

ABSTRACT

This research aims at examining the implementation of options contracts on gold prices using the Black Scholes and GARCH models accompanied by a long strangle strategy. These results were tested by comparing the average percentage value of the actual options premium price and the options calculated using the AMSE (Average Mean Square Error) method where the smallest percentage value is a more accurate reflection of the model. This research used 36 years secondary data for daily gold prices obtained in 1985 to 2020.

In one-month maturity date, the GARCH model was more accurate than the Black Scholes model for the call and put options, because the GARCH model call option had the smallest AMSE error value with 0.08% and on the put options of 0.117%.

For the two-month maturity date, the GARCH model was more accurate than the Black Scholes model for the call and put options, because the GARCH model call option had the smallest AMSE error value with 0.14% and put options of 0.11%.

For the three-month maturity date, the GARCH model was more accurate than the Black Scholes model for the call options, while the put options of the Black Scholes model was more accurate than the GARCH model because the GARCH model call option had the smallest AMSE error value of 0.37% and the put options of Black Scholes model had the smallest AMSE error value of 0.28%.

The profit percentage of the Black Scholes model showed a higher value than the GARCH model where the value for 1-month period was 17.71%, 2 months-period was 25.06%, and 3-months period was 27.67%.

Keywords: Gold Price, Options Contract, Black Scholes, GARCH, Long Strangle, AMSE