SUMMARY

ABITUR ASIANTO. Integrated Analysis of Selling Option on WTI Futures. Supervised by HERMANTO SIREGAR, ROY SEMBEL, and TUBAGUS NUR AHMAD MAULANA.

West Texas Intermediate (WTI) crude oil is one of the macroeconomic indicators traded through futures and options. Trading options on WTI is currently the largest transaction in the world. Prior to trading, an integrated analysis of selling options on WTI was required by means of WTI fundamental, winning probability, and risk-return analysis. WTI fundamental analysis was done on the first and second study. Winning probability and risk-return analysis was done in third and fourth study.

The first study was a WTI fundamental analysis that aimed to analyze the determinants of WTI prices using VECM and monthly data of WTI prices, WTI supply, WTI demand, gold prices, S & P 500, T-Note, US dollar index, and US GDP from February 1990 to July 2017. Empirical results indicated that the WTI supply variable was the major determinant of WTI prices significantly negatively. An increase (decrease) in growth of WTI supply would lead to a major decrease (increase) in growth of price.

The second study was a WTI fundamental analysis that aimed to analyze the early warning of WTI price using OECD method. It used monthly data of price, supply, demand of WTI, financial market, and OECD economic indicators from January 1990 to October 2017. Empirical results indicated that the OECD model was able to predict the price of WTI with the level of accuracy reached 93%.

The third study was the winning probability analysis between strike far out of the money (FOTM) and near the money (NTM) strike of selling option on WTI strategy. The daily data of WTI price from April 1984 to May 2017 was simulated by Black Scholes Option Pricing method into monthly premium return data. These data were then analyzed with runs test and one-sample proportion test. Empirical results indicated that the winning probability of strike in FOTM and strike in NTM were 94% and 49%. The winning probability at FOTM strike was much higher than that at NTM strike.

The fourth study was the risk-return analysis between FOTM and NTM strike of selling option on WTI strategy. The daily data of WTI price from April 1984 to May 2017 was simulated by Black Scholes Option Pricing method into monthly premium return data. These data were then done to analyze Value at Risk (VaR) using ARCH-GARCH method. The empirical results indicated that the selling option on WTI at the FOTM strike position had a low risk of at least 12% and the yield value of 11% per annum. This yield value was much more above the Fed rate of 1.75% per annum.

Keywords: early warning, OECD, probability, selling option, value at risk, VECM, WTI