

An Empirical and Theoretical Analysis of Capital Asset Pricing Model

Abstract

The problem addressed in this dissertation research was the inability of the single-factor capital asset pricing model (CAPM) to identify relevant risk factors that investors consider in forming their return expectations for investing in individual stocks. Identifying the appropriate risk factors is important for investment decision making and is pertinent to the formation of stocks' prices in the stock market. Therefore, the purpose of this study was to examine theoretical and empirical validity of the CAPM and to develop and test a multifactor model to address and resolve the empirical shortcomings of the single-factor CAPM. To verify the empirical validity of the standard CAPM and of the multifactor model, five hypotheses were developed and tested against historical monthly data for U.S. public companies. Testing the CAPM hypothesis revealed that the explanatory power of the overall stock market rate of return in explaining individual stock's expected rates of return is very weak, suggesting the existence of other risk factors. Testing of the other hypotheses verified that the implied volatility of the overall market as a systematic risk factor and the companies' size and financial leverage as nonsystematic risk factors are important in determining stock's expected returns and investors should consider these factors in their investment decisions. The findings of this research have important implications for social change. The outcome of this study can change the way individual and institutional investors as well as corporations make investment decisions and thus change the equilibrium prices in the stock market. These changes in turn could lead to significant changes in the resource allocation in the economy, in the economy's production capacity and production composition, and in the employment structure of the society.