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On Estimating the Parameters in Conditional Heteroskedasticity Models by Empirical Likelihood Estimation

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Abstract

In most time series models, the data sets that we might be confront with are not statistically independent. While the celebrated empirical likelihood (EL) estimation proposed by owen (1988) has been widely used in a framework of independent data without having to know the distribution of the population, it is also challenging to apply EL estimation to the models with dependent data. In this talk, we will exploit EL method to estimate the parameters emerging in some important econometrical models including ARCH, GARCH, EGARCH and TGARCH. In addition, we conduct some illustrative simulations to compare EL approach with other methods of estimation (e.g. MLE and OLS). Finally, we analyze the data of the West Texas Intermediate (WTI) Crude Oil Prices by fitting it into the GARCH model.

Key words：GARCH; Empirical likelihood estimation; Oil price