Estimating dynamic volatility of returns for Deutsche Bank

Zhi Li[*]

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Abstract

In financial market, the volatility of returns varies over time. The purpose of this study is to estimate the dynamic volatility of returns for Deutsche Bank by using an autoregressive conditional heteroscedasticity model. Both ARCH and GARCH models have been used to model observed time series and determine future volatility based on previous values and volatility. We have applied the assumptions of both normal distribution and Student t-distribution of error terms to models. ARCH(m) and GARCH(1,1) have been compared by abilities of forecasting volatility based on AIC and Ljung-Box tests. The result has shown that GARCH(1,1) with normal distribution is the model that we need use for estimating volatility of returns.

[*]Postal address: Mathematical Statistics, Stockholm University, SE-106 91, Sweden. E-mail: nicole.li0927@gmail.com. Supervisor: Mathias Lindholm, Karl Rökaeus, Joanna Tyrcha.