7.1 INTRODUCTION

Recent changes in the investment climate have encouraged the investors to go in for more equity investment. An investor studies the share price behaviour and tries to obtain maximum returns for his investment through appropriate investment strategy and portfolio selection. This work is mainly concerned with the portfolio selection using different strategies for maximising the returns on equity investment. Since investors' preferences vary widely, portfolios are constructed using various classifications of securities and investment strategies. Evaluation of portfolio performance is also discussed.

The data used in the study consists of the following:

1. Monthly returns of 71 securities included in Bombay Stock Exchange National Index.

2. Monthly returns of Bombay Stock Exchange National Index (BSENI) and

3. Annual data on Earnings per share, Dividend per share, Book value per share and Market price per share of 71 companies.

The study covers a period of 10 years from January 1985 to December 1994 for portfolio selection and analysis. Share returns behaviour is analysed with 17 years annual data from 1975-76 to 1991-92.
7.2 ANALYSIS OF DATA

The first objective of the study is to analyse the equity share returns behaviour and this is accomplished by using summary statistical measures, frequency tabulation and stepwise cross section multiple regression techniques. 5 years moving average of explanatory variables are used to analyse the dependence of average market price on those variables through correlation and stepwise regression techniques.

Portfolio construction and selection strategies is the second objective of this study. The securities are classified on the basis of Homogeneity, Beta, Homogeneity-Beta, Volatility, Earnings, Price Earnings ratio and Market Capitalisation. After forming the stock universes, portfolios are constructed using Markowitz model along with the proportion of investment in each security. Similarly portfolios with equal weights of securities selected at random are also constructed. Portfolios totaling 75 are analysed using the following two different investment strategies:

1. Passive strategy and
2. Active strategy

For each strategy portfolio returns are calculated considering the dividends. Portfolios under active strategy are revised each year by changing the proportion of investment according to the ranking of security returns. Evaluation of portfolio performance becomes inevitable and hence portfolios are evaluated using the three different evaluation measures. Evaluation of performance based on year of construction, holding period and size of the portfolios as also undertaken.

7.3 ANALYSIS OF RESULTS AND FINDINGS

The results are summarised below along with the conclusions.
7.3.1 SHARE RETURN BEHAVIOUR AND DETERMINANTS OF EQUITY PRICES -
SUMMARY STATISTICAL MEASURES, FREQUENCY DISTRIBUTION,
CORRELATION AND STEPWISE MULTIPLE REGRESSION ANALYSIS

The summary statistical measures using monthly returns for
individual securities and BSE National Index are computed. The average
return of all the 71 companies are positive excepting for two companies.
The maximum average returns of 7.31 percent is found in ICICI with
highest coefficient of variations also.

The average returns of Bombay Stock Exchange National Index (BSENI)
is 2.04 percent with a standard deviation much lower than any of the
individual securities. From the average returns of the companies is
noticed that there are wide fluctuations in stock returns. The frequency
distribution of BSENI and individual securities reveals that nearly 90
percent of the returns lie between -8 to -4 percent and 8 to 12 percent
class intervals.

The fluctuations in stock returns and market policy are attributable
to many factors. Some of the variables like Earnings per share, Dividend
per share, Book value per share, 5 years moving average of earning per
share, dividend per share, book value per share and market price per
share are regressed to find their influence on average market price using
cross section stepwise multiple regression analysis.

The results of the cross section stepwise multiple regression reveal
that for a period of 13 years, earnings per share and Dividend per share
have significant effect on market price. Earnings per share and Dividend
per share for a period of 7 years and 5 years respectively explain the
changes in market price well.

The 5 years moving average of Earnings per share has significant
effect on the market price during 1982-83 and 1983-84 only. Book value
per share do not show any effect on market price at all in any of the years
under study. 5 years moving average of dividend per share and 5 years moving average of Book value per share show negative effect unlike the other variables. The correlation coefficient of these independent variables are positive. Hence, it is clear that the direct effect may be negligible and the same variable may have indirect significant effect since all these variables are interdependent to each other and hence omitted in the regression.

7.3.2 PORTFOLIO SELECTION AND ANALYSIS OF STRATEGIES

Firstly securities are classified on various basis. Based on these classifications stock universes are created. Portfolios are constructed from stock universes with the assumed returns ranging from 24 percent to 60 percent. Under various categories 65 portfolios are created with proportional weights and 10 random portfolios with equal weights.

7.3.2.1 PASSIVE STRATEGY

After the construction of portfolios, two strategies, active and passive, are adopted to study the performance of the portfolios. In the passive strategy, the portfolios of securities are purchased during January of each year and kept till December 1994. The portfolios are assumed to be disposed of at the end of December 1994. Such investments are for long term and long term investors can adopt such strategies for maximizing portfolio returns. Therefore the returns of all the portfolios over a period of 10 years are calculated and analysed. Among the 10 years, cyclical stocks with high beta portfolios provided maximum returns during six year holding periods and this portfolio return remained positive even when overall market had declined.

During depression, portfolios with negative beta and equal weight portfolios performed well. In the boom period, investors can concentrate on cyclical stocks with high beta portfolios whereas during bear market,
negative beta portfolios perform well. The returns from the long term investments are generally higher than the short term returns.

Though portfolios are formed on the basis of volatility, earnings, market capitalisation etc., the cyclical stocks with high beta portfolios excelled in performance in the buy and hold strategy over a period of 10 years in this study.

7.3.2.2 ACTIVE STRATEGY

This strategy aims at periodic realisation of returns. Portfolios are purchased in January of each year and sold in December of the same year. The returns of active strategy are analysed over a period of 10 years and the following results are obtained.

As in passive strategy, in active strategy also the cyclical stocks outperformed the other portfolios. Similar to that of buy and hold strategy, the cyclical stocks performed well during seven holding periods out of 10 periods from 1985 to 1994. As in passive strategy, cyclical stocks with high beta portfolios, provided high returns. Stable stocks with low beta portfolios also performed well in this strategy. In this short term investment strategy, the investor's forecasting ability and judgement play an important role. Hence it may concluded that cyclical stock portfolios yield higher returns in short periods.

7.3.3 PORTFOLIO REVISION

Since passive strategy do not provide room for revision, active strategy accommodates portfolio revision. A revision policy for 65 portfolios with proportional weights is followed. According to the revision policy, from the second year the proportion of the securities in the portfolio were changed based on the performance of portfolio components in the year.
It is observed that the revision of proportions prove to be beneficial in almost all the portfolios. The revision strategy had resulted in improvement of returns in many cases whereas in some portfolios the returns remained unchanged. This shows that revision of portfolios in the active strategy improves the return of almost all the portfolios. The returns were higher even when the market declined. Therefore investors can adopt the suggested revision strategy in order to maximise portfolio returns.

On a comparison of the passive, active and active with revision strategies with the help of total returns the following facts are revealed.

1. When passive and active strategies are compared, the returns provided by active strategies is about half of the returns provided by passive strategy.

2. Frequent disposal of portfolios under active strategy resulted in short term gains only. Total returns are lower than the passive strategy.

3. Revision of proportions of investment in active strategy has yielded better results.

4. But comparison of active strategy and active strategy with revision with the passive strategy show lower returns in both the above strategies. The performance of portfolios in active strategy with revision are similar to that of passive strategy in many holding periods.

7.3.4 PORTFOLIO EVALUATION

Evaluation of portfolio performance is essential in the process of constructing efficient portfolios. Evaluation aims at improving the portfolio
The performance of the active strategy and active strategy with revision are evaluated using the performance measures of Treynor, Sharpe and Jenson. Their reward to volatility, reward to variability and alpha measures suggest the efficiency of performance of portfolios.

The evaluation of portfolios not only identifies the best portfolio, but also considers the performance of all the portfolios. It compares the performance with the benchmark portfolio (market portfolio) and also reveals inefficient portfolios.

In the active strategy, evaluation is done for 6 periods each comprising various portfolios constructed during the same period. The measures of performance indicates that the performance of all the portfolios except two portfolios are good in the year 1985. Similarly the average returns are satisfactory in the years 1986 and 1987.

In the year 1989, the performance of the portfolios are not satisfactory. Only 50 percent of portfolios performed well. Their ratios and alpha coefficients are low and negative. Though random classification is followed in portfolio selection, the performance of all portfolios are not uniform. Hence an investor should concentrate on portfolios which provide high returns and positive evaluation results. During 1990 among 25 portfolios, 6 portfolios performed badly inspite of improved market trend which continued in 1991 also.

Portfolio revision yielded better results. Since equal weight portfolios are not revised, 65 portfolios are considered for evaluation. In 1989 the results are similar to the pre-revision since the proportion changes only from the second year. On an average, the performance of the portfolios constructed in the year 1986 and 1987 are better. The efficiency increased in the portfolios constructed during the year 1989.
Under the revision strategy, the level of efficiency did not show any change in 1990. All the three performance evaluation measures support the efficiency of portfolios constructed in 1991. The overall portfolio performance has improved under revision policy.

From the portfolio evaluation based on number of securities in a portfolio, it is found that the standard deviations of two security portfolios were higher compared to the portfolio with 10 securities. As stated by Fama in his work (1976), the returns are higher when the number of securities are increased and the portfolio standard deviation decreases. It is evident that all the three measures confirm similar results for Indian Market also. There is high degree of relationship among these measures. It is implied from the results that classification of portfolios and random selection of stocks increases portfolio efficiency. Passive (buy and hold) strategy enables investors to obtain higher returns than the active strategy.