LITERATURE SURVEY

We divide crude oil price forecasting approaches into three categories: (1) heuristic approaches; (2)LSTM; and (3) machine learning techniques. Heuristic approaches for oil price prediction include professional and survey forecasts, which are mainly based on professional knowledge, judgments, opinion and intuition. Another heuristic approach, the so-called no-change forecast, uses the current price of oil as the best prediction of future oil prices. Despite its simplicity, the no-change forecast appeared to be a good baseline approach for oil price prediction and was better than other heuristic judgmental approaches (Alquist et al., 2013).Long short-term memory (LSTM) is an artificial neural network used in the fields of artificial intelligence and deep learning. It has feedback connections and is also applicable to tasks such as unsegmented, machine translation, robot control.Recurrent neural networks (RNN) identifies to be the most powerful and impactful models for processing time-series based sequential data. LSTM variants can be used for other task as well other than prediction such as speech, handwriting and polyphonic modelling. (https://www.ijisrt.com/assets/upload/files/IJISRT20FEB503_(1).pdf)LSTM networks are well-suited to classifying, processing and making predictions based on time series data, since there can be lags of unknown duration between important events in a time series.

Several machine learning techniques were proposed for oil price prediction, such as artificial neural networks (ANN) (Yu et al., 2008, Kulkarni and Haidar, 2009), and support vector machine (SVM) (Xie et al., 2006). These are nonlinear models which may produce more accurate predictions if the oil price data are strongly nonlinear (Behmiri and Pires Manso, 2013). However, these machine learning techniques, like other traditional machine learning techniques, rely on a fixed set of training data to train a machine learning model and then apply the model to a test set. Such an approach works well if the training data and the test data are generated from a stationary process, but may not be effective for non-stationary time series data such as oil price data.