A Study of the Construction and Management of Optimal Portfolio

Abstract

The process of investment involves the construction and management of optimal portfolio. A perfect roadmap to achieve the investors predefined investment objectives can be designed through the selection of a proper model and an appropriate strategy to construct and manage the optimal portfolio. One of the approaches to construct the optimal portfolio is to use portfolio theory. This theory was pioneered by Markowitz in 1952. Theoretically, Markowitz model is considered as a superior approach in constructing optimal portfolio. However, it has hardly become an operational tool for portfolio managers and investors, since this model requires a large number of inputs and involves computational complexity. To overcome these problems, Sharpe (1963) proposed a model that requires fewer inputs and computational simplicity. The most important issue is whether the results of this simplified model are similar to those obtained using Markowitz model. In this study, performances of portfolios constructed using two approaches are evaluated for a period of 17 years from April 1995 to March 2012 in the Indian context. This period is divided into three sub-periods in order to analyse the behaviour of portfolios constructed in different time frames. The results of comparison of portfolios constructed using Markowitz approach and Sharpe single index model are economically in favour of Sharpe single index model in 2 out of 3 sub-periods. Overall, from the results of this study it can be concluded that except in terms of risk which is in favour of Sharpe approach, in other parameters of portfolio performance, there is no statistical difference between Markowitz and Sharpe single index model at five percent level of significance.

In the case of management of optimal portfolio, selection of an appropriate portfolio management strategy has always attracted the attention of the investors. Formulation of portfolio management strategies are based on two broad choices, namely, active and passive portfolio management strategies. Among various strategies applied to manage the optimal portfolios, the buy-and-hold approach may be linked with a passive investment strategy and tactical asset allocation can be considered as a moderately active strategy. Tactical asset allocation can be considered as a minor form of market timing approach searching for investment opportunities through monitoring monetary, economic and other market indicators in order to take advantage of perceived differences in relative values of the various asset
classes. In addition, a number of studies support the predictability of security returns by economic and monetary variables. The probability of investment opportunities through tactical asset allocation and predictability of security returns by monetary variables have created a new research idea in the portfolio management on how one can exploit such information to earn economically significant excess returns by employing tactical asset allocation approach. In this study, the risk-adjusted returns obtained by buy-and-hold strategy and tactical asset allocation based on turning points in the monetary cycle are compared. The study of management of optimal portfolio reveals that tactical asset allocation based on monetary cycle turning points provides higher risk-adjusted returns over a buy-and-hold allocation, even after considering transaction costs. In other words, investors can earn profit in excess of a buy-and-hold approach through tactical asset allocation based on monetary cycle points.