ABSTRACT

Prediction of stock price movements is an interesting and important topic in financial market analysis because the ability to understand and predict price trends can provide strategic advantages for investors. This study aims to answer whether the addition of company fundamental features such as Price-to-Earnings (PE), Price-to-Book Value (PBV), and Debt-to-Equity Ratio (DER) can provide improved results compared to using only historical data in the form of closing stock prices (Close) in predicting weekly stock price movements. The data used in this study were taken from the Indonesia Stock Exchange (IDX), focusing on the closing price (Close) as the main feature. To support the analysis, the Close feature is also equipped with ARMA (Autoregressive Moving Average) and ARIMA (Autoregressive Integrated Moving Average) models to capture temporal patterns in historical data. The method used in this research is Temporal Convolutional Network (TCN), with the classification of stock prices into three categories, namely up, stagnant, and down, based on changes in stock prices with a threshold of 1%, 2%, and 3%. This study shows that a threshold of 3 is the best for predicting short-term (weekly) stock price movements. However, the addition of fundamental data does not result in better performance than using only historical data. The average accuracy and F1-Score with historical data reached 94%.

Keywords: *stock price prediction, TCN, fundamental features, ARMA and ARIMA, time series analysis*