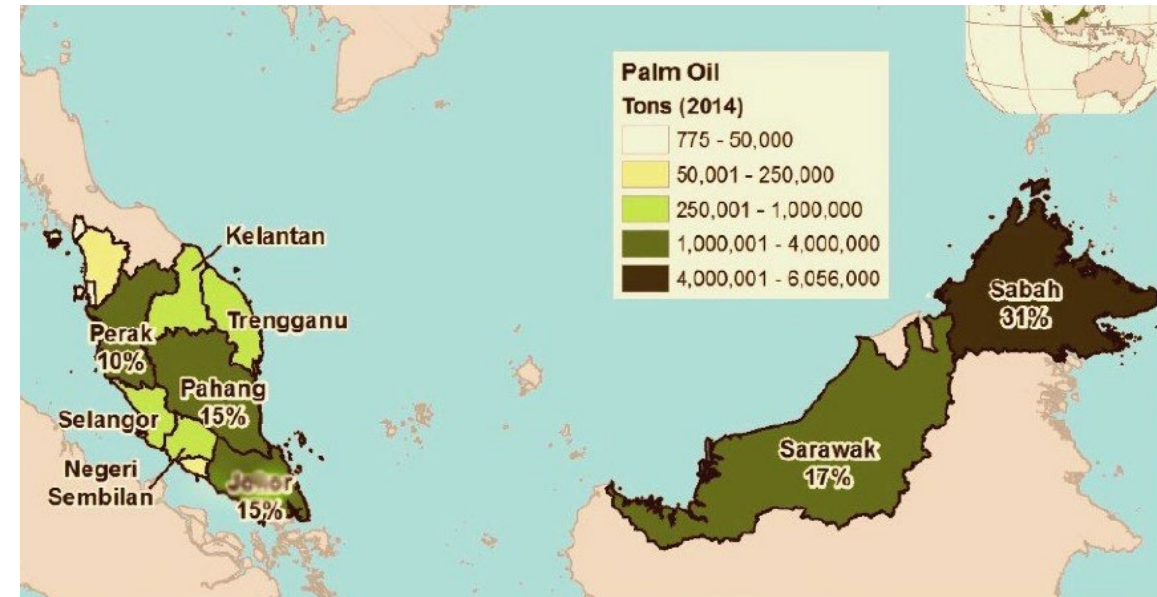
- Predicted trend is for price to keep increasing but major decrease in year 2022
- Training data: 2008-2022, Prediction: 2022-2023, Prediction period: 365 days
- Future improvements: take more recent historical data to predict for one week or day

Yearly Trend in Price and Possible Cause

- Southwest Monsoon period occur between May and September which is when the palm oil prices start to fall to its lowest of the year



- Price Peak: January - March
- Price Downfall: June - August

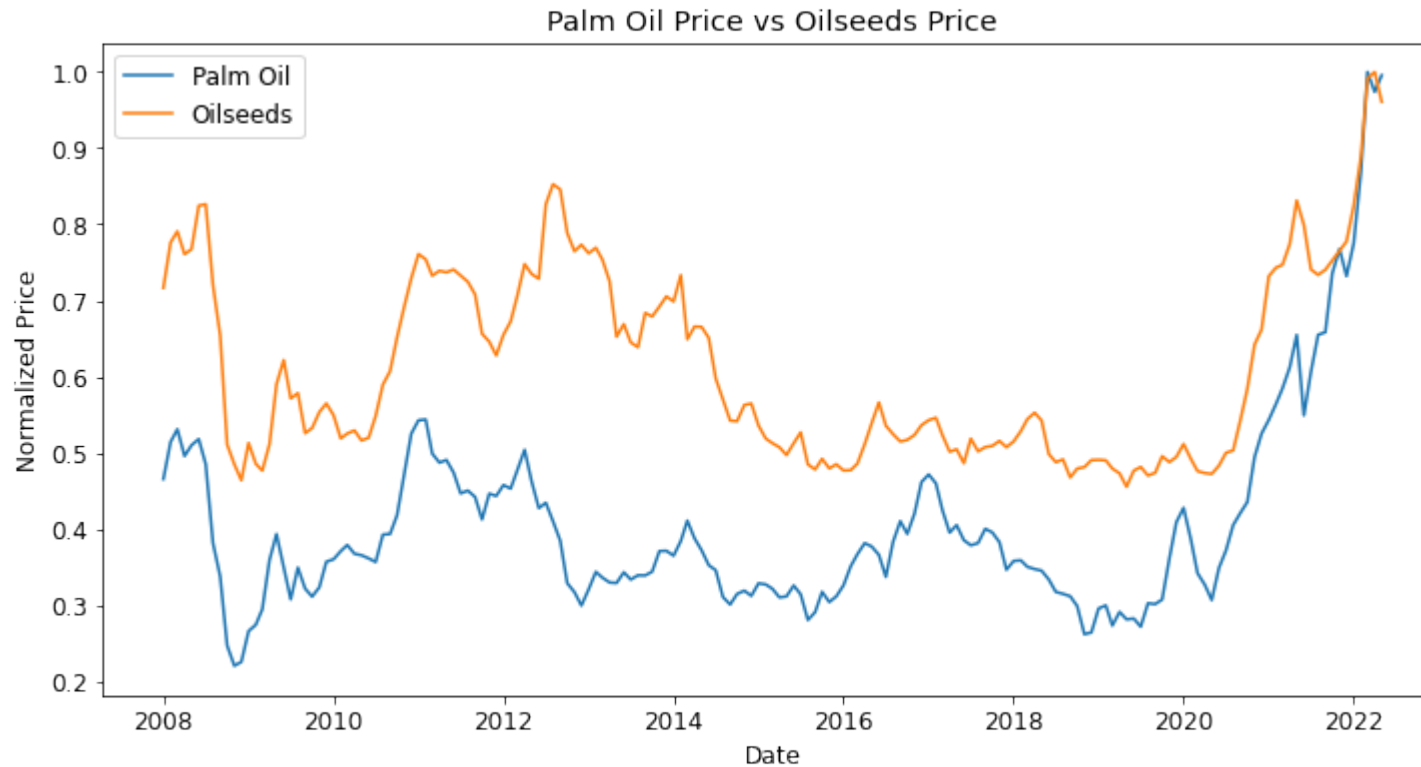


Malaysia Palm Oil Production Map from [New Straits Time](#)

- Southwest Monsoon commonly causes flooding in Sabah which consists of 31% of Palm Oil Production

Factors Affecting Prices

■ Oilseeds Prices

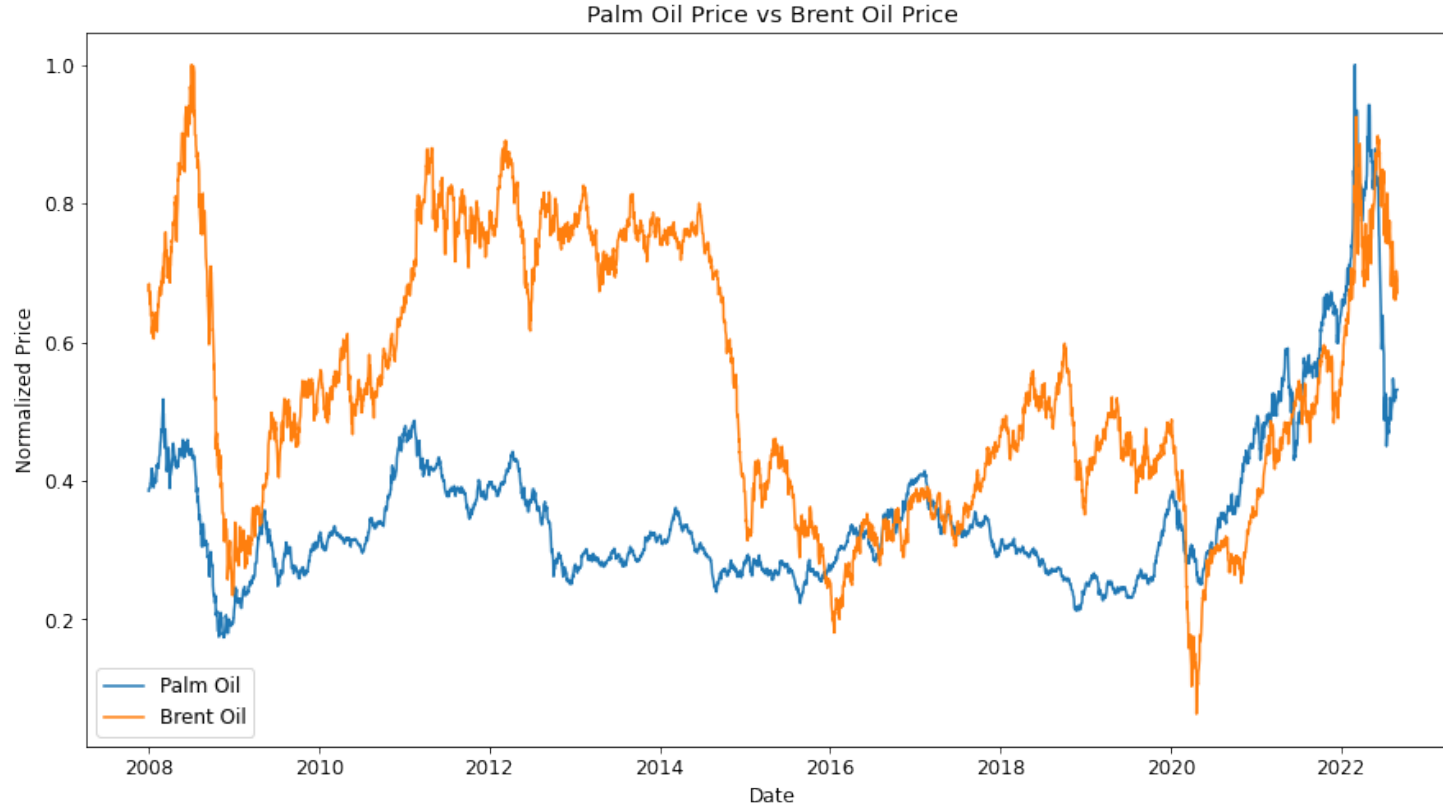


- Taken monthly [oilseeds price](#) from 2008 – 2022 and compared it with palm oil price
- Components of oilseeds from data : soybeans, rapeseed, sunflower seed
- Future improvements: consider exchange rate (USD/RM) as may affect result

- Oilseeds price throughout the years consistently follow a similar pattern with Palm Oil Price
- Oilseeds price has a correlation score of 0.74 with palm oil price which shows that both are positively correlated

Factors Affecting Prices

■ Brent Oil Prices



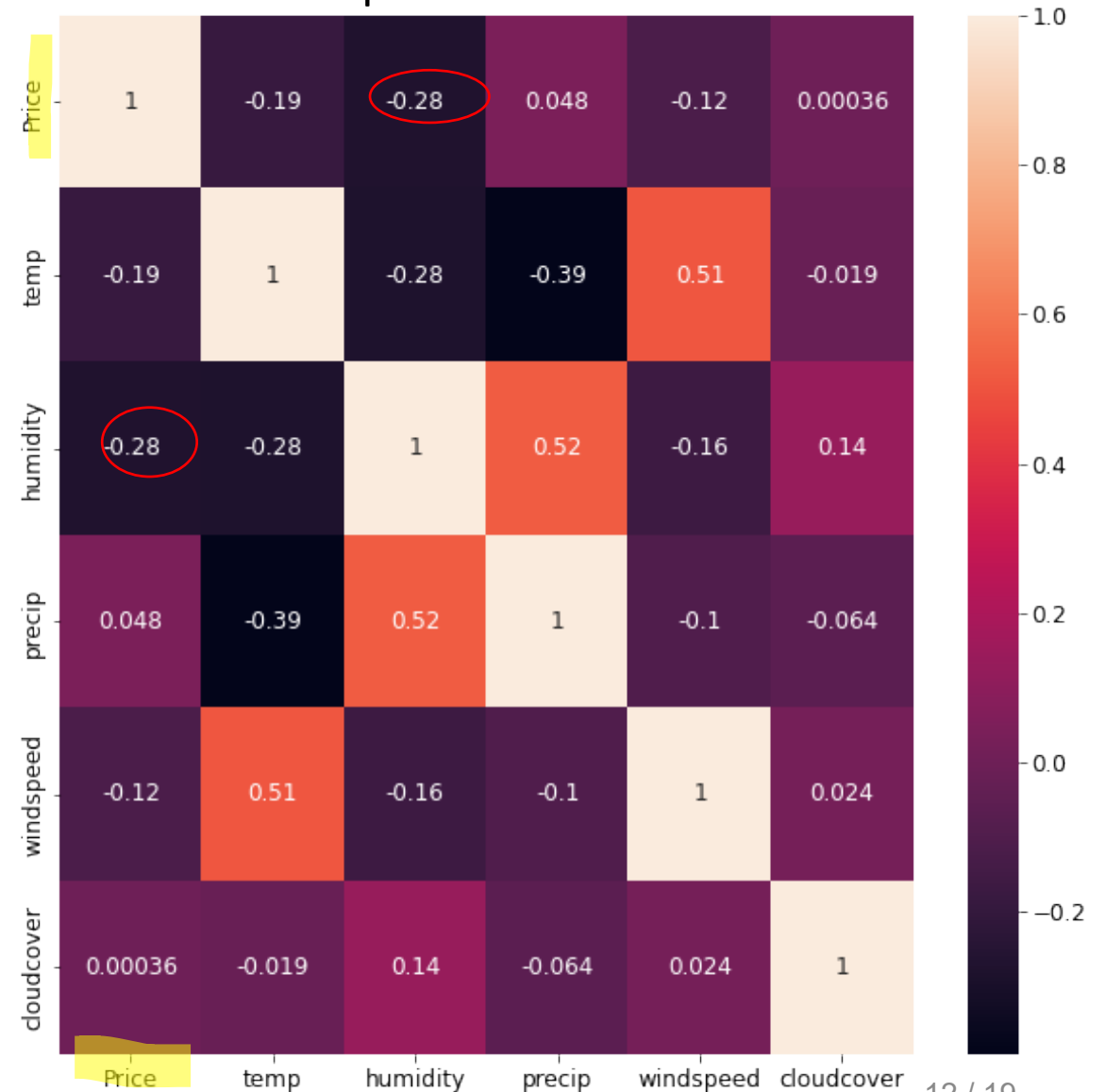
- Taken daily Europe [Brent Oil Prices](#) from 2008 – 2022 and compared it with palm oil price
- Reason for comparing brent oil:
 - Biodiesel which is made from palm oil is an alternative fuel from brent oil
- [source](#)

- Brent Oil price shows higher correlation with Palm Oil from year 2020 to now
- Brent Oil price has a correlation score of 0.33 with palm oil price which shows that both are positively correlated

Factors Affecting Prices

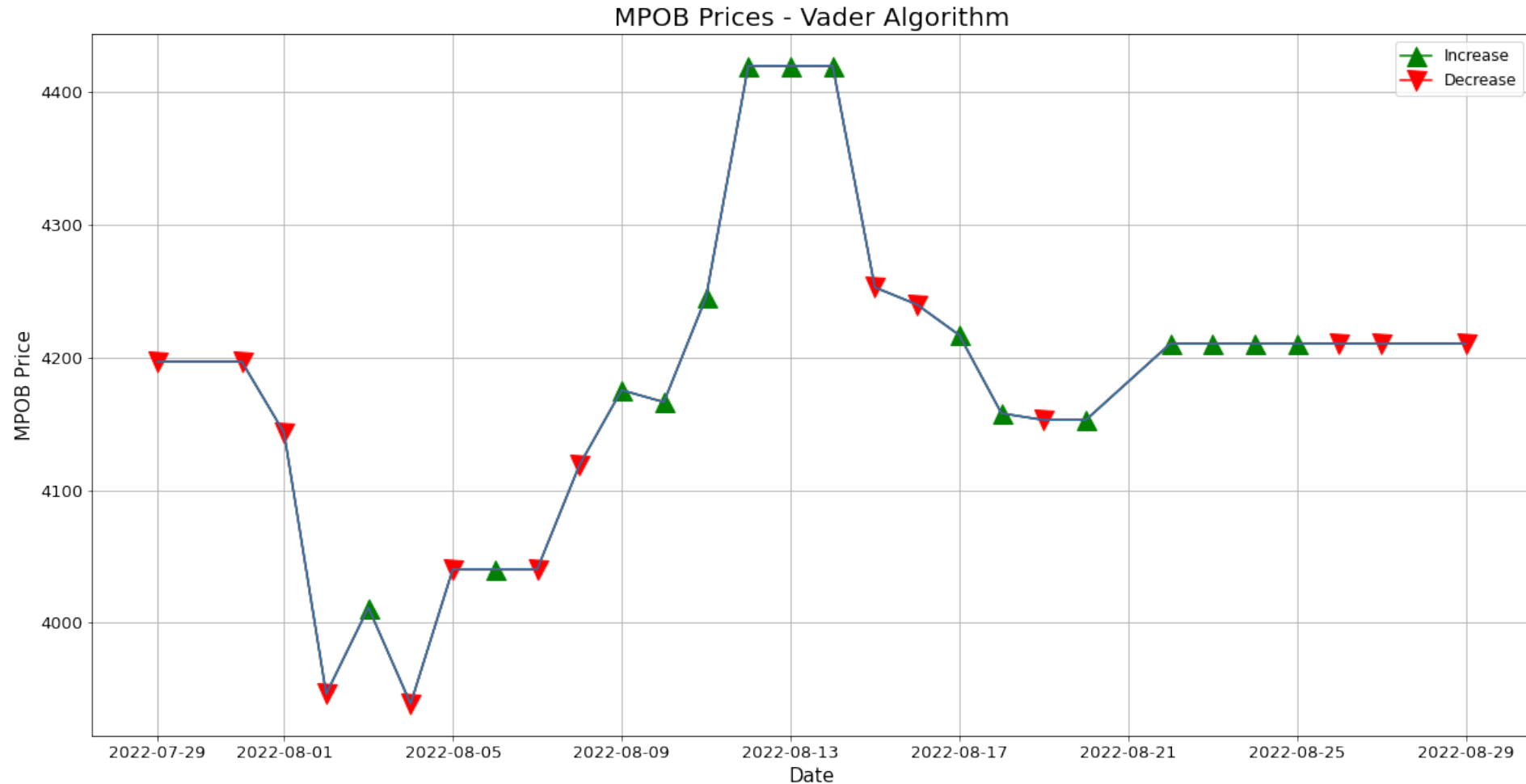
- Weather Factors
 - Temperature, Humidity, Precipitation, Windspeed, Cloud Cover
 - [Data](#) from 2020 – 2022
- Humidity has the most correlation with palm oil price
- Correlation score = -0.28 which shows that humidity and palm oil price is negatively correlated
- The other factors has little to no correlation with price.

Correlation Map



Factors Affecting Prices

Predicting whether tomorrow's MPOB price will fall or rise based on News Articles



- Palm oil related news is scraped from MPOB [website](#) for August 2022 (Total: 123 articles)
- Classified news into topics and calculate overall positive or negative sentiment from each article related to price

Steps for News Sentiment Analysis

- Develop scrape program

Raw data

Title Filter

Date News Title

- 21/09/2022 [Better than expected trade performance](#)
- 21/09/2022 [Expanding palm oil stockpile to dampen CPO prices](#)
- 21/09/2022 [Indonesia trimming palm oil stocks with discounts, India sales](#)
- 21/09/2022 [Malaysia's 1H palm product exports reach RM71.02b](#)
- 21/09/2022 [Use oil palm biomass as feedstock for "green" jet fuel: Transport Minister](#)
- 21/09/2022 [Stronger exports, soybean oil performance lift CPO futures at the close on Sept 20](#)
- 21/09/2022 [Palm products export for January-June reaches RM71.02b](#)
- 21/09/2022 [Palm oil may fall into 3,481-3,583 ringgit range](#)
- 21/09/2022 [Tariff commission for palm oil price at Tk133 per litre, sugar Tk84 per kg](#)
- 21/09/2022 [MIDF Research raises Malaysia's 2022 exports, imports growth projection](#)

previous **1** 2 3 4 5 6 7 8 9 ... 3373 3374 next

Date	21/09/2022
News Provider	Kamar Nor Aini Bt Kamarul Zaman
News Source	The Edge Markets
Headlines	Expanding palm oil stockpile to dampen CPO prices

20/09/2022 (The Edge Markets) - THE Malaysian palm oil inventory, which is likely to have surpassed two million tonnes for the first time in two years, is expected to add further downward pressure on crude palm oil (CPO) prices that have fallen from their peak in April this year.

As production picks up in the second half and stiffer competition from rival Indonesia curbs export demand, palm oil inventories in Malaysia are expected to climb at least 15.8% in August from a month earlier to 2.05 million tonnes, according to the median of 10 estimates in a Bloomberg survey of analysts, traders and plantation executives.

"Expanding stockpiles could further dampen palm oil prices, which have tumbled more than 40% since May, as the world's top producer Indonesia implemented various policies to boost its own shipments, including an export levy waiver that has since been extended to end-October," says analyst Avtar Sandu of Singapore-based Philip Nova Pte Ltd, which is part of the PhilipCapital Group.

The CPO third-month contract has fallen 42% from RM6,326 in late April to RM3,633 at midday last Friday, owing to the impact from a reversal of Indonesia's export ban on palm oil as well as global recession fears casting a pall over commodity prices.

The Malaysian Palm Oil Board's (MPOB) August production data, which will be released on Monday (Sept 12), will be eyed as Malaysia's palm oil production is seen rising 10% from the previous month, with most gains coming from Sabah, followed by productions in Peninsular Malaysia.

In July, Malaysia's palm oil inventory rose to an eight-month high of 1.77 million tonnes as palm oil imports jumped.

David Ng, senior proprietary trader at derivatives trading firm Iceberg X Sdn Bhd, forecasts CPO prices to settle at RM3,500 this year.

MPOB earlier forecast CPO prices to average at RM5,300 in the second half of 2022, owing to expectations of higher global vegetable oil supply, higher CPO production, especially in the third quarter, as well as lower palm oil exports.

"The market for the next few weeks has been trading below the two million level. Over the next couple of months, the stock levels have been higher. If the MPOB announcement confirms the

After scrape

Date	Article
29/08/2022	<p>29/08/2022 (English News China), Jakarta – Indonesia has extended its zero-levy policy for palm oil exports until October 31, the Coordinating Ministry for Economic Affairs said on Monday.</p> <p>"The extension of the export levy tariff of 0 U.S. dollar will maintain the current momentum where the prices of crude palm oil and domestic cooking oil have stabilized, and the price of fresh fruit bunches has increased so that farmers could enjoy the benefits," said Coordinating Minister for Economic Affairs Airlangga Hartarto.</p> <p>Indonesian palm oil producers have struggled with high stockpiles after the country imposed a three-week export ban from April 28 to May 23 to reduce domestic cooking oil prices. The temporary policy of cutting the palm oil export levy to zero from around 200 U.S. dollars per ton was introduced by the world's largest palm oil producer in July, to boost exports and reduce oversupply in the domestic market. - Xinhua</p> <p>https://english.news.cn/20220829/c616da04ade2467aac95bb43eb038b56/c.html</p>
29/8/2022	<p>29/08/2022 (The Edge Markets), Jakarta - Palm oil advanced after Indonesia, the world's biggest grower, raised its export tax for the first half of September and announced an increased allocation for local biodiesel use this year.</p> <p>Futures for November delivery rose as much as 2.3% to RM4,266 (US\$951) a tonne before closing at RM4,176. Soybean oil, palm's closest substitute, retreated, while Brent crude climbed for a second day on supply concerns.</p> <p>Indonesia raised the export tax to US\$124 a tonne, up from US\$74 for the last two weeks of August, said Musdhalifah Machmud, deputy for food and agriculture at the Coordinating Ministry for Economic Affairs. It increased the crude palm oil reference price for Sept 1 to 15 to US\$930.02 a tonne.</p> <p>The higher export tax is supportive for palm, as it gives scope for Malaysian prices to rise as well, said Sathia Varqa, owner of Palm Oil Analytics in Singapore.</p> <p>However, the gains will likely be short-lived as there's a lack of bullish drivers, he added.</p> <p>Indonesia also announced a target to lift palm-based biodiesel use to 11.03 million kiloliters, from 10.15 million kiloliters previously. The government said the increase is needed to maintain its B30 mandate, as diesel consumption will rise in the fourth quarter as the economy recovers.</p> <p>The move by Indonesia aided palm prices in Kuala Lumpur, said Gnanasekar Thiagarajan, head of trading and hedging strategies at Kaleesuware Intercontinental. Investors are also waiting for Malaysian August export data due this week, with shipments likely to climb 5% to 10% or even more, he said.</p> <p>https://www.theedgemarkets.com/article/palm-oil-rises-after-indonesia-raises-export-tax-biodiesel-use</p>
29/8/2022	

Steps for News Sentiment Analysis

- Pre-processing for sentiment analysis
 - Classify articles to topics (Price, Sustainability, Audits, Company Reports, Health)
 - Example

2022-08-17 00:00:00	<p>17/08/2022 (The Star Online) - The Malaysian Palm Oil Certification Council (MPOCC) has never endorsed any consultants, companies and representatives to provide consultation services for palm oil dealers, said the Ministry of Plantation Industries and Commodities (MPIC). In a statement, MPIC said all Accredited Certification Bodies (ACB) are going through the accreditation process with the Department of Standards Malaysia. It noted that the list of ACB for MSPOMS2530:2022 could be found on MPOCC's website. "This is necessary to ensure that certification bodies that conduct audits under the Malaysian Sustainable Palm Oil (MSPO) certification scheme are competent to carry out credible and consistent audits," it said in a statement. MPOCC reiterated that palm oil processing facilities and dealers could voluntarily apply for MSPO certification under the MS2530:2022 Part 4.2 and 4.3 until the Malaysian Palm Oil Board (MPOB) announces the mandatory implementation. However, the MSPO certification has not been made mandatory for palm oil processing facilities and dealers. The MSPO standard MS2530:2022 is the new version launched on March 22, 2022, with the new parts of MSPO standard which are Part 4.2 for palm oil processing facilities and Part 4.3 for dealers. Previously, the standard's version was known as MS2530:2013. - Bernama</p> <p>https://www.thestar.com.my/business/business-news/2022/08/17/mpocc-has-never-endorsed-other-parties-to-provide-consultation-services-for-palm-oil-dealers---mpic</p>	<pre>{ 'Audits': 0.3374966143998012, 'Company Reports': 0.18607424317800178, 'Health': 0.17958383758272276, 'Price': 0.16297343173740925, 'Sustainability': 0.13387187310206514 }</pre>
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- This article is related to Audits therefore won't be included
 - Only include articles that have a score higher than 0.22 in Price topic
- Number of news before classification: 123
- Number of news related to price: 107

Steps for News Sentiment Analysis

- Pre-processing for sentiment analysis
 - To increase vader usefulness:
 - added keywords to enhance dictionary to determine price will increase or decrease

```
new_words = {  
    'lower': -2.5,  
    'reduce': -2.5,  
    'down': -2.5,  
    'lack': -2.5,  
    'fell': -2.5,  
    'fall': -2.5,  
    'cheaper': -2.5,  
    'sustainable': 0,  
    'slump': -2.5,  
    'slumped': -2.5,  
    'falling': -2.5,  
    'decline': -2.5,  
    'declining': -2.5,  
    'slashed': -2.5,  
    'dropped': -2.5,  
    'easier': 0.0,  
    'less': -2.0,  
    'slow': -2.0,  
    'increase': 3.0,  
    'rise': 3.0,  
    'ceiling': -2.0,  
}  
vader.lexicon.update(new_words)
```

- Example
Sample Article

02/08/2022 (Hellenic Shipping News) - Malaysian palm oil futures slumped more than 5% on Monday, snapping a four-session rally as as larger rival Indonesia relaxed its quota for export shipments. The benchmark palm oil contract FCPOc3 for October delivery on the Bursa Malaysia Derivatives Exchange slid 216 ringgit, or 5.04%, to 4,073 ringgit (\$915.08) a tonne. The contract surged 8.4% last week to a more than three- week high. Top producer Indonesia will retain its domestic sales rule for palm oil to keep local cooking oil prices affordable, a senior official told Reuters. But the government from Monday will allow exporters to ship nine times the amount sold locally under the rule, up from seven times previously, Septian Hario Seto, a deputy coordinating minister for maritime and investment affairs, said in an interview. Palm oil is also weighed down by rumours that Jakarta will lower palm oil reference price for August, said Anilkumar Bagani, research head of Mumbai-based vegetable oils broker Sunvin Group. Exports of Malaysian palm oil products for July rose between 0.8% and 4% from the same week June, according to cargo surveyors' data. Dalian's most-active soyoil contract DBYcv1 rose 0.04%, while its palm oil contract DCPcv1 eased 0.5%. Soyoil prices on the Chicago Board of Trade BOcv1 were down 2%. Palm oil is affected by price movements in related oils as they compete for a share in the global vegetable oils market. Oil prices dropped as weak manufacturing data from China and Japan for July weighed on the outlook for demand, making palm a less attractive option for biodiesel feedstock. O/R Source: Reuters (Reporting by Mei Mei Chu; Editing by Shounak Dasgupta, Rashmi Aich, and Louise Heavens) <https://www.hellenicshippingnews.com/veg-oils-palm-oil-ends-5-lower-as-indonesia-ease-domestic-sales-rule/>

Sentiment Score

-0.9473

1 : most positive

-1: most negative

Steps for News Sentiment Analysis

- Pre-processing for sentiment analysis
 - Calculated average sentiment score of each day and use that score to predict whether tomorrow's price will fall or rise

Date	Final_Score
2022-07-29	-0.9042
2022-07-31	0.2160
2022-08-01	0.0384
2022-08-02	-0.9906
2022-08-03	0.9894
2022-08-04	0.1331

If score > 0 then increase

If score < 0 then decrease

Limitations

- There is some correlation between news and next day price, but it is not reliable
 - Some news article reporting on past days price affecting the prediction for future prices

THANK YOU

<https://www.fusionexgroup.com>

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