Autoregressive Conditional Heteroscedasticity (ARCH) Models: A Review

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Abstract: Autoregressive Conditional Heteroscedasticity (ARCH) models have successfully been employed in order to predict asset return volatility. Predicting volatility is of great importance in pricing financial derivatives, selecting portfolios, measuring and managing investment risk more accurately. In this paper, a number of univariate and multivariate ARCH models, their estimating methods and the characteristics of financial time series, which are captured by volatility models, are presented. The number of possible conditional volatility formulations is vast. Therefore, a systematic presentation of the models that have been considered in the ARCH literature can be useful in guiding one's choice of a model for exploiting future volatility, with applications in financial markets.

Keywords: ARCH models, forecast volatility.