ABSTRACT

Investment is the activity of allocating funds or capital into assets with the expectation of generating returns or increasing value over time. Many individuals prefer investments that offer stable returns and lower risk, particularly for long-term goals. One popular form of investment is bonds, which are debt securities issued by governments or corporations as a means of financing. In considering bond investments, it is essential for investors to understand the expected return or yield. The relationship between yield and bond maturity is captured by the concept of the term structure of interest rates, which is visually represented by the yield curve. One commonly used method to model the yield curve is the Nelson-Siegel-Svensson (NSS) model, an extension of the Nelson-Siegel model that introduces additional parameters to enhance curve flexibility. This study utilizes transaction data from 30 Indonesian government bonds with Fixed Rate (FR) codes as of December 12, 2024. Parameter estimation is conducted using the Nelder-Mead algorithm by minimizing the Sum of Squared Errors (SSE). Model accuracy is evaluated using the Mean Absolute Percentage Error (MAPE), resulting in a value of 0.82%. This indicates that the NSS model accurately represents the yield curve and can be effectively used as a tool for analyzing sovereign debt instruments in the financial market.

Keywords: Investment, Bonds, Yield, Yield Curve, Nelson Siegel Svensson, Nelder-Mead, MAPE