

TIME VARYING PORTFOLIO RISK FORECASTING ON CROATIAN STOCK MARKET

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Abstract:

For any investor on stock market it is very important to predict possible loss, depending on if he holds "long" or "short" position. By forecasting portfolio risk investor can be ensured "a priori" from estimated market risk, using financial derivatives, i.e. options, forwards, futures and other instruments. In that sense we find financial econometrics as the most useful tool for modeling conditional mean and conditional variance of nonstationary financial time series. Using assumption of heavy tailed distribution, such as Student's t-distribution in multivariate GARCH(p,q) models, it becomes possible to forecast portfolio risk much more precisely. Such modeling enables time-varying portfolio risk forecasting, because the assumption of constant risk measures between stocks is unrealistic. The complete procedure of analysis has been established using real observed data at Zagreb Stock Exchange. For this purpose daily returns of the most frequently traded stocks from CROBEX index are used.

Key words: *portfolio theory, multivariate forecasting, volatility, time-varying risk*