

# Capital Asset Pricing Model: The Indian Context

## Abstract

The objective of the present study is to test the applicability of CAPM in the Indian context. In the present study CAPM has been tested in its original form, as developed by Fama-MacBeth (1973). Theoretical difficulties notwithstanding, the Fama-MacBeth method has been widely tested abroad and the results on the Indian context will provide a good comparison between the stock markets in India and abroad.

The sample for the present study consists of 170 actively traded scrips listed in the Bombay Stock Exchange (BSE). The sample is screened to include only those scrips which have been quoted at least in 36 months out of any consecutive 48 month period during the twelve year span of the study. Month end prices of these scrips have been used to compute holding period return for each month. The monthly returns have been adjusted for bonus, stock split, consolidation and dividend (interim, final etc) issues. The RBI monthly index, Economic Times ordinary share price index and BSE Sensitive Index are separately used as a proxy for the market index.

The entire period of the study is divided into three sub-periods namely, formation period, estimation period and testing period. The formation period data are used to estimate a proxy for true betas (which are later used in the ranking of the

scrips). The equation used in the formation period to calculate beta is similar to one factor market model of Sharpe. In the subsequent estimation period, time-series regression using one factor market model is used to re-estimate beta. Finally in the testing period validity of CAPM is tested by using the estimates of portfolio betas, portfolio beta squares and residual errors, obtained from the estimation period regressions, as independent variables in the cross-sectional regressions.

In the first analysis of the data four-year formation period, four-year estimation period and one-year testing period is used. The test of CAPM is further carried out with smaller sub-periods.

The results from the present study indicate that the Capital Asset Pricing Model probably cannot explain the risk-return relations in the Indian capital market. Dinson's test indicates that bias due to thin-trading effect is not the reason behind CAPM not holding. Tests of seasonality indicate that there is no significant seasonality in the BSE equity return. There is some evidence of size effect (negative relation between market value and return) and dividend yield effect (positive relation between dividend yield and return) in the BSE.