

Oil Price Prediction

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2019

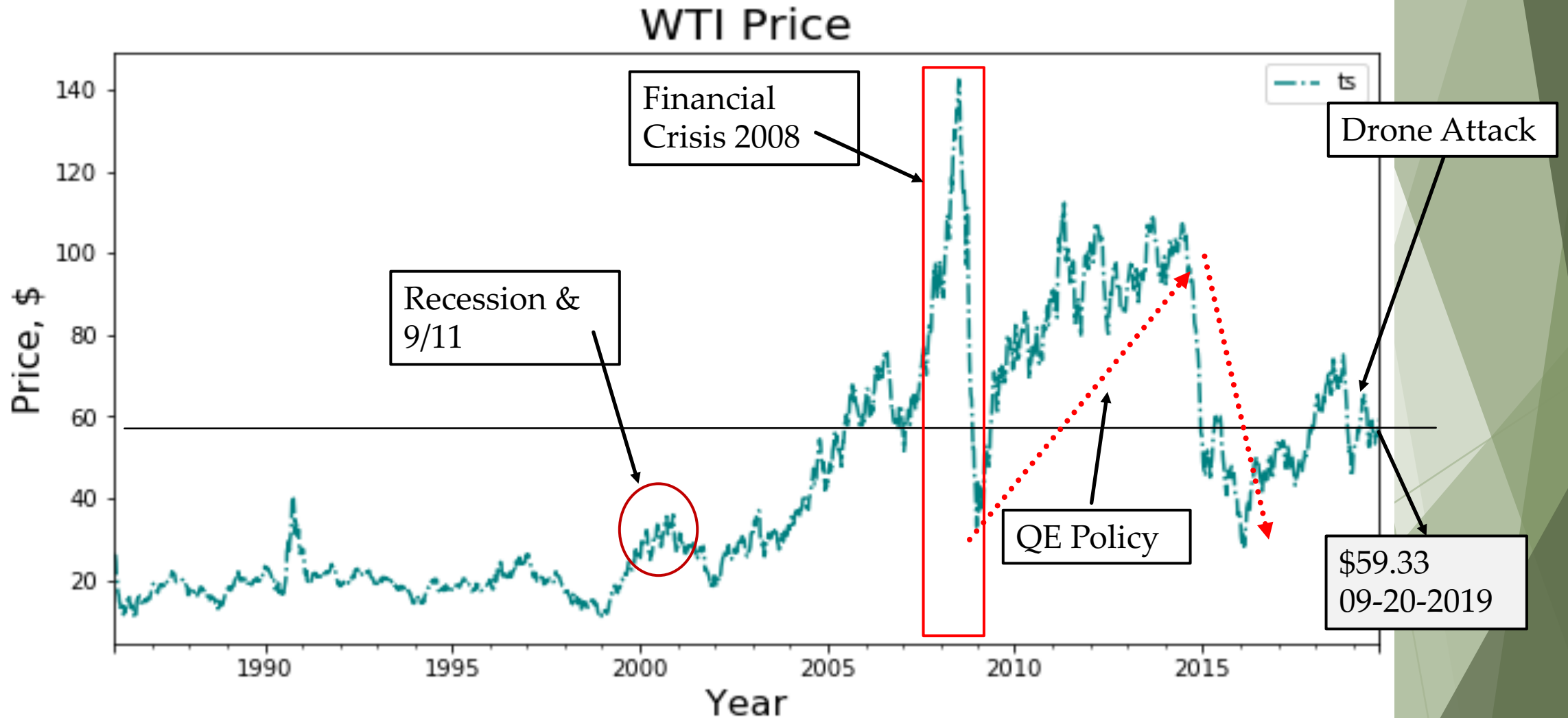
Introduction

- ▶ Client: Oil & Gas Investor
- ▶ Dataset: Weekly WTI Crude Oil Price, 1986-2019
 - ▶ WTI – West Texas Intermediate – oil price benchmark
 - ▶ Source: <https://fred.stlouisfed.org/series/WCOILWTICO>
 - ▶ Size: 2 features, 1754 observations
- ▶ Goal:
 - ▶ Predict the WTI crude oil price for the next 5 years
 - ▶ Method: Time Series Analysis

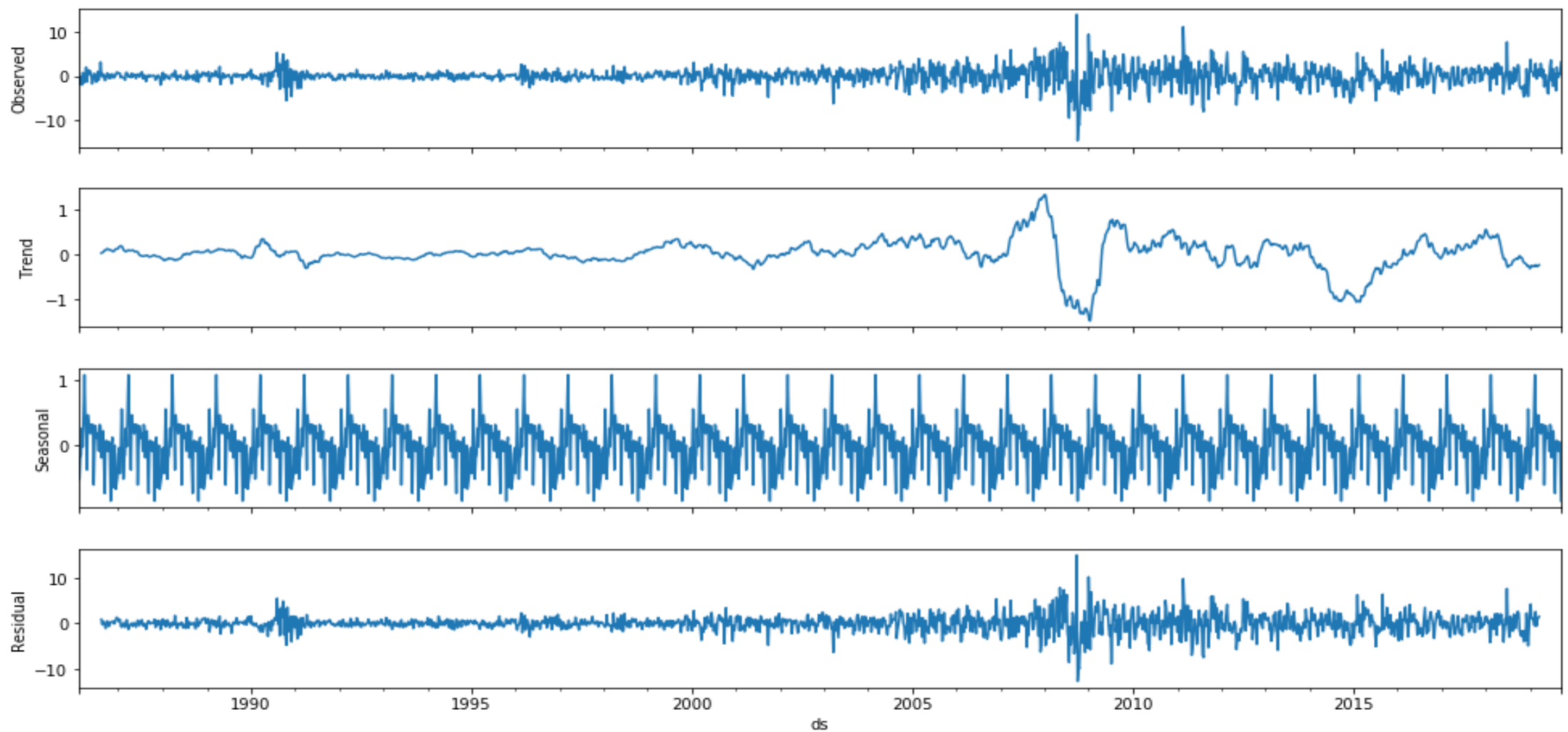
Time Series Analysis

- ▶ Time Series (TS) is a set observation taken at specified times at equal intervals
- ▶ It's time dependent. Assumption that observations are independent does not hold.
- ▶ Along with increasing/decreasing trend, most of TS data have some form of seasonality
- ▶ Limitations:
 - ▶ Very sensitive to recent past events
 - ▶ Can not predict or take into account irregular events (random adversities)

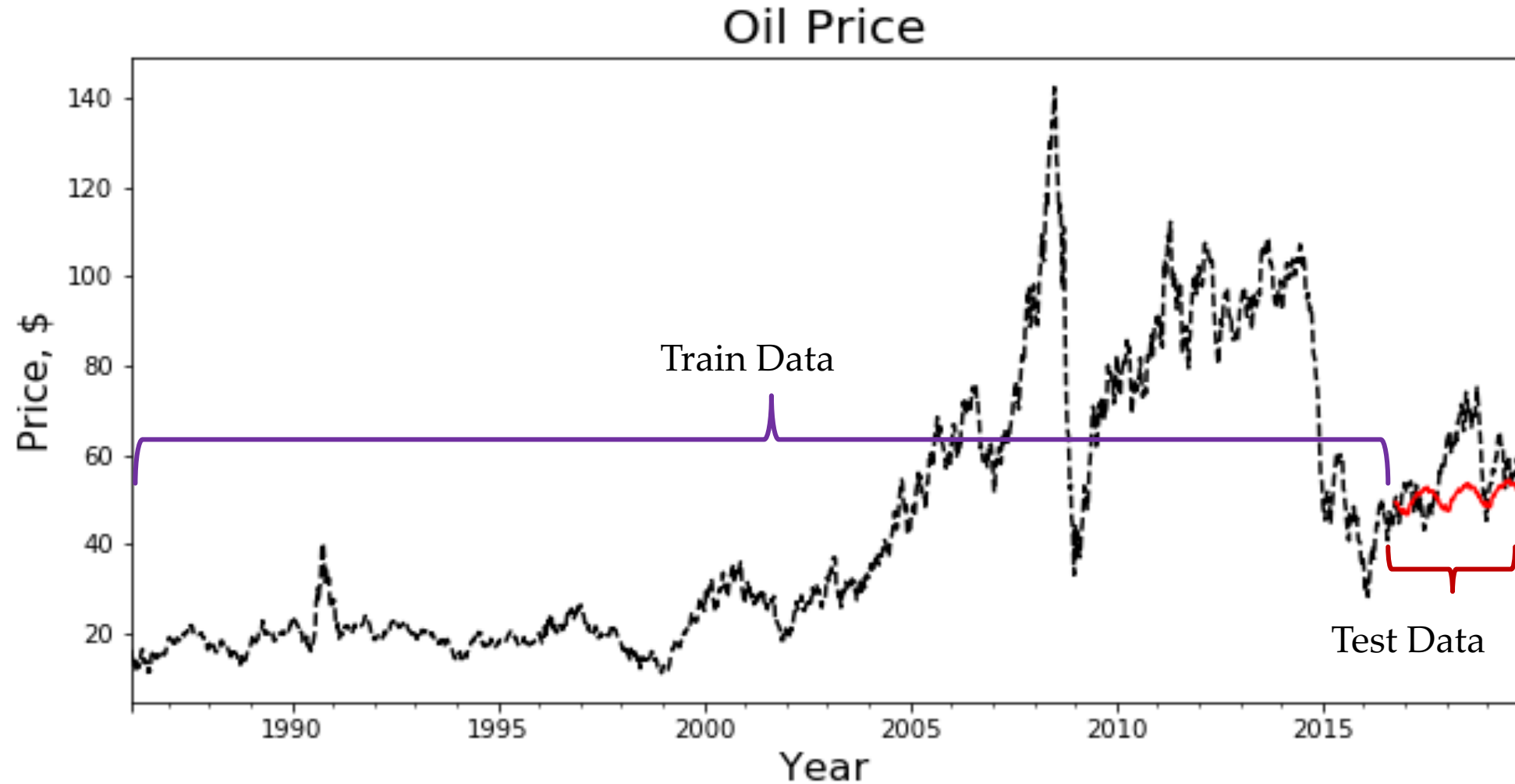
Initial Look of the Data



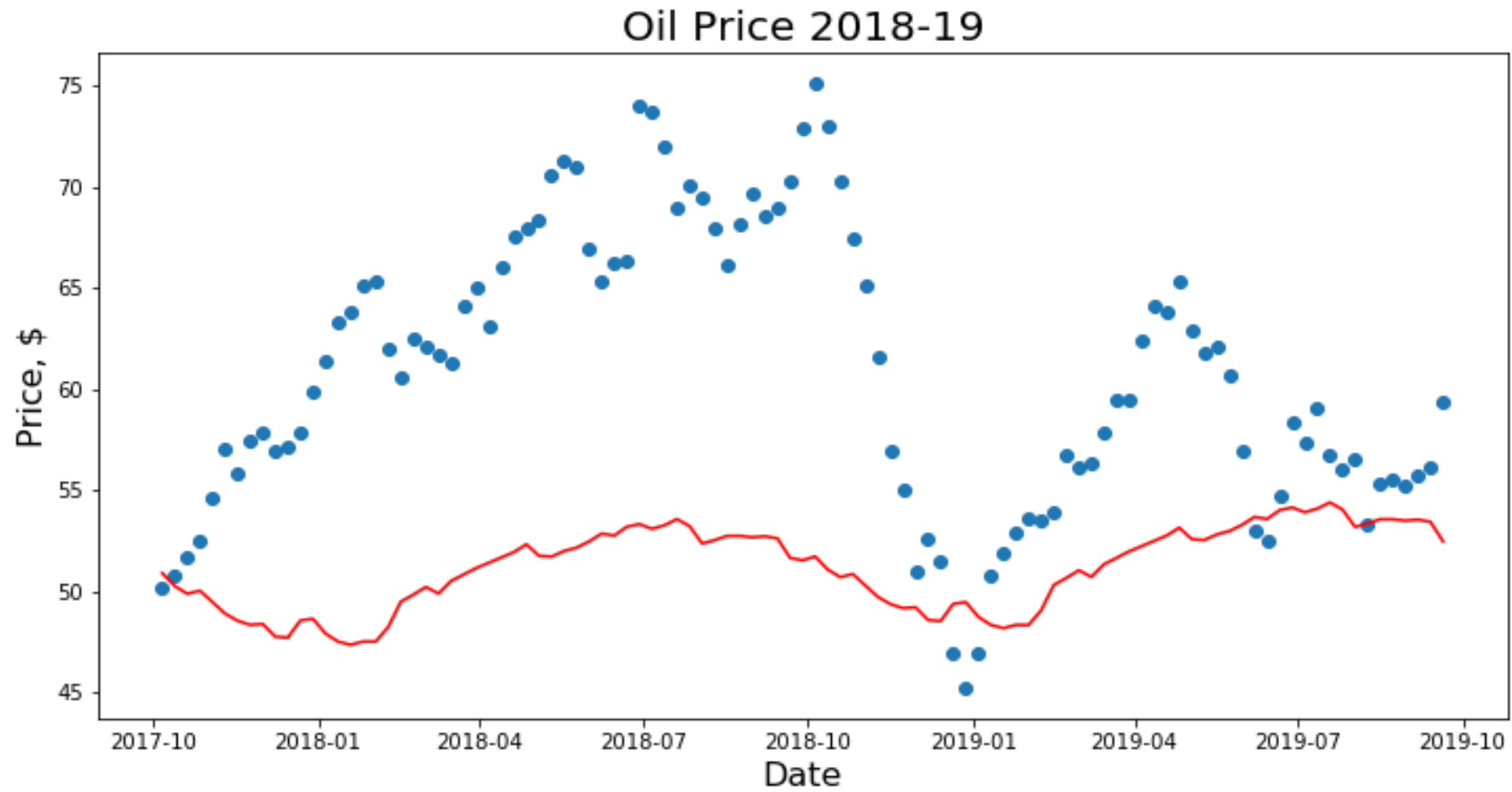
Decomposed Data



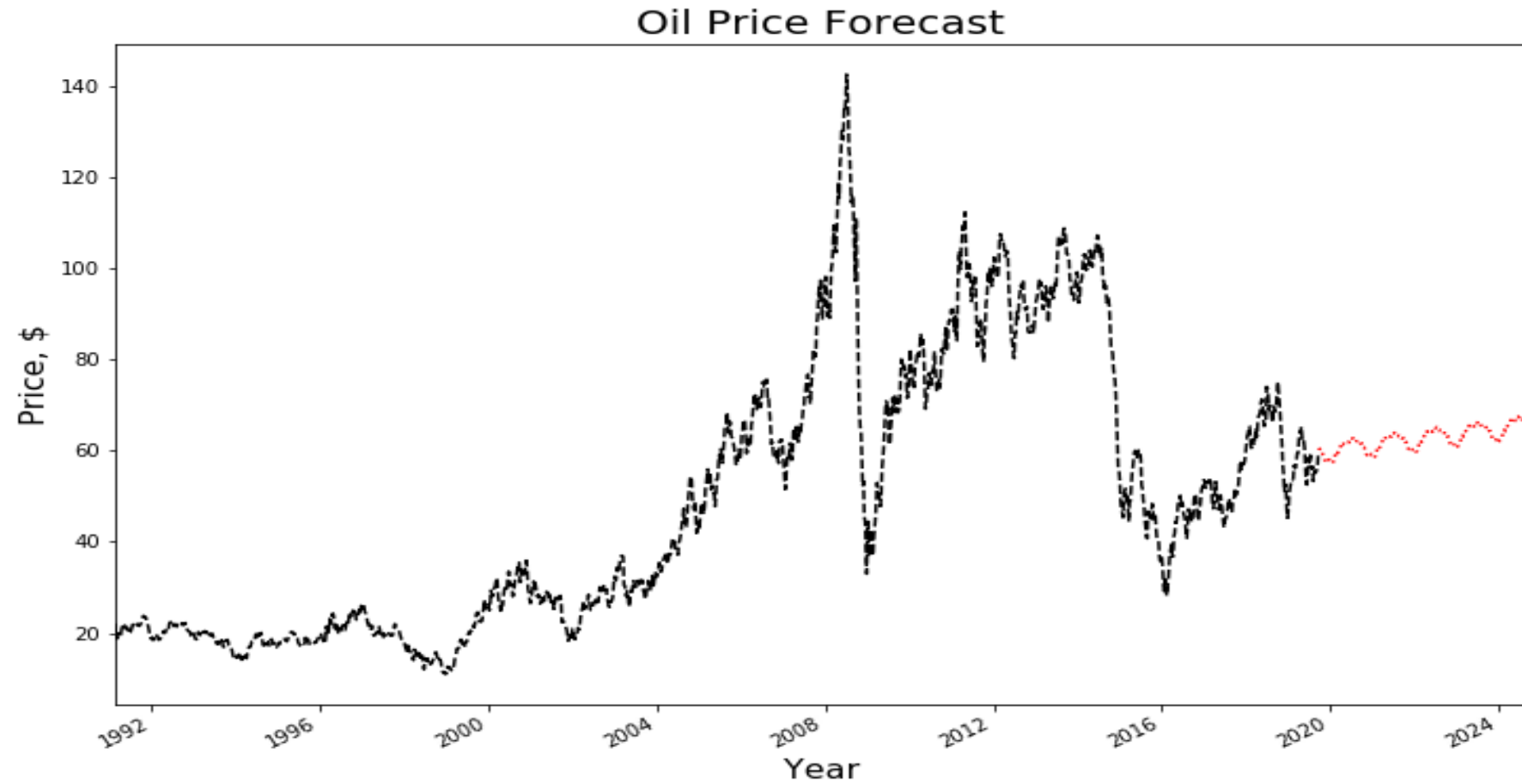
Modelling



Modelling



Prediction 2019-2025



Recommendations

- ▶ Do not invest in current market situation:
 - ▶ Late stage of the economy, recent irregular events
- ▶ Safer to invest in government bonds or in golds
- ▶ Wait for the big drop and then buy