ABSTRACT

This study examines three important research issues pertaining to volatility index for the Indian stock market: (i) it examines how the behavioural loss aversion principle can be used to explain the asymmetric volatility index-return relation; (ii) it explores the information content of volatility index in forecasting underlying stock market volatility; and (iii) it investigates whether volatility index can be used as an additional factor in the standard asset pricing model.

First, this study finds that there is a negative, asymmetric and non-linear relation between changes in volatility index and stock market returns, following behavioural loss aversion principle. Trading strategies can be developed using the volatility indices for profit-booking. For instance, a long position in decreasing volatility markets can be paired with a short position in increasing volatility markets. Like other measures of market sentiment, volatility index can be used to gauge investor sentiment.

Second, this study provides evidence that volatility index, due to its forward-looking nature, contains incremental information as compared to the GARCH family models in forecasting stock market volatility. The findings provide useful insights for market risk evaluation, options valuation and portfolio management. Volatility index could be used as one input (of many) for estimating the portfolio profit & loss distribution and portfolio VaR.

Third, this study shows that stocks' sensitivity to volatility index innovations is a priced risk factor during high volatility period, but not in low volatility period. Nevertheless, addition of volatility risk factor leads to marginal improvement in the explanatory power of the model to explain the variation of stock returns. The results of this study will help financial analysts and corporate financial manager in evaluating the performance of professionally managed portfolios.

This study contributes and extends the literature in several dimensions like dataset, theoretical constructs and methodological approach. It underscores the volatility indices of Asia-Pacific markets in general and India in particular. It proposes a behavioural explanation for the asymmetric volatility index-return relation, using loss aversion principle, under various volatility periods identified by Bai-Perron structural breaks test. As true volatility is latent and unobservable, the study constructs return-based realized volatility and range-based realized volatility from 5-minute intraday data. This study investigates pricing of volatility risk by incorporating factor-mimicking portfolio returns for volatility index as an additional explanatory factor over high and the low volatility periods.

Keywords: *Volatility index, Asymmetric volatility, Loss aversion, Information content, Volatility forecasting, EGARCH, Realized volatility, Fama-French model, Factor-mimicking portfolios for volatility index*