CHAPTER VII

FINDINGS AND CONCLUSIONS

The capital market is the barometer of any country’s economy. A developed capital market helps in efficient capital formation. They help in channelising the savings to right investments. The essential functions of a well-organised capital market include:

- Increasing the rate of real savings and capital formation of a country.
- Increasing net capital inflow from abroad
- Raising the productivity of investment by improving allocation of funds
- Reducing the cost of capital in the country.

Capital markets across the world changed radically. There was a transformation in the financial intermediation from a credit based financial system to a capital market based system. This has led to the increasing significance of capital markets in the allocation of financial resources for meeting the needs of country’s growth plans.

Indian capital markets have also experienced sweeping changes since the beginning of the last decade. India had a progress which was much faster than many other emerging countries. Its market infrastructure has grown to international standards with in this short span of time. Major transformations of the Indian capital took place after 1992, after the introduction of financial sector
reforms and currently sensex is hovering around 17000 mark. Today, India has become a world class financial centre.

Recent years witnessed significant reforms in the capital market. Trading platforms have become automatic, electronic, anonymous, order-driven, nationwide and screen-based. Speed and efficiency have become hallmark of the current system. On any trading day, more than 10,000 terminals come alive, in around 400 towns and cities. Information is flashed on real time basis which provides equal opportunity for all concerned to access the information.

Market has become more transparent in respect of dissemination of information, price and quantum of the order. Today laptops, palmtops and hand mobiles challenge the relevance of the brick and mortar system.

The trading cycle has been shortened to T+2. This shortening of the cycle has been done in a phased manner from T+5 to T+3 to T+2, all in the last two to three years. Another material improvement, which proved to be of immense relief to the investors in India, was the dematerialisation of the shares. Now more than 95 percent of the shares in the market are dematerialised.

The inconvenience due to the physical custody and the risks of non delivery and the chances of forgery and frauds have virtually disappeared .This has benefited in bringing down the transactional cost. Badla system or ALBM stands has been abolished to create more investor friendly environment .Hedging opportunities are provided to Indian investors by introduction of many derivative instruments.
Risk management system of stock exchanges, on-line monitoring of margins and positions, faster clearing and settlement system all these have made Indian capital market now questionably world class. Indian market is better than many other developed markets in terms of transparency, efficiency and safety.

7.1 Findings and Conclusions

Economic growth of a country greatly depends on capital market. More efficient is the capital market, the greater is the promotion effect on economic growth. It is, therefore, necessary to ensure that our capital market is efficient, transparent and safe.

Government of India along with SEBI has been continuously trying to improve market design in order to bring in further efficiency and transparency to market. Newer and newer products were introduced to meet the varying needs of market participants, while protecting interests of the investors. Some of the recent measures adopted in Indian capital market includes setting up a central listing authority to dynamise listing requirements and facilitating demutualization of stock exchanges, operationalising T+1 rolling settlement, consolidation of exchanges and other market participants and rationalising margin trading, securities lending and short selling.

Three main sets of entities depend on India’s securities market. They are corporates and government bodies who raise resources from the securities market for their expansion and development activities and the investors both institutional and retail category who invest funds to get better returns. As per 2001-02 statistics there were about 20 million investors who have invested in securities
market, when Rs. 226,911 crores was raised by corporate sectors and government bodies.

This underlines the need for further improvement in the working of Indian securities market. Such measures should bring more transparency and further efficiency with the aim of protecting the interests of the Indian investors.

The subject of investors protection has attracted the attention of a number of researchers both nationally and internationally. In their study Porteaba and Samwich (1995) and Morci, Shleifer and Vishny (1990) concluded that people use stock market as an indicator. Matsuaska and Sbordone (1995) finds that investor confidence does have a positive correlation with Gross National Product. (GNP).Many other studies have concluded that investor confidence has a strong relationship with the stock market as well.

Otoo (1999) finds the influence of stock prices on consumer confidence and found positive effects. The evidence of the predictive power of investor sentiment had been found by Chopin and Darrat (1999) also. These literatures have helped in understanding the financial anomalies in predictability of stock returns. Many empirical studies have found out that the stock returns are predictable both cross-sectionally and over time. Broadly speaking, this dissertation investigated whether the empirical patterns in Indian stock returns are consistent with an efficient capital market.

### 7.1.1 Indian stock market efficiency

Market efficiency is often studied under three broad headings: allocation efficiency, operational efficiency and informational efficiency. While allocation
efficiency ensures the highest risk-adjusted returns for capital inflows, operational efficiency ensures that transactions in a financial market are completed on timely basis with the maximum possible accuracy and at the lowest possible cost.

Efficient market hypothesis (EMH) mainly states the informational market efficiency. In an efficient market the prices of securities fully reflect all available information. As per this theory the possibility of making superior returns from efficient market using information is absent.

The EMH have again categorised the informational efficiency in to weak-form, semi-strong form and strong form. Efficient market hypothesis (EMH) in the weak form claims that all past prices of a stock are reflected in today's stock price. Therefore, technical analysis cannot be used to predict or beat the market. Semi strong efficiency as per EMH (Efficient Market Hypothesis) implies that all public information is calculated into a stock's current share price. So neither fundamental nor technical analysis can be used to achieve superior gains from the market. The strongest version of market efficiency is the so called strong form of market efficiency. It states that all information in a market, whether public or private, is accounted for in a stock price. Not even insider information could give an investor the advantage of gaining superior returns.

The study had investigated in to the weak-form and semi strong form of informational efficiency of Indian stock market. The sample includes the daily closing price of all the shares included in the formation of Nifty Index. The study period was from 2004-2009. The results of both non-parametric (Kolmogrov –
Smirnov goodness of fit test and run test) and parametric test (Auto-correlation test) provide evidence that majority of the share prices of companies included in the study do not follow random walk model. The significant autocorrelation coefficient at different lags reject the null hypothesis of weak-form efficiency. So the researcher had to reject the null hypothesis that Indian Stock Market is weak form efficient. The empirical evidence suggests that Indian stock market is weak form inefficient.

These results were consistent in different sub-sample observations and for individual securities. The issues are important to security analysts, investors and to security exchange regulatory bodies in their policy making decisions to improve the market condition. The results also highlight the importance of considering market ecology and of adopting appropriate modeling procedures and investment strategies to fully exploit information contained in market prices.

The rejection of null hypothesis that the market is not Weak form efficient can be interpreted as that price forming information in Indian market may not be disseminated rapidly because of sophisticated communication technology, and lack of intensive market regulations. Indian markets can reduce the exploitation of the profitable trading rules by increasing the number of listed securities, by increasing the trading volume and also by attracting more and more investors into the capital market.

In the second part of this study researcher presents the results of the test of Semi-strong form efficiency of Indian Stock market. If the results give evidence that share prices do not react adequately and quickly to the various information, it
means that the market offers opportunities for earning superior returns. However, results of the study gives evidence for Semi-strong form efficiency of Indian stock market. Residual returns of all the companies during the study period had a value near to zero. The results indicate that though the market is providing scope for high returns in the recent times due increased participations of foreign investors and through reduction of transactional cost, the opportunity to make abnormal profits is very limited. The results of this study are in line with many other previous studies conducted in the Indian market. Studies conducted by Kakati and Saikia (2009), Kakati (1997), Das, Pattanayak and Pathak (2008) all concluded stating Indian market is efficient in the Semi strong form.

The reason for such observation could be that most of the companies included in the present study are large firms which are included in the construction of Nifty Index. These firms are automatically subjected to greater attention by the investors in the market. So the publicly available information or fundamental information gets incorporated in to the share prices very quickly. The results could be different for smaller or non popular companies.

The study period of this research was from 2004 to 2009 which included a time span in which Indian Stock market was severely affected by Global Financial Crisis. So the researcher had taken an effort to test the market efficiency of Indian markets during this recession period. Period of study was from October 2007 to April 2008 i.e. the time span in which Indian markets were rigorously hit by global financial crisis. Daily closing prices of these shares were considered for the analysis.
The results of the study indicate that the Indian stock market was Weak form inefficient during the study period. So the chances to earn abnormal returns by studying the past share price behaviour existed in Indian market even during the crisis. However the test results supported Semi-strong form efficiency of Indian stock market during the period of extreme financial crisis in India.

There was no evidence of gaining significant abnormal returns from Indian market. Hence the researcher accepted the null hypothesis ($H_0$) that Indian markets were efficient in the Semi-strong form during the study period.

The answer to the question whether stock market is efficient or not is very important from the viewpoint of policy makers and other regulators. The reason is only an efficient market can have potentially significant contributions to the country’s economic development. Such efficiency only can promote higher savings, more efficient allocation of surplus funds and better utilisation of available resources.

An efficient market reduces uncertainties and enables appropriate investment choices, whereas in an inefficient market information will be limited, in many cases unreliable and does not adjust instantly to share prices. This makes sound investment decisions much complicated.

Uncertainty in the market will also reduce capital supply in the country which will trigger future growth. Broadly it can be said that if market is efficient, the amount of government intervention required is very less.

For investors in Indian stock market, stock market efficiency is important because it is the deciding factor for the use of various security analysis tools like
technical analysis or fundamental analysis in making abnormal returns from the market. If the market is efficient, all what an investor can do is to buy the security and hold it for a long time. Basics of technical analysis or fundamental analysis will never help him in making excess returns, rather than incurring additional transaction cost and cost of obtaining information.

7.1.2 Momentum and Contrarian strategies in the Indian Stock Market

Momentum and contrarian are two traditional investment strategies that have captured tremendous interest of academicians as well as in investment professional. These strategies are motivated by behavioral theory of under reaction and overreaction to news passed on to the financial market. The attractiveness of these two strategies is because of their simple trading rules. Momentum strategy is based on price continuation and contrarian is based on price reversals.

Investors following momentum strategy buy past winners and sell past losers whereas those following contrarian strategy sell past winners and buy the past losers. Generally speaking, in developed countries, many studies have confirmed the existence of momentum strategy and found contrarian strategy to be more efficient during long-term period. However, no consistent evidence about momentum strategy and contrarian strategy has been found in emerging markets.

A test of return predictability has important implications in security pricing in an inefficient capital market. According to the efficient market theory, investors cannot earn extra returns without bearing extra risk and using historical
stock prices does not help investors to earn extra returns, as stock prices move at random.

The special characteristics of emerging capital markets like thin trading volume, low liquidity, less informational efficiency, rational investors, and also having low correlation with other emerging markets and developed market, one can expect more return predictability or inefficiency in these markets.

As a first step researcher had tested the market efficiency of Indian stock market and found that Indian stock markets were weak-form inefficient during the study period. It means there is scope for investors in India to predict future prices based on historical prices.

Next step was to test the efficiency of two technical analysis tools in predicting future returns. The aim of this study was to demonstrate the contrarian and momentum investment strategies, their profitability in Indian stock market and reasons explaining their existence.

For testing the effectiveness of the two investment strategies namely momentum and contrarian, entire study period was divided in to various formation periods of one month each for forming the momentum portfolio and contrarian portfolio. Daily returns of the shares included in the construction of Nifty index and whose data which was available for the whole 6 years were taken for the study. So the sample size was 29 companies shares

The study results revealed that there does not appear any merits to the momentum and contrarian strategies as technical analysis tools in Indian Stock
Market. These results were different from many other developed markets. Empirical studies had revealed the possibility of making superior returns using these two strategies in those markets.

Stock prices contain some predictability. Results of this study also support the Weak-form inefficiency of Indian stock-market. So Investors are left with opportunity to make excess return by studying the historical prices, However, this has to be done in a way that it compensates for the transactions costs of trading.

Researcher had also analysed the efficiency of momentum and contrarian investment strategies in predicting future returns during the time period in which Indian markets were severely affected by the global financial crisis. The period under study was 2007 October to 2008 April.

Empirical results gave evidence that there does not appear any merits to the momentum and contrarian strategies as technical analysis tools in Indian Stock Market even during recession period. So the researcher had to accept the null hypothesis (H₀) that momentum and contrarian strategies do not give superior returns over the bench mark.

Both these strategies i.e. momentum and contrarian strategies unfortunately involved high degree of turnover because the portfolios have to be reconstituted frequently. These strategies also incur substantial transaction costs. So it remains to be seen whether they would be profitable in Indian market after such costs are fully accounted for.
7.1.3 Interdependency of Indian Stock Market with other Emerging Markets

Globalisation and liberalisation have stimulated the concept of integrated financial markets between countries and thereby integrated stock market movements also. This increased interdependency will have impacts on global investors also. It is this degree of correlation among returns of securities as well as those of stock markets which decide whether an investor is going to have any gains by diversification of securities and markets.

In integrated stock markets identical stocks will trade at almost equal prices both in domestic and foreign markets. In such case portfolio diversification would not generate required gains. Hence, interdependency of Indian stock market with other world markets would be important for investors in India. They would be interested to know whether portfolio diversification across global stock markets would generate desired gains.

So an empirical study had been conducted by the researcher with the objective of analysing the interdependency of Indian equity market with that of the rest of the world, especially among different Asian markets.

Researcher tested interdependency of Nifty Index movements with Shanghai Composite Index, Hangseng index and Nikkei Index from 2006-2009 using simple correlation technique.

Results provide evidence for correlation among market movements of Nifty Index with the other three markets studied. The study had to reject the null hypothesis (H₀) that there is no interdependency of Indian Stock market with other emerging stock markets.
So from the portfolio diversification objective, investors cannot benefit from arbitrage activities in the long run. If the results of this study, regarding the influence of the other three stock markets are extended and contrasted with the previous studies included in literature, it can be concluded that the interdependencies among the stock markets in the emerging countries have increased over the years. This could be because of liberal foreign policies in the recent years and lowering of barriers for foreign institutional investors. It also accounts for the recent de-regulation measures adopted by the government in the domestic market.

The benefits which Indian capital market can expect because of this growing interdependency with other world markets is that the market would become more efficient in allocating resources and mis-pricing prevailing in the market will come down. This would lead to better informational and operational efficiency of Indian Stock markets.

At the same time these developments in the international markets will pose severe challenges before the policy makers and regulators of the country. These interdependencies can inculcate financial distress or crisis in the domestic economy from other economies as it had happened in the recent global financial crisis. So it would be desirable if further policy measures are taken in India towards controlling the level of stock market integration by tightening or lessening the factors affected by the impediments. However such measures should be considered with the expected cost benefit for Indian economy. This requires a better understanding about the degree of consequences of stock market integration.
7.2 Recommendations and Policy Implications

1. The inefficiency of Indian stock market in the weak form also implies financial and institutional imperfections. It also pinpoint towards the fact that countries liberalisation, deregulation and privitisation policies have generated some level of instability in the market. Weak-form market inefficiency in India is most likely to be caused by inappropriate policy choices. Regulators have to take in a long run vision while formulating and implementing policies and programmes for Indian capital market.

2. Indian markets can reduce exploitation of the profitable trading rules by increasing the number of listed stocks and trading volume.

3. Opening up of markets to more foreign investors can bring more efficiency in the market. It can also bring down the cost of capital.

4. Considering the current growth of Indian stock market, the country would need larger and specialised investment institutions to handle and organize complex financial information.

5. Indian market requires more financial products to attract investments in to stock markets.

6. Investor educational programmes have to be given more importance in order to attract potential investors in to stock market. Currently less than 5 percent of Indian population is only engaged in capital market activities.

7. India’s regulators have been active in seeking ways to develop the country’s financial markets, and a in introducing greater risk
management. However persistent reforms in the sector only can support India’s already impressive growth trend in the coming years.

8. An important objective of reforms in India has to be integrating the various segments of the financial market for bringing about a transformation in the structure of markets, reducing arbitrage opportunities, achieving higher level of efficiency in market operations.

9. Regulators should ensure stability and integrity in the market. Prompt actions have to be taken in cases of severe volatility in the market. This would boost the investor confidence in the Indian stock market.

10. Market should have better operational and informational transparency.

11. Investors are recommended to make systematic study before going for investments in stock market. They should never let greed control their investment decisions.

12. Credit rating has to be made mandatory for all capital market instruments.

7.3 Areas for Further Research

1. Market efficiency as a research topic deserves a continuous study to reach an ultimate conclusion about the level of efficiency of emerging markets like India market. The sample selected for this study was those companies involved in the construction of Nifty index. These firms are automatically subjected to greater attention by the investors in the market. So the chances of publicly available information or fundamental information getting incorporated in to these share prices very quickly are high. The
results could be different for smaller or non popular companies. Separate studies on market efficiency by considering characteristics of each industry and taking care of market capitalisation of different companies under study (like classifying them in to large cap, mid cap, small cap) would be advancement in the current topic under discussion.

2. The present study finds no evidence of gaining superior returns by using momentum and contrarian strategies in the Indian Market. However there are many questions still remained to be answered for India. These include “Is there any difference in momentum return patterns for different sectors in the country”, “Is there any difference in contrarian return patterns for different sectors in the country”. Studies conducted in similar area can give further evidence to the efficiency of these two technical analysis tools in the Indian market. NSE sectoral indices can be used for such studies.

3. There are many studies which were conducted in different markets for analysing the factors which can improve market efficiency. However attempts made in Indian context are very few in number. Separate studies taking in to account the economic and financial conditions of the respective country only can give constructive suggestions and recommendations for the policy formulators of the country. So the present study identifies this area as a future endeavor for researchers interested in this field.
4. Growing globalization and liberalization in the country, would promote greater integration between world markets in the coming years. So further research can be taken up for evolving policy prescriptions needed to protect the country from external crisis being inculcated in to the domestic market.