Forecasting Silver Commodity Prices Using Geometric Brownian Motion: A Stochastic Approach

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Abstract : Historically, a variety of approaches have been taken to forecast commodity prices due to the significant implications of these values on the global economy. An accurate forecasting tool for a valuable commodity would significantly benefit investors and governmental agencies. Silver, in particular, has grown significantly as a commodity in recent years due to its use in healthcare and technology. This manuscript aims to utilize the Geometric Brownian Motion predictive model to forecast silver commodity prices over multiple 3-year periods. The results of the study indicate that the model has several limitations, particularly its inability to work effectively over longer periods of time, but still was extremely effective over shorter time frames. This study sets a baseline for silver commodity forecasting with GBM, and the model could be further strengthened with refinement.