**Crude Oil Price Prediction**

**Literature Survey:**

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| **Year** | **Author & Title** | **Objective** | **Techniques** | **Results** |
| 2010 | Abdullaah, S.N.Zeng  Machine learning approach for crude oil price prediction with Artificial Neural Networks- Quantitative (ANN) model. | The development of hierarchical conceptual model and the development of artificial neural networks- Quantitative (ANN-Q) model. | Machine learning and computational intelligence approach through combination of historical quantitative data with qualitative data from experts. | The result obtained from simulation study validates the effectiveness of data selection process by HC model. This model successfully extracts a comprehensive list of key factors that cause the crude oil price market to volatile. |
| 2017 | Halleh Bostanchi  WTI oil price prediction modeling and forecasting | Built the multivariate linear regression model and Univariate time series model using ARIMA models, followed by ARCH & GARCH models to know incapability of each variable to oil price. | 1. Structural and Time-Series methods  2. Multivariate Linear regression model  3. Box Jenkins Approach ( ARIMA)  4. Non-Linear Time Series Models( GARCH) | Due to high volatility nature of oil price, it is found that non-linear Time series based forecasting provide the best forecasting |
| 2018 | Varun Gupta,Ankit pandey  Crude Oil Price Prediction using LSTM Networks | Crude oil market is an immensely complex and dynamic environment and thus the task of predicting changes in such an environment becomes challenging with regards to it's accurate.In this paper,We have tried to predict crude oil prices using Long-Short term Memory ( LSTM) based recurrent neural networks. | LSTM (Long Short Term Memory)LSTM is one of the most successful RNN Architecture.  They compared ARMA and GRACH techniques to ANN and found that ANN performed better for Crude oil price forecasting.  RNN(Recurrent Neural Network) different from feedforward networks.They use their internal memory to predict things. | Before deciding the final architecture of the network,a number of different configuration of the network were tested.The results obtained from the work are quite encouraging. |
| 2019 | Yuhang zhang,Ziging DD  Systematic review in crude oil markets: Embarking on the oil price. | We systematically collated the literature on the crude oil price.  The economic effects of crude oil prices are characterized by complex non linear features | Neural network model is used to measure crude oil price voltatility.  Using big data technology and Artificial Intelligence to study the crude oil market. | It helps to review the forecast on volatility and risk management of crude oil price  along with the emergence of text mining technology and artificial intelligence technology . |
| 2020 | Nalini Gupta, Shobhit Nigam  Crude oil price prediction using artificial neural network | Variation of lag in a period of time has been done for the most optimum and close results, we then have validated our results by evaluating the root mean square error and the results obtained using the proposed model have significantly outperformed. | 1. ANN - Artificial Neural Network( Sigmoid Function with the learning Algorithm)  2. Back-Propagation learning Algorithm | This work indicates that the ANN model is an effective tool for crude oil price prediction and can be efficiently used for short term price forecasting by determining the optimal lags. Advantage of this research is in capturing the changing pattern of these prices. |
| 2021 | Ramesh Bollapragada,Akash Mankude,V.Udhaya Banu  Forecasting the price of crude oil | To develop a forecasting model to predict the crude oil. To reduce the operational costs increase profit and enhance competitive advantage | Analyze the primary theories related to the forecast of oil prices  Using two main streams of forecasting theory  1) Target Capacity Utilisation  2) Exhaustion Resource Theory  Using TCU rule with regression to forecast the crude oil price from 1987 to 2017 with the data | The forecast model is a good prediction of oil price. The data required are readily available. The number of variables is small. Easy to follow and the cost is very low. This model forecast both monthly and annual oil price. |