TRUNCATED SPLINE REGRESSION APPLICATION ON STOCK OF MINING COMPANIES IN INDONESIA
(Case Study: PT Adaro Energy Tbk, PT Indo Tambangraya Megah Tbk, and PT Aneka Tambang Tbk)

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ABSTRACT
Stocks are securities that can be bought and sold by an individual or business entity as a token of ownership of a person or business entity in a company or limied liability company. Mining company is one of stocks that impacted by the economic global crisis. One of factor that influenced stock prices are rupiah exchange rate. Data containing stock prices and rupiah exchange rates are include in the longitudinal data category. To handle longitudinal data, the right analysis is needed, statistical method that can handle is using nonparametric approach with spline truncated regression to find out how the rupiah exchange rate affects the stock prices. The best model in this method depends on determining the optimal of knots which has a minimum GCV value. The best truncated spline regression model is located in 3 orde with 3 knots for each subject in longitudinal data. By comparing MAPE values, the results of predictions using truncated spline regression are better than simple linear regression. The MAPE values are 8,73% for PT Adaro Energy Tbk, 9,89% for PT Aneka Tambang Tbk, and 12,87 for PT Indo Tambangraya Megah Tbk.

Keywords: stocks; rupiah exchange rate; longitudinal data; truncated spline regression; knots; GCV