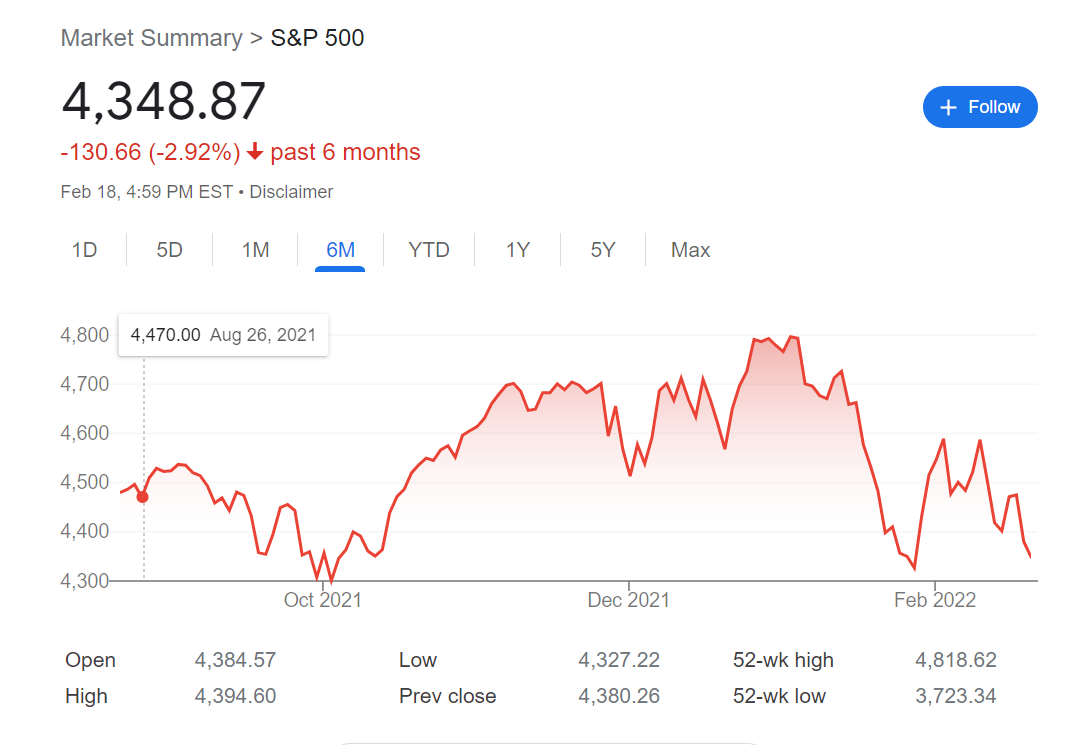
**~~1. How does the price of crude oil affect the stock price and how can we use it to predict the stock price?~~**

Crude Oil is one of the main components of petroleum, and therefore a rise in the price of crude oil will be reflected in market sectors that rely heavily on it. Examples include the energy, transportation, shipping sectors.

Brent & WTI are two benchmarks that give a rough idea of oil prices. It has to do with supply and demand. Shortages in energy substitutes such as natural gas increases demand for oil, thus raising its price. Politics also play a role such as when OPEC regulated the supply of oil， causing a surge in the oil price.

A major fraction of the S&P Energy Sector is XOM and CVX. Higher oil price tends to lead to better performance of this sector as it generates more revenue for fossil fuel companies and provides more opportunities for renewable energy companies. Transportation/Delievry companies are greatly affected by oil price as a high oil price will eat in their profits.





**Correlation doesn’t translate to causation.**

In conclusion, the price of crude oil is not a good factor to predict the stock price of companies. Usages of the price of crude oil can be only applied to looking at the macro side of the markets. Not enough statistical significance.

[**Fed Res. Bank at Cleveland**](https://www.clevelandfed.org/newsroom-and-events/publications/economic-trends/economic-trends-archives/2008-economic-trends/et-20080912-do-oil-prices-directly-affect-the-stock-market.aspx)

[The Impact of Oil Price Shocks on the U.S. Stock Market](https://www.jstor.org/stable/pdf/25621509.pdf?refreqid=excelsior%3A9d005b192b6a161c9abe49c471257c3f&ab_segments=&origin=)

[Oil doesn't drive stock prices](https://www.investopedia.com/ask/answers/030415/how-does-price-oil-affect-stock-market.asp)

2. What aspects of the supply chain can we implement in a model to predict the stock price?

[Share price time series forecasting for effective supply chain information exchange](https://www.researchgate.net/publication/264837175_Share_price_time_series_forecasting_for_effective_supply_chain_information_exchange)

Support Vector Machine presents the best performance among several other prediction models.

[Stock Price Movement Cross-Predictability in Supply Chain Networks](https://deliverypdf.ssrn.com/delivery.php?ID=818078115066107104007065122116118122127040038027075004027087007009125024118092116109050006019042105058018091097092073116005023117037004023036114120073117106084085065025053041112089122003080113086094009001086009071119027123008022104005007082108084016027&EXT=pdf&INDEX=TRUE)

1. First, build the supply chain network of firms in S&P500 and utilize this network to predict a firm’s stock movements by leveraging the performance of its network neighbors.

2. Factors to consider when identifying network neighbors include business partners, their network community, and their role in the supply chain network.

3. Performance of a focal firm is associated not only with its business partners but also with similar firms located farther away in the network.

4. We then analyze the contribution of upstream suppliers and downstream customers of a firm to the prediction of its stock price movement.

5. Better risk management as the model proactively predicts risks in the supply chain network rather than simply reacting to them.

[Co-search Attention and Stock Return Predictability in Supply-Chains](https://krannert.purdue.edu/academics/mis/workshop/Cross-Prediction%20Paper%20Ashish%20Agarwal.pdf)