

The Journal of Asian Finance, Economics, and Business

Volume 5 Issue 3 / Pages.19-29 / 2018 / 2288-4637(pISSN) / 2288-4645(eISSN)

Korea Distribution Science Association (한국유통과학회)

Jensen's Alpha Estimation Models in Capital Asset Pricing Model

Phuoc, Le Tan (Becamex Business School, Eastern International University)

Received : 2018.06.21 Accepted : 2018.07.30 Published : 2018.08.30

<https://doi.org/10.13106/jafeb.2018.vol5.no3.19>

Copy

Citation

PDF

Abstract

This research examined the alternatives of Jensen's alpha (α) estimation models in the Capital Asset Pricing Model, discussed by Treynor (1961), Sharpe (1964), and Lintner (1965), using the robust maximum likelihood type m-estimator (MM estimator) and Bayes estimator with conjugate prior. According to finance literature and practices, alpha has often been estimated using ordinary least square (OLS) regression method and monthly return data set. A sample of 50 securities is randomly selected from the list of the S&P 500 index. Their daily and monthly returns were collected over a period of the last five years. This research showed that the robust MM estimator performed well better than the OLS and Bayes estimators in terms of efficiency. The Bayes estimator did not perform better than the OLS estimator as expected. Interestingly, we also found that daily return data set would give more accurate alpha estimation than monthly return data set in all three MM, OLS, and Bayes estimators. We also proposed an alternative market efficiency test with the hypothesis testing $H_0: \alpha = 0$ and was able to prove the S&P 500 index is efficient, but not perfect. More important, those findings above are checked with and validated by Jackknife resampling results.

Keywords

Jensen's Alpha; Market Efficiency; Capital Asset Pricing Model; Bayes Estimator; Jackknife Resampling Methodology

File



Download PDF

The Jensen's measure, or Jensen's alpha, is a risk-adjusted performance measure that represents the average return on a portfolio or investment, above or below that predicted by the capital asset pricing model (CAPM), given the portfolio's or investment's beta and the average market return. This metric is also commonly referred to as simply alpha. Key Takeaways. The Jensen's measure is the difference in how much a person returns vs. the overall market. Jensen's measure is commonly referred to as alpha. When a manager outperforms the market concurrent to risk, they Jensen's Alpha, also known as the Jensen's Performance Index, is a measure of the excess returns earned by the portfolio compared to returns suggested by the CAPM model itself provides risk-adjusted returns, i.e., it takes into account the risk of the security. So, if the security is fairly priced, its actual returns will be same as CAPM. The Alpha in this case will be 0. If, however, the security earns even more than the risk-adjusted returns, it will have a positive Alpha. Negative alpha indicates that the portfolio has not earned its required return. A higher Alpha is always desirable by portfolio managers. Jensen's alpha focuses only on non-diversifiable, relevant risk by using beta and CAPM. It assumes that the portfolio has been adequately priced. Capital Asset Pricing Model (CAPM) is a measure of the relationship between the expected return and the risk of investing in security. This model is used to analyze securities and pricing them given the expected rate of return and cost of capital involved. CAPM Formula. The (capital asset pricing model) CAPM formula is represented as below. Expected Rate of Return = Risk-Free Premium + Beta * (Market Risk Premium). $R_a = R_{rf} + \beta a * (R_m - R_{rf})$.