Abstract

Trade contributes to the United Arab Emirates' economic growth. This thesis focuses on trade dynamics in the UAE using Long Short-Term Memory (LSTM) neural networks. The study focuses on both import and export activities, providing understandings into the complex patterns and impacts of international trade on the UAE's economic growth.

The research begins by constructing an LSTM model to forecast the UAE's Gross Domestic Product (GDP) through the utilization of historical trade data. We use time series data for imports and exports as key input features. This innovative approach highlights the relevance of trade statistics as a leading indicator of economic performance.

We utilize the Mean Squared Error (MSE) loss metric and evaluate the correlation matrix, thus ensuring the robustness and precision of our predictions. This evaluation process demonstrates the LSTM model's ability to capture and comprehend the complex interplay of trade patterns and their subsequent impact on the UAE's economic growth.

This study is a significant contribution to the field of economic analysis, as it employs advanced LSTM techniques to discover previously unexplored insights into trade dynamics. By demonstrating the effectiveness of LSTM in forecasting economic variables based on trade data, this research underscores the need for artificial intelligence and machine learning to enhance our understanding of the intricate global economic landscape.

This thesis provides a thorough examination of the UAE's import and export trends, employing LSTM models for GDP prediction, thus fostering a deeper understanding of the nation's economic outlook. The work is not only expands the horizons of predictive economic analysis but also underscores the potential for intelligent computational techniques to inform and guide policy and decision-making in the context of international trade and economic development.

Keywords: Trade Analysis, LSTM, predictive analysis, Imports, Exports, RNN, GDP, GDP prediction.