

## **PREDICTABILITY AND MODEL SELECTION IN THE CONTEXT OF ARCH MODELS**

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Autoregressive conditional heteroscedastic (ARCH) models, introduced by Engle (1982), have been widely used in financial time series analysis and particularly in analyzing the risk of holding an asset, evaluating the price of an option, forecasting time varying confidence intervals and obtaining more efficient estimators under the existence of heteroscedasticity. In the recent literature one can find several forms of ARCH models have been considered for the description of some of the characteristics of financial markets. The problem of selecting the model that describes best the movement of the series under study is therefore of practical importance.

Most of the methods used in the literature for selecting the appropriate model are based on evaluating the ability of the models to describe the data. Standard model selection criteria such as the Akaike Information Criterion (1973) and the Schwartz Bayesian Criterion (1978) have been widely used in the ARCH literature, despite the fact that their statistical properties in the ARCH context are unknown.

In this paper, an alternative model selection approach is examined based on the evaluation of the predictability of the models. Attention is focused on the behavior of the estimators of conditional means or of conditional variances. In both cases the Correlated Gamma Ratio Distribution (CGR) developed by Panaretos et al. (1997) in the context of linear models, is being considered to be applied in the context of ARCH models.

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