LITERATURE SURVEY

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Abstract:

This work aims to provide a deeper understanding of Crude oil price prediction.Oil demand is inelastic, therefore the rise in price is good news for producers because they will see an increase in their revenue. Oil importers, however, will experience increased costs of purchasing oil. Because oil is the largest traded commodity, the effects are quite significant.

Crude oil plays an important role in economic activities, with both commodity attributes and financial characteristics. Through comprehensive review of the literature on crude oil prices, the following phenomena are presented. First, the forecasts and risk management of crude oil prices are still important topics when researchers conduct studies, however, the uncertainty of economic activity has aggravated the fluctuation of crude oil prices. Second, factors from supply side and demand side are main drivers of movements of crude oil prices, and investor sentiment gradually becomes an important factor affecting the expected level of crude oil prices. Third, economic activities and financial stability are influenced by shocks of crude oil prices, meanwhile, many studies confirm the asymmetric effects. However, due to changes in the external environment, more complex nonlinear time-varying features are exhibited.

This oil price prediction is already in existence with technologies like artificial intelligence, deep learning, text mining, etc., in addition, the advent of RNN(Recurrent Neural Network) and LSTM(Long Short Term Memory) technologies provides new and effective methods for predicting the Crude Oil prices accurately.

INTRODUCTION:

Crude oil is perhaps the most important given its influential role in the world economy relative to other commodities, particularly in terms of causing recessions (Hamilton, 1983, 2008, 2009, 2013). Therefore, since 1970s, the oil price fluctuates crisis have spurred the interest of academics, policy makers and practitioners in studying the relationship between oil price and economic activity. The frequent occurrence of literatures indicates that the study of oil price has important practical value.

The research contents of existing literatures mainly include the measurement, influencing factors and driving factors of crude oil price. First, the oil market is very concerned about what happens to the price of oil, and the price prediction, volatility and risk formation have become the focus of research. Following the seminal work of Hamilton (1983), numerous literature studies also have investigated the effects of oil and its prices on macroeconomic indicators, however, results are still inconclusive.

With the multiple properties of crude oil market, the research on oil price has been greatly enriched. In recent years, the literature presents complexity in terms of research methods and research conclusions. As the financialization of oil commodity, the structure of the oil markets has changed and the oil markets become more and more similar to stock markets. There have been many emerging studies on the empirical link between oil prices and macroeconomic fundamentals. In terms of research conclusions, the latest literature gives more accurate conclusions and also obtains the opposite views from previous studies. Increases in oil prices lead to increases in the cost of production in many sectors; this might reduce production and increase unemployment while also resulting in inflation.

Our study contributes to the ongoing literature in the following aspects. Through comprehensive review of the literature on crude oil prices, it is found that the uncertainty of economic activity has aggravated the fluctuation of crude oil prices. Factors from supply side and demand side are main drivers of movements of crude oil prices, and investor sentiment gradually becomes an important factor affecting the expected level of crude oil prices. In the next section, we review static analysis in crude oil markets, included the forecasting of oil price, the measurement of oil price.

S.NO	TITLE	PROPOSED WORK	ALGORITHM/ MODEL USED	TECHNOLOGY	ADVANTAGES AND DISADVANTAGES
1.	Fore casting crude oil prices	1.With the popularity of the deep learning model in the engineering fields, it has attached significant research interests in the economic and finance fields. 2.Using the proposed model major crude oil price movement is analysed and modelled.	1.ARMA model 2.Random Walk model	A Deep Learning based model	Advantages: The empirical results showed that the deep belief network model has obvious advantages compared with traditional forecasting model. Disadvantages: The performance of the deep learning model is very sensitive to the parameters, attributed to limited types of deep learning model attempted.

S.NO	TITLE	PROPOSED WORK	ALGORITHM/ MODEL USED	TECHNOLOGY	ADVANTAGES AND DISADVANTAGES
2.	crude oil price Fore cast based on deep transfer learning: Shanghai crude oil as an example	Shanghai crude oil futures were officially listed in March 2018. It is of great significance to accurately predict the price of Shanghai crude oil futures for guiding China's domestic production practice.	1. ARIMA (Autoregressive Integrated moving average 2.GARCH (Generalized Autoregressive conditional. heteroscedasticity) 3. ECM(Error correction model) 4. ANN (Artificial neural network) 5. SVM (Support vector machine). 6. LSTM (Long short term memory). 7. RNN (Recurrent neural networks).	A Deep Learning based model	Advantages : The T-LSTM can accurately predict the crude oil prices of Shanghai , and the model has strong generalization ability and high prediction accuracy. Disadvantages **:** Due to the little accumulation of shanghai crude oil futures price data, it is difficult to predict.

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3.	WIT Oil Price Prediction Modelling And Forecastin g	1.We first built the multivariable linear regression model based on relevant explanatory variables 2.Then we build the univariate time Series model using ARIMA models , followed by ARCH and GARCH models	1.ARIMA models followed by ARCH and GARCH models. 2.ANN models , WANN model.	Artifical Intelligence	Advantages: Simplicity requiring only endogenous variables. Disadvantages: Lack of economic meaning inability to explain the internal factors driving oil prices.

S.NO	TITLE	PROPOSED WORK	ALGORITHM/ MODEL USED	TECHNOLOGY	ADVANTAGES AND DISADVANTAGES
4.	Driven Oil Price Value---at-Risk-Forecasting: A Decomposition Ensemble Approach.	Google index-driven decomposition ensemble model to forecast crude oil price risk. By constructing an index of investor attention for the market and emergencies combined with a bivariate empirical mode decomposition we will analyse the impact of investor attention on oil price fluctuations.	• Autoregressive integrated moving average (ARIMA), Support vector regression (SVR). • Back propagation neural network (BPNN). • BEMD, and ELM.	Big data technology and a time series decomposition method.	Advantages: High short-term prediction accuracy. Disadvantages: Lack of economic meaning, inability to explain the internal factors driving oil prices.

S.NO	TITLE	PROPOSED WORK	ALGORITHM/ MODEL USED	TECHNOLOGY	ADVANTAGES AND DISADVANTAGES
5.	Crude Oil Price Forecasting	Crude Oil Price Forecasting focus only on oil price volatility analysis and oil price determination within the supply and demand framework. It forecast the price with quantitative and qualitative method.	1.Support Vector Machine 2.Back Propagation neural network (BPNN) Algorithm 3.ARIMA Method	ARTIFICIAL INTELLIGENCE	Advantages: Global solution can be attained and the prediction can be improved if regular influences are taken into consideration in the framework. Disadvantages: Over training leads to damage of the prediction.

S.NO	TITLE	PROPOSED WORK	ALGORITHM/ MODEL USED	TECHNOLOGY	ADVANTAGES AND DISADVANTAGES
6.	Fore casting price of the crude oil using LSTM based on RNN	Oil demand is in-elastic, there fore the rise in price we would be implementing RNN(Recurrent Neural Network) with LSTM(Long Short Term Memory) to achieve the task.	1.RNN model 2.LSTM model	ARTIFICIAL INTELLIGENCE	Advantages : High short term prediction accuracy Disadvantages: The residual component that contains a great deal of unclear information.

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Thank You