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Modelling of Intraday Stock Trading Volumes of Liquid International Companies: A Standard AR Structure or a Linear ACV Model? *

Roman HUPTAS

Krakow University of Economics, Cracow, Poland

Correspondence should be addressed to: Roman HUPTAS, huptasr@uek.krakow.pl

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Abstract

In this paper we analyse intraday stock trading volumes of liquid companies and compare the modelling ability of standard autoregressive models for log trading volumes and alternative linear autoregressive conditional volume (ACV) models. We consider three AR models with normal distribution, while its conditional variance is one, constant or time-varying, and two linear ACV models with a Burr or the generalized gamma error distribution. To estimate the models, Bayesian approach is adopted. A formal Bayesian comparison of all considered models is made using Bayes factors. An empirical study is performed for 10-minute trading volume data of large, international and very actively traded companies listed on well-developed and emerging stock exchanges. The empirical results clearly indicate that the most adequate specification is the linear ACV model with a Burr error distribution that has very high Bayes factors against all other models.

Keywords: intraday trading volume, autoregressive model, ACV model, model comparison

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