

ABSTRACT

The capital asset pricing model (CAPM) is a formal presentation of the relationship between the return and risk that has certain intuitive appeal. The model allows one to be more precise in the definition of risk-return relationship and also provides a framework upon which one can develop quantitative and analytical tools for investment analysis and evaluation. At the same time, the model is a simplification of reality and as such may be abstract for practical application. It is, thus, important to test the capital asset pricing model to assess how well it describes the actual behavior of security expected return and market risk.

The present study attempts to test the risk-return relationship of a sample of sixty securities in the Securities Exchange of Thailand during the period of 1992-1995 based on the capital asset pricing model. It focuses on examining the relationship between expected return and beta, a beta-squared variable (to test for linearity), unsystematic risk, and stock standard deviation. Hence, three alternative methods of beta estimation are conducted. The first method comes from running the first-pass regression between security returns and returns from the market. The beta value from the second method is computed by dividing covariance of security returns and returns from the market by the variance of the returns from the market. The third method of calculation of beta is to reduce some index bias by regressing security returns and returns from the market at current and preceding period. The beta of this method is obtained by summing up the coefficients of returns from the market at current and preceding period. In order to achieve the reliable results, the present study also applies statistical hypotheses testing to such a relationship among these variables.

The sample of the study is divided into two main groups. The first group is composed of thirty securities randomly selected from the large capitalization securities

designated by SEC. The other group consists of thirty stocks randomly selected from the lower capitalization securities traded in the Securities Exchange of Thailand. The time period of the study is during January 1992 to December 1995, which is contributed a total of 48 monthly observations.

The data used for an analysis are stock price, SET index and one year fixed deposit interest rates from January 1992 to December 1995. The monthly price change is used as a proxy for a security monthly return from investment. The change in SET index is used as a proxy for market return. The one year fixed deposit interest rate is an proxy for the risk-free security.

In this study, three basic forms of CAPM equations are used for testing the risk-return relationship that are shown below:

The first form is expressed as:

$$R_i = R_f + (R_m - R_f) \beta_i + e_i$$

The second form is expressed as:

$$R_i - R_f = a_0 + (R_M - R_f) \beta_i$$

The third form is expressed as:

$$E(R_i) = a_0 + a_1 \beta_i + a_2 \sigma_i$$

The results of the large capitalization securities indicate that there is a positive linear relationship between expected return and risk measured by beta at 95% confidence level. This empirical evidence suggests that investors are averse to risk, that is, high degree of risk must be compensated with higher return. Neither the residual variance nor stock standard deviation are impressive in explaining the expected return because of their statistically insignificant with 95% of confidence level. Moreover, all thirty stocks provide higher expected return than the risk-free asset rate. This also suggests that for bearing higher risk in the stock market, investors require higher return to compensate for the additional increase

in risk. Interestingly, the results of the lower capitalization securities yield opposite results; beta does not have a role in explaining the expected return whereas the residual variance and security standard deviation do. These raises some questions on the consistency of Thai's stock market to the CAPM theory. Since the CAPM theory indicates that beta or systematic risk is a sole factor in explaining the expected return.

