

ABSTRACT

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PREDICTION OF THE VALUE OF OIL AND GAS AND NON-OIL AND GAS EXPORTS IN INDONESIA WITH THE LONG SHORT-TERM MEMORY (LSTM)

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Keywords : Badan Pusat Statistik (BPS) Indonesia, Export, Long Short-Term Memory (LSTM), Oil and Gas, Non-oil and gas, Prediction

(xiii + 68 + attachment)

Export is an international trade activity that plays a major role in increasing the country's foreign exchange and public welfare by selling goods or services from within the country to foreign markets. Indonesia has two forms of export activities, namely oil and gas and non-oil and gas exports. This research applies the Long Short-Term Memory (LSTM) algorithm to predict the value of oil gas and non-oil and gas exports until 2026 from data from 2004 to 2023 owned by the Badan Pusat Statistik (BPS) Indonesia. The data is divided into 80% training data and 20% testing data. The LSTM model was optimized with 100 epochs, batch size 32, validation split 10%, and learning rate 0,001 which resulted in the lowest Mean Squared Error (MSE) value of 0,0048 in training loss and 0,0029 in validation loss. The prediction results show an increase in oil and gas exports and a decrease in non-oil and gas exports. This prediction model is expected to help the government and businesses in planning a more effective export strategy and managing economic risks better.

Bibliography (2014 - 2024)