CHAPTER II

REVIEW OF LITERATURE

Investment on securities is profitable as well as exciting. Over the years it is being observed that stock market is rapidly affected by any happening in the political, social or economic scenario and stock prices instantaneously reflect the change. This instant availability of information has prompted an assumption that no study of stocks and careful selection should prove to be a better help over random stock selection. This is because all the effects of data being studied are already available to every market participants and this is the underlying concept of Efficient Market Hypothesis (EMH) evolved in 1960 by Eugene Fama.

Fama (1970) has categorized market efficiency in to three different forms: weak, semi-strong and strong form, based on information set that is fully reflected in security prices. In the weak form of efficiency, security prices fully reflect the information content of past prices and volumes. Semi-strong market efficiency utilizes all historical and current prices as well as any publicly available information in pricing financial assets.

Under strong form market efficiency security prices fully incorporates both public and private (insider) information. For the purpose of this study, researcher has focused only on weak form and semi-strong form of market efficiency.
2.1 Market Efficiency

Numerous studies and tests have been conducted on all forms of EMH (Turan and Bodla, 2004). Many of these studies have indicated the departure from market efficiency. Bhanu Pant and Bishnoi T.R (2002) conducted a research on testing random walk hypothesis for Indian Stock market Indices. The analysis of the behaviour of daily and weekly returns of 5 Indian market indices for random walk during April 1996-June 2001 shows that the Indian stock market indices do not follow random walk. The results were based on the tests of Indian stock market indices for normality, autocorrelation using Q-statistic & Dickey-fuller test and also the analysis of variance ratio using homoscedastic and heteroscedastic test estimates.

Fama and French (1988) and Lo and Mackinlay (1988) gave evidence against the weak form of market efficiency. The results also indicated positive autocorrelation for weekly holding-period returns not only for the entire sample but also for all sub-periods. Parameswaran (2000), performed variance tests corrected for bid-ask spread and non-synchronous trading on the weekly returns derived from CRSP daily returns file for a period of 23 years. His results show that eight out of ten sorted portfolios do not follow a random walk. He observed that non-trading is not a source of serial correlation in large sized firms.

Kim, Nelson and Startz (1991) examined the random walk process of stock prices by using weekly and monthly returns in five Pacific – Basin stock markets. The findings provided evidence that the mean reversion was only a phenomenon of the pre-world war II period and not a feature of the post-war
period. They found that the variance ratio tests produced positive serial correlation.

Ramasastri, A. S. (2001), conducted a study on stock market efficiency, spectral analysis. This research studied the efficiency of Indian stock market since the beginning of 1996 to 1998 using a powerful technique. Spectral analysis, correlogram based on sensex establishes that Indian stock market has been efficient. Spectral analysis finds that there is presence of periodic cycles in the movements of share prices. Yet, confirms market efficiency as power functions flatten at higher frequencies. They have initially calculated that autocorrelation have been found to be statistically insignificant. Correlogram falls steeply and hovers around zero for k greater than 0 from correlogram and so concluded that daily sensex return series are at random.

Aman Srivastava (2005) in his studies concluded that market efficiency has an influence on the investment strategy of an investor because if market is efficient, trying to pick up winners will be a waste of time. In an efficient market there will be no undervalued securities offering higher than deserved expected returns, given their risk. In this paper, author had done a literature review and finally concluded the importance of the concept of EMH.

Rebecca Emerson, Stephen G. Hall (2004) and Anna Zalewska Mitura, (2004) said that the efficient market hypothesis is again being debated. There is an unprecedented growth in both existing and new financial markets. These new markets are often in economies which have just recently embraced free market economies and these stock markets can be termed as infant markets. Such stock
markets are obviously not efficient in allocating the supply of savings to productive capital. Researcher examined whether and how these markets are becoming more efficient. They proposed modeling the excess returns of individual securities using multi-factor model with time-varying coefficients and generalized auto-regressive conditional heteroskedastic (GARCH) errors. If the markets are becoming more informationally efficient or the agents are learning, they expect this to manifest itself as the time-varying coefficients becoming more stable as time increases. They tested the model using data on four Bulgarian shares.

I. M. Pandey (2002) concluded the seasonal patterns in Malaysian stock market using monthly return data of the Kula Lumpur stock exchange’s two indices-Composite Index and EMAS Index. He concluded that the return of December was positive and statistically significant in comparison to the returns of the rest of months.

The existence of abnormal profit opportunities had been examined for the period from 1992 to 1996 by Kakati (1997) and it was found that the Indian stock market, in general provided limited opportunities to earn abnormal profits during the study period. Further, aggressive and creative investors with distinct skills on fundamental and economic analysis were consistently able to earn abnormal profits, but with considerable residual risk. The study further revealed that chances of earning higher than or lower than the benchmark Sensex were almost equal for a randomly selected stock. Moreover, the study concluded that though the evidence regarding the efficiency of the Indian stock market was basically puzzling, the Indian Capital market seemed to be much closer to
efficiency rather than inefficiency. Kakati’s study was confined to only large stock companies.

Hassan and Naka (1996) suggest that in cointegrated markets, price movements in one market immediately influence other markets, consistent with efficient information sharing and free accessibility to markets by domestic and foreign investors.

Borges (2008) compares the behaviour of stock market indices of France, Germany, Greece, Portugal and Spain during the period 1993-2007. By using the daily and monthly returns and conventional methodologies i.e correlation, runs and MVR tests, the author finds that only monthly returns follow a random walk in all the equity markets considered.

Singh Tarika and Seema Mehta (2008) conducted a study to test the weak form market efficiency of Indian stock market and concluded that the movements in prices are not at random i.e. the market is not weak form efficient.

George Filis (2006) tested the efficiency level of the Athens Stock Exchange (ASE). The study period was from 2000 to 2002. The results of these tests enabled the researcher to argue that over the two years of the study, ASE was not efficient market as it suffered from volatility clustering.

Michael j. Seiler, David M. Harrison, Pim van Vliet, Kit Ching Yeung (2005), examined and compared stock returns and volatilities between state-owned (SO) and non-state owned (NSO) firms on the Shaghai and Shenzhen stock exchanges. Results vary significantly by exchange. Returns for both firm types, on both exchanges, exhibited negative skewness and high kurtosis
inconsistent with a normal distribution. Returns displayed significant autocorrelation even after the removal of lower–order effects.

Cheung K.C, Coutts J.A (2001), conducted variance tests with both homoscedastic and heteroscedastic error variances to examine the random walk hypothesis for the Hang Seng Index on the Hong Kong Stock Exchange. The empirical investigation led them to suggest that the Hang Seng follows a random walk model and the index is weak form efficient.


2.2 Momentum and Contrarian Strategies

Contrarian and Momentum strategies have been studied in different markets all over the world. Regardless of the reasons many such studies have concluded that contrarian strategies could produce superior returns. There are situations where some investors in the stock market overreact to good or bad news. Such reactions would lead to overpricing or under pricing of stocks. Sometimes investors become over excited and they purchase in bulk, those
stocks which have done well in the past which ultimately lead to overpricing of such stocks. Stocks become under priced when investors over react to those which have performed very badly in the past. Contrarians bet against such immature investors.

Lakonishok, Shleifer and Vishny (1994) provide evidence that the value strategies yield higher returns because these strategies exploit the sub-optimal behaviour of the typical investor.

Mun, Vasconcellous and Kish (1999) find evidence that for both the French and German markets, Short term contrarian portfolios work best. As per the study profits are obtained in the short run and the profits decrease over time.

In a study conducted by Jegadeesh and Titman (1993) states that momentum strategies i.e. to buy stocks that have performed well in the past and sell stocks that have performed relatively poor in the past can generate extra-normal returns over the 3-12 month horizon. These findings were based on US market.

Sehgal Sanjay and Balakrishnan I (2008) had conducted a study to find out whether there exist momentum patterns in Indian Stock returns and suggested that there are rational sources of momentum profits in the Indian environment. The findings of the study were in contrast with those of the US where the momentum explanation is titled towards delayed price reaction to firm-specific information. The study was a step towards resolving the momentum controversy in the Indian context.

Contrarian and Momentum strategies in the Indian stock market have been studied by Narasimhan M S, Govind Agarwal and Mragank Jain (2004). The results of the study show the presence of trends and to a minor extent trend reversals in the market, which investors and institutions can exploit by developing appropriate momentum and contrarian strategies. The paper analyses that for smaller holding periods i.e. from one to four weeks contrarian profits are observed but these profits were not statistically significant. The incidence of contrarian profits decreased as holding period increased. As per the study, momentum strategy gave returns when the formation and holding periods are longer. It also observed that momentum strategy would be useful even for a smaller holding period of two weeks if the modeling period is longer.

Chan, Jegadeesh and Lakonishok (1999) find positive evidence on the existence of momentum strategy and observed that market is slow to incorporate the full impact of information in its valuation. However, Liu and Lee (2001) find no evidence for profitable opportunity using momentum strategy in Japanese markets.

Shen Q, Szakmary. A.C and Sharma S. (2005), investigates linkages between value versus growth investment styles and momentum strategies in International markets and find the evidence of profitability of momentum strategies.

Simlai Pradosh (2009) evaluated momentum and contrarian strategies for technology stocks during excessive speculation. The study period was second quarter of 1995 to the first quarter of 2000, the period when stock market representing technology sectors witnessed a phenomenal increase in their value in the western nations. The sample consisted of daily stock return at of technology stocks obtained from Center for Research in Security Prices (CRSP). The results of the study revealed that contrarian strategy is preferable compared to momentum strategy for any portfolio size and bid-ask spread. Also, the buy bottom strategy always out performs and provides an average return higher than the benchmark portfolio average return.

Rastogi, Chaturvedula & Pavan (2009) in their paper studies the momentum and overreaction phenomena in the Indian equity markets. The study also takes in to consideration the effect of size by sorting the sample by market capitalization and dividing it in to low cap, mid cap and high cap categories. The study finds strong evidence for the presence of momentum in all the categories, but weak evidence or the presence of overreaction in the low and high cap stocks. As per the study, mid cap stocks had demonstrated strong overreaction. They also tried to explain the results on the basis of investor psychology.
Zarowin (1990) show that size effect can explain the overreaction hypothesis which was not accounted for by Debondt and Thaler (1985). According to him after controlling for size the overreaction disappears. Furthermore, when losers are smaller they outperform winners and when winners are smaller they outperform losers. Thus he concludes that the tendency for losers to outperform winners is due to the fact that loser firms are typically smaller than winners.

However, Chopra et al. (1992) shows that after controlling for size or beta, over reaction gets reduced but still remains. Since the over reaction effect reported in their study is much more prominent for smaller firms than for large firms, they hypothesize that individuals, the predominant holders of stocks of small firms may over react while the dominant holders of large stocks namely institutions do not.

Baytas and Cakici (1999) indicate that long-term investment strategies based on price and size produce higher returns than those based on past performance. The study argues that many of the long term price reversals observed in value strategies may be due to price and size effect.

Griffin et al. (2003) in his study finds that momentum profits are largely significant around the world, although for Asian countries the evidence is the weakest. Avizinis and Pajuste (2007) studies stock return continuation within seven Central and Eastern Europe countries and find that all of them, except Poland, exhibit return continuation when using 3, 6, 9 and 12 month momentum strategies.
Pan and Hsueh (2007) in their study on momentum trading strategies to the stock market indices of twelve European countries and the US finds evidence of significant momentum profits.

Michello & Chowdhury (2006) investigates the presence of momentum profits on the Indian stock market over the period 1991-2006. They find no observed momentum profits or return reversals when simple non-overlapping medium-term and long-term strategies are considered. The study reports significant momentum profits in higher market value and higher turnover portfolios for 6-6 strategies. Results revealed return reversals for 3-3 strategies of winner-loser portfolios when they sort small and low trading volume firms by market value and turnover criteria, respectively. They also find return reversals for 1-1 short-term strategy for all winner-loser portfolio combinations.

Joshipura (2008) finds evidence of the presence of contrarian returns in Indian markets. The study is based on the monthly return data of listed companies on NSE for the period of 1995 to 2008. The results show an evidence of momentum profits for shorter periods of six months and one year, whereas contrarian returns are evident in a longer test period of three years. It is also found that the presence of momentum and contrarian returns cannot be associated with risk adjustments only. The study provides enough evidence against weak form of market efficiency-which claims that superior returns cannot be produced on the basis of investment strategies based on historical data and if any such returns are earned it may be a mere compensation for the higher risk taken. The study confirms the behavioral explanation of overreaction due to activity of momentum traders followed by reversal in long run. The study
provides evidence of overreaction led momentum profits in short run followed by contrarian profits in long run.

Hong and Stein (1999) in his study presents a model that is based on initial under-reaction to information and subsequent overreaction, which eventually leads to stock price reversal in the long-run. The model employs two types of investors, "news-watchers" or “fundamental analysts” and "momentum traders” or “chartists”. The news-watchers rely purely on their private information; momentum traders rely exclusively on the information in past price changes. Hence, price is driven initially by the news-watchers as they receive and react to their private information as soon as they come. Then, the news gradually gets transmitted to the market where chartists may get breakouts on their charts and react to the news, which leads to initial under-reaction till the time momentum traders are not reacting to the news and subsequent overreaction when momentum traders react to the news. However, as per the study in long run overreaction disappears and price reverts to its fundamental.

Locke & Gupta (2009), in their recent study on the application of contrarian strategies in the Bombay Stock Exchange (BSE) concluded shedding further light on competing explanations underlying this anomaly. The test portfolio earned a contrarian profit of 74.40 per cent above the market return. Second, risk differences between Winner and Loser portfolios are found to be an independent phenomenon. Third, the size of the firm appears to play a vital role in explaining the overreaction hypothesis as per their study.
Zhu (2007) conducted a study using daily data on Hang Seng Index over the sample period of December 31st 1986 to October 6th 2006 and found evidence of stock market following extraordinary price movements in a single trading day.

He found that investors in Hong Kong stock market tend to underreact to good news and overreact to bad news. As per the study, this behavioural tendency on the part of investors cause stock prices to overshoot at arrivals of bad news and undershoot at the arrival of good news. Zhu observed this as a phenomenon more likely to be observed in markets where quality of information is generally poor and lack of precision.

Ryan & Curtin (2006) investigates the profitability of price-based momentum strategies in the Asian markets. The authors find that unrestricted momentum strategies are not profitable. Using the benchmark 6-month formation period/6 month holding period strategy, the authors find that although returns are in the expected direction (i.e., past winners outperform past losers), they are not statistically significant. In addition, the statistical significance is not improved when the authors control for size and country effects. Interestingly, fourteen of the sixteen trading strategies generate unexpected negative returns, suggesting that past losers outperform past winners. In ten of these fourteen cases, the returns generated are statistically significant. The authors' results represent challenges to those researchers trying to reconcile within a unified framework short-term momentum and long-term overreaction in equity markets.

Urrutia & Joseph D (2001) empirically investigates whether momentum strategies applied to past returns of national stock indices generate profits. Emphasis is placed in emerging capital markets of Africa, Asia, Europe, Latin
America, and the Middle East. We find that the extra returns from momentum strategies are larger for emerging markets than for developed markets. They also find that momentum profits are higher in the pre-market liberalization period than in the post-liberalization period. They assume that the higher momentum profits generated by emerging markets are due to market isolation and that market liberalization reforms introduced in these countries tend to reduce the profits from momentum strategies.

However on the other hand Fama & French (1996) argue that value strategies are fundamentally riskier i.e. investors in value stocks tend to bear higher fundamental risk and their higher average returns are simply compensation for this risk.

Review of literature reveals that, recently, only very few studies have been conducted in the Indian context taking care of the recent changes that has occurred in Indian Stock market. Moreover, from the review of literature it is very evident that there is lot of contradictions regarding the findings of these studies.

Disagreement regarding the Efficient Market Hypothesis in the Indian context has also necessitated the need for further research in this area.

2.3 Interdependency of Indian Stock Market

If in a market globalization is impossible to resist, then interdependency between countries and markets becomes an important subject to be studied. Stock market integration undoubtfully plays an important role in the development of a country. It is this degree of correlation among the returns of
securities which decides whether an investor is going to have any gains by diversification of portfolio across different markets. Hence an investor would be interested to know the level of integration and interdependency of the country’s stock market with other world markets.

Various studies have been undertaken by in different markets to analyse the interdependency of stock markets. Riedel (1997) explained that a country is integrated in to world capital markets if capital is free to move in out of the country and the country’s assets are substitutes for those of other countries. Bekaert and Harvey (1995) defined market integration in his study as markets are said to be completely integrated if assets with the same risk have an identical expected return irrespective of the market. Law of one price mechanism can be very well quoted as the common feature of integrated markets.


Handsia and Ray (2002) examine the causality between NASDAQ and Bombay stock exchange and found that there exists strong correlation between dually listed stocks and interdependence of companies, which have floated American Depository receipts.

Johnson and Soenen (2002) find that the equity markets of Australia, China, Hong Kong, Malaysia, New Zealand and Singapore are highly integrated with the stock market in Japan. Kumar (2002) in his study confirmed that stock
index of Indian stock market was not co-integrated with that of developed markets.

While investigating through all these literatures, researcher found lack of recent studies conducted in Indian context examining the market interdependency with other emerging countries.

Researcher believes that further study in the Indian Stock Market will add to the existing body of knowledge of this important emerging market, which has unique features and characteristics and a long history in South Asia.

The present study has been undertaken keeping in mind these unsettled, inadequately explained and insufficiently explored issues.