CRUDE OIL PRICE PREDICTION USING AI

LITERATURE SURVEY

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**S. N. Abdullah,** **X. Zeng,** ON **Machine Learning Approach for Crude Oil Price Prediction with Artificial Neural Networks-Quantitative (ANN-Q) Model** **:** The volatility of crude oil market and its chain effects to the world economy augmented the interest and fear of individuals, public and private sectors. Previous statistical and econometric techniques used for prediction, offer good results when dealing with linear data. Nevertheless, crude oil price series deal with high nonlinearity and irregular events. The continuous usage of statistical and econometric techniques for crude oil price prediction might demonstrate demotions to the prediction performance. Machine Learning and Computational Intelligence approach through combination of historical quantitative data with qualitative data from experts’ view and news is a remedy proposed to predict this. This paper will discuss the first part of the research, focusing on to (i) the development of Hierarchical Conceptual (HC) model and (ii) the development of Artificial Neural Networks-Quantitative (ANN-Q) model.

**B. Abramson, A. Finizza**, **“Probabilistic forecasts from probabilistic models: A case study in the oil market,”** at **International Journal of Forecasting** : Probabilistic forecasts, probabilistic models, and contingent policy recommendations are inextricably intertwined. This article describes a case study in the use of inherently probabilistic belief network models to produce probabilistic forecasts of average annual oil prices. Belief networks are flexible enough to capture both standard, data-driven economic variables, and quantified expert judgements about the politics of the oil market (particularly the production and capacity policies of key OPEC members). These variables are interrelated by a combination of algebraic formulas, conditional probabilities, and econometric relations. The resultant network is used to test the impact of a variety of different scenarios. The probabilistic forecasts generated by running Monte Carlo analyses on these scenario networks provide corporate decision-makers with useful insights and recommendations.

**CLAUDIO MORANA** on **A SEMIPARAMETRIC APPROACH TO SHORT-TERM OIL PRICE FORECASTING** : In this paper it is shown how the GARCH properties of oil price changes can be employed to forecast the oil price distribution over short-term horizons. The forecasting methodology is semiparametric and it is based on the bootstrap approach. The results of an out-of-sample forecasting exercise, carried out using the Brent oil price series, suggest that the forecasting approach can be used to obtain a performance measure for the forward price, in addition to compute interval forecasts for the oil price.

**S.H., Kang** and **S.M Yoon** on **Forecasting** **Volatility of Crude Oil**

**Markets** : This article investigates the efficacy of a volatility model for three crude oil markets -- Brent, Dubai, and West Texas Intermediate (WTI) -- with regard to its ability to forecast and identify volatility stylized facts, in particular volatility persistence or long memory. In this context, we assess persistence in the volatility of the three crude oil prices using conditional volatility models. The CGARCH and FIGARCH models are better equipped to capture persistence than are the GARCH and IGARCH models. The CGARCH and FIGARCH models also provide superior performance in out-of-sample volatility forecasts. We conclude that the CGARCH and FIGARCH models are useful for modeling and forecasting persistence in the volatility of crude oil prices.