

## Asset Price Behaviour in Indian Stock Market: Is Conditional CAPM Relevant?

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*The present study attempts to test the validity of the Conditional Capital Asset Pricing Model (CAPM) in the context of Indian stock market. The Autoregressive Conditional Heteroscedastic (ARCH) process, as well as, its variants such as ARCH-in-Mean (ARCH-M), Generalised Autoregressive Conditional Heteroscedastic (GARCH) and GARCH-in Mean (GARCH-M), are employed to ascertain whether the CAPM -with these process can explain asset price behaviour of Indian stock market better. The results based on the monthly return of 53 stocks traded in the Bombay Stock Exchange (BSE) during the period 1987:1-1994:5 reveal that the conditional CAPM performs well under empirical scrutiny.*

### I Introduction

The traditional Capital Asset Pricing Model (CAPM) which describes stock return solely on its  $\beta$  measure, is based on the assumption that all market participants share identical subjective expectation of mean and variance of return distribution, and portfolio decision is exclusively based on these moments. But the empirical evidences from literature suggest a deviation of the model from its formal theory. It has been observed that the return distribution varies over time (Engle, 1982 and Bollerslev, 1986). In other words, the stock return distribution is time-variant in nature and hence, the subjective expectation of moments differ from one period to another. This implies that the investor's expectation of moments behave like random variables rather than constants as assumed in the traditional CAPM. This observation has implications while finding an appropriate CAPM for stock returns.

In the recent literature, several studies (Bollerslev *et. al.* 1988; Harvey, 1989; Giovannini and Jorion, 1989; Schwert and Seguin, 1990; Chan *et. al.* 1992 and Fornari 1995) have employed a modified CAPM in which the time varying nature of moments of asset return distributions is taken care of. It has been shown that the modified CAPM, also known as the conditional CAPM, has performed better when compared to the traditional CAPM in explaining stock returns. In Indian context, however, no attempt has been made so far to apply conditional CAPM to the stock return. Hence, in this study, an attempt is made to estimate the CAPM by incorporating the time varying moments and to see how far the conditional CAPM proves to be a better model of stock return in India. Thus, the present paper aims at filling the gap in literature concerning India at an empirical level. The remaining part of the paper is organised as follows: Section II presents an outline of the conditional CAPM theory, followed by some

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