Using The Fama-French Model for Estimating the Cost of Capital of Selected Stock Indexes*

Stanislaw URBANSKI

AGH University of Science and Technology, Faculty of Management, 30-067 Krakow, Poland

Dariusz ZARZECKI

University of Szczecin, Faculty of Economics and Management, 71-101 Szczecin, Poland

Correspondence should be addressed to: Stanislaw URBANSKI; surbansk@zarz.agh.edu.pl

Abstract

We use the Fama-French model and the classic CAPM to estimate the cost of capital of the S&P, NIKKEI, DAX, CAC, OEX, SMI, FTSEMIB indexes, the US market portfolio CRSP, the European market portfolio, and the Polish market portfolio WIG. Model tests are run on 276 monthly returns of stocks listed on the markets in the years 1995-2019. The estimated cost of capital is the cost of the portfolio of corporate investment projects related to unknown hedging instruments. We use the bootstrap method to estimate the confidence interval of the cost of capital. The cost of capital is estimated for systematic risk assessed on the basis of 48, 60, and 96 periods, and for risk premium assessed in all 276 months. The cost of capital determined on the basis of different periods of systematic risk estimation is different for all the tested indexes. The lowest and positive value of cost of capital median is found for the NIKKEI index. The highest value of the cost of capital median is found for the CAC, OEX, SMI and FTSEMIB indexes. The cost of capital median for the WIG index is negative. This is due to large errors in the estimated cost of capital that result from the lack of multifactor efficiency of generated portfolios on the Polish market by the CAPM and the Fama-French model. Presented procedures for estimating the cost of capital may be useful for managing stock portfolios on chosen markets.

Keywords: ICAPM, Cost of capital, Risk premium, Bootstrap method

JEL classification: G11, G12

_____