

Tests of the Fama and French Three Factor Model with reference to Industry Cost of Equity : Evidence from India

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Abstract

In this article the performance of the CAPM and the Fama and French three factor model in the Indian context has been re-evaluated and compared by employing industry portfolio as test assets. In addition, the possibility of developing a more parsimonious model has been explored. While the CAPM fails to explain the cross section of excess industry returns, the three factor model succeeds in this task. Also, no evidence has been found in support of the claim that a two factor model comprising of market and size factors provides a more parsimonious description of stock return in the Indian context. The study reveals that eight out of mini industry portfolios earn statistically significant average monthly excess returns. The study period considered for testing is October 2002 to September 2016.

I. Introduction

MODELLING THE RISK-RETURN trade-off for equity stocks has been an area of interest among researchers for a long time because it has important applications such as estimating the cost of capital, cost-benefit analysis and measuring the performance of managed portfolios. The Capital Asset Pricing Model (CAPM) is mostly used by market practitioners to quantify the relationship between risk and expected return of a stock in equilibrium. The main reason behind the popularity of this model over other asset pricing models is that it offers powerful and more intuitively pleasing solutions to the problems of measuring risk and estimating the equilibrium relationship between expected return and risk.

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The study reveals that eight out of the nine industry portfolios earn statistically significant average monthly excess returns. While CAPM fails to explain the cross section of excess industry returns, the Fama and French three factor model succeeds in this task. Moreover, the three factor model fully captures the abnormal returns missed by CAPM as the former passes the Gibbons, Ross and Shanken (1989 GRS) test. These findings rule out the possibility that the previous studies (Connor and Sehgal, 2003; Sehgal and Balakrishnan, 2013) documenting the validity of the Fama-French three factor in the Indian stock market is due to the low hurdle set by the size-BE sorted test portfolios. Since, the evidence of this study suggests that the Fama-French French three factor model performs satisfactorily in India even after judging the performance of the model by using the appropriate yardstick of industry-sorted portfolios the validity of the model in the Indian context is confirmed unambiguously. Also, no evidence has been found in support of the claim that a two factor model comprising of market and size factors provides a more parsimonious description of stock return in the Indian context.

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