

7th International Conference on Applied Statistics

Using the Regression Model in the Analysis of Financial Instruments Portfolios

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Abstract

An especially important aspect in the analysis of performance for financial instruments is the determination of the correlation existing between the evolution of its performance and the overall trend of the capital market. The determination of such econometric model ensures, for capital investors, a series of information necessary in order to establish their behaviour in the subsequent periods. Within the research, the regression econometric model was used with the aim to evaluate the relation between the performance of a portfolio of financial instruments and the evolution of the corresponding capital market. The portfolio is made of ten financial titles, quoted on the main market of the Bucharest Stock Exchange. The dataset which offers the source data for analysis includes details regarding the daily evolution in 2012 of the selected shares.

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Selection and peer-review under responsibility of the Department of Statistics and Econometrics, Bucharest University of Economic Studies.

Keywords: portfolio, performance, EViews, regression, investor

Nomenclature

RAN_PORT	value of the performance of the portfolio of shares (dependent variable)
RAN_BET	value of the performance for BET (independent variable)
α, β	parameters of the linear regression model
ε	error of the regression model.

The data analyzed characterize the daily evolution in 2012 (366 calendar days/250 effective transaction sessions) for ten financial titles, selected from the companies quoted on the main market of the Bucharest Stock Exchange (S.C. Electromagnetica S.A. Bucharest (symbol ELMA), OMV PETROM S.A. (symbol SNP), S.C. BERMAS S.A.

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(symbol BRM), S.N.T.G.N. TRANSGAZ S.A. (symbol TGN), S.C. TURISM FELIX S.A. BĂILE FELIX (symbol TUF), SIF OLTENIA S.A. (symbol SIF5), SIF MUNTENIA S.A. (symbol SIF4), C.N.T.E.E. TRANSELECTRICA (symbol TEL), S.C. BIOFARM S.A. (symbol BIO) and Transilvania Bank (symbol TLV), as well as the dataset for the evolution of the BET index during the considered period. Based on these information, the performance of the portfolio which includes the ten shares in equal quotas (equiponderate portfolio) was determined, and also the performance of the BET index for the one year period analyzed.

In the first stage, the data processed with the help of Microsoft Excel were imported in a new application created in Eviews. Statistical tests were applied for the two data series considered and the evolution of the two indicators was graphically represented. The results are displayed below:

- For the data series regarding the performance of the portfolio

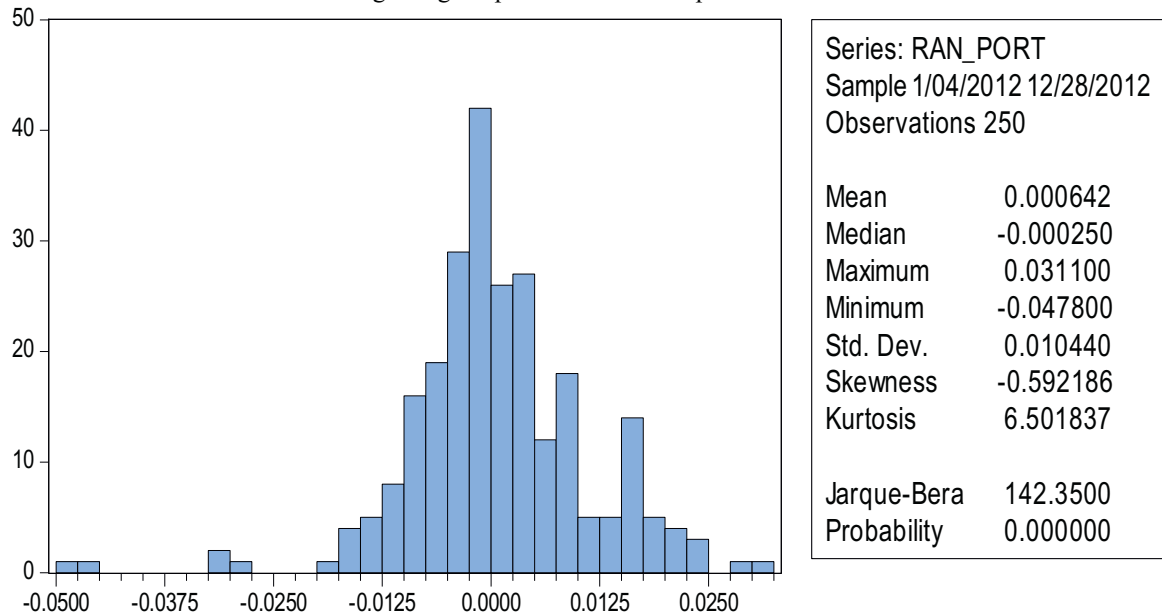


Figure 1. Statistical tests for portfolio performance (a)

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