Chapter-II

Review of Literature
CHAPTER II

REVIEW OF LITERATURE

Capital formation is an integral part of economic growth and development and it plays an important role in the economic theory of production and distribution. It is assumed that capital accumulation can facilitate faster rate of economic growth. Traditionally economic growth rate depends upon growth of industrial, agricultural and service sectors but stock market has also become one of the major contributors for capital formation and has straight impact on the economy across the world. Stock market in developing economies such as India is also growing very fast and it is estimated that Indian stock market is a trillion-dollar industry. Recently the Indian stock market is witnessing heightened activities and is increasingly gaining importance.

Market capitalisation makes a remarkable contribution to company’s management, index calculation, classification of companies, a desideratum for the investment strategies for investors and measuring the overall growth of the stock market. Many studies have been undertaken, and various models have been designed and put into effect. A brief account on the available literature pertinent to the present study is presented in this chapter. The review of related literature is made to bridge the gap left by the earlier researchers.

The review has been made from a variety of sources namely books, journals, newspapers, magazines websites, unpublished research theses, researches conducted by consultants etc. The review of literature examines the areas, (1) market capitalisation and firm’s performance, (2) market
capitalisation and macro economic factors, (3) Corporate firm’s performance and (4) Macro economic factors.

Market capitalisation and firm’s performance

Ko Kenneth (2009) used multiple regression analysis to determine which of the several important factors yielded the best model for market capitalisation. The factors included brand value, dividend, price to sales ratio and forward price earnings ratio. He found that brand value had the highest correlation with the market capitalisation and the brand value of smaller companies had a stronger relationship with the market capitalisation than the bigger companies.

Kumar and Denish Shah (2009) developed a framework to link customer equity (CE) (as determined by the customer lifetime value metric) to market capitalisation (MC) (as determined by the stock price of the firm). The authors tested the framework in an empirical field experiment with two Fortune 1000 firms in the business-to-business and business-to-consumer contexts, respectively. The findings showed that (1) a Customer Equity based framework can reliably predict the Market Capitalisation of a firm and (2) marketing strategies directed at increasing the Customer Equity not only increase the stock price of the firm but also beat market expectations.

Maurice et al. (2009) examined the relationship between the liquidation values of a firm’s fixed assets and the firms’ market capitalisation. Book value had served as a reasonable predictor of market capitalisation in numerous accounting and financial studies, and this study offered an alternative predictor which exhibited an enhanced relationship. The significance of this relationship
was demonstrated by making a comparison between the book value of a firm’s fixed assets and the firm’s market capitalisation.

Oluwatoyin Matthew and Gbadebo Olusegun Odularu (2009) focused on the impact of company shares on their performance using one of the largest confectionary companies in Nigeria. The study analyzed the effect of the company’s performance in terms of turnover, profit after tax and other such variables and the impact of these variables on the market capitalisation. Using ordinary least square analytical technique for 20 year data, the study found out a positive relationship between the value of the company’s shares on the performance and similarly performance of the company and its value in terms of market capitalisation also has been validated.

Surajit Bhattacharyya and Arunima Saxena (2009) analysed the manufacturing firms’ data from the Steel and Electrical & Electronics (EE) sectors for the period from 2004-05 to 2006-07. The results showed that the firm’s size affected current profitability: positively in the Steel sector and negatively in the other. Bank credit was found negatively significant in both the industries.

Market share of firms and industry concentration ratio were the other significant determinants of firms’ performance. Firms’ market value was found positively significant for both the industries. This signified that high market value of firms reflected their goodwill, knowledge stock and prospective investment opportunities which positively influenced the firms’ performance. Interestingly, the impact of size was affected by firms’ market value: firm size positively affected profitability both in Steel and EE.
Agustinus Prasetyantoko and Rachmadi Parmono (2008) analysed 238 listed companies in Jakarta Stock Exchange for the period 1994 – 2004 using panel data. The main findings of the study were that the size was positively related to the firm’s profitability but it was not related to market capitalisation.

The results also showed that the ownership factor weighted heavily on a firm’s performance by proving that firms with predominant foreign stake saw much higher performance in both measurements namely Return on Assets (ROA) and Market Capitalisation Growth than domestically owned firms.

A study by Prasetyantoko A and Rachmadi Parmono (2008) spotted out the factors determining corporate performance of listed companies in Indonesia especially in the aftermath of the 1997 financial crisis. The study concluded that a firm’s size was positively related to firm’s profitability, but it was not related to market capitalisation. It implied that the size of a firm mattered more on the fundamental value of the firms but it could not be an important variable for market value of the firms.

By employing panel data of 238 listed companies in Jakarta Stock Exchange (JSX) in the period 1994-2004 as the sample, the study established that macro factors were more significant variables inducing firm performance than the firm-specific factors. Results also indicated that ownership factor mattered significantly on the performance of a firm by demonstrating that firms with majority foreign ownership registered a higher performance on both measures viz., return on asset (ROA) and market capitalisation growth than the domestically-owned firms.
Sabina Yasmin and Mohammad Abu Yusuf (2008) stated that although market capitalisation was important as a financial development indicator, it remained relatively less discussed in investment decisions. The author discussed what Market Capitalisation does mean and highlighted the methods that were in use in determining market capitalisation. It also demonstrated how market capitalisation (known as market cap) was measured in the Dhaka Stock Exchange.

A formula is developed for calculating market cap of a stock market under full market capitalisation method. This paper showed that the number of shares issued and price change were the two main factors responsible for changes in market capitalisation. The importance of market cap in measuring index, taking cross country investment decisions and its relevance for institutional investors had also been explored in the paper.

The creation and monitoring of the fundamental value of a company, the methods of its valuation, and capital market responses to changes of the fundamental value were investigated by Olexandr Kravchenk (2007) using discounted cash flows as the main theoretical model. The above theory empirically established highest level of correlation between the total business return and company’s market value.

Ming-Chin Chen et al. (2005) empirically investigated the relation between the value creation efficiency and firms’ market valuation and financial performance. The results supported the hypothesis that firms’ intellectual capital had a positive impact on market value and financial performance, and might be an indicator for future financial performance. Besides, the authors had
suggested that investors may place different values on the three components of value creation efficiency (physical capital, human capital, and structural capital). The study has proved that R&D expenditure might capture additional information on structural capital and has a positive effect on firm's value and profitability.

The long-run relationship between advertisement spending and market capitalisation was researched by Amit Joshi and Dominique M. Hanssens (2004). The empirical test is based on 10 years of monthly data for several PC manufacturers. The multivariate time-series methods applied by the researcher unearthed the long-run effects and short-run effects, as well as the direct and the indirect effects of advertising on firm's valuation.

The categorised results proved conclusively that ad spending had a positive and long run impact on a firm's market capitalisation. Thus, the findings provided an additional metric of measuring advertisement effectiveness on market capitalisation.

Another analytical study made by Sunil Poshakwale and Michael Theobald (2004) segregated the companies into large cap and small cap based on market capitalisation. The study sought to analyze the lead/lag relation between the two categories of companies. They arrived at the finding that large cap indices were found to lead the small cap indices and the large cap companies tended to adjust themselves more speedily towards its intrinsic values than the smaller ones.

Marc R. Reinganum (1999) put forward that market capitalisation was one of the most important determinants of portfolio returns. Investors who
could successfully manage their market capitalisation exposure would realize significant rewards over investors who either ignored their exposure or were unable to alter it. The author argued that current tendency to handcuff a manager to a narrow capitalisation range might be a mistake. Over a time, greater flexibility in shifting market capitalisation would enhance returns. He was of the view that managers should be given greater flexibility to alter the capitalisation exposures, or investors or their consultants should dynamically adjust allocations to different capitalisation categories. In either case, the author contended that improving performance in short-run horizons would enhance long-run performance.

Tobin's q ratio, conventionally used in determining market value, is basically flawed in that replacement cost based valuation of market value is suffering from bias in the part of accountants. Therefore the current trend is to base market capitalisation for determining the value of the companies. Keith W. Chauvin and Mark Hirschey (1993) sought to examine the perception of investors on calculating the market value based on advertising and R & D expenditure. He concluded that advertising and R & D expenditure positively influenced market value.

The relationship between aggregate dividend payments and market capitalisation was addressed by Stephan Leithner Und Heinz Zimmermann (1993). The study took companies from four different countries like West Germany, France, the UK, and Switzerland. It concluded by applying cointegration analysis that the dividend payout had a long run relationship with market capitalisation for European firms except U.K. firms.
Market Capitalisation and Macro Economic Factors

Boubakari Ake and Rachelle Wouono Ognailigui (2010) investigated the relationship between Doula Stock Exchange’s Market Capitalisation and Cameroonian economic growth through GDP evaluation using quarterly time series data from 2006 to 2010. The study applied Granger’s causality test to find out the link between variable Market Capitalisation and GDP. Using variance decomposition test of Cholesky, it was found out that there was systematic evidence that the market capitalisation affected positively the GDP.

The analysis provided an opportunity for the Cameroonian Government to fine tune financial policies, to encourage growth of companies and develop financial stock market culture.

Husni Ali Khrawish et al. (2010) examined the effect of interest rates on the stock market capitalisation rate in Amman Stock Exchange (ASE) over the period 1999-2008. Based on the multiple linear regression model and simple regression model, the time series analysis revealed that there was a significant and positive relationship between prevailing interest rate and stock market capitalisation rate. The study showed that Government development stock rate exerted negative influence on stock market capitalisation rate and found a significant and negative relationship between prevailing interest rate and Government development stock rate.

The study stressed the need for government intervention to encourage investment in Amman Stock Exchange by reducing rate of personal taxation thereby granting incentive for creation of wealth, controlling interest rate so as to aid the growth of the stock market and improve the regulatory environment.
Naresh Kumar (2010) examined the nature of relationship between macroeconomic indicators and growth through capital accumulation in India. The study also attempted to investigate the pattern of market capitalisation, GDP growth and domestic saving to understand the future direction of the stock market.

The study employed mathematical growth function namely Gompertz model to analyse estimation of financial variables. To establish link between these variables, assuming that financial variables were inter-related, Pearson correlation method was used. The results predicted a positive growth of market capitalisation for another five-year period and positive association between macro indicators.

Ujunwa Augustine and Salami Otaru Pius (2010) specifically examined the impact of stock market development on long-run economic growth in Nigeria. The study used time serial data for 21-year period from 1986 to 2006. The Ordinary Least Square regression was used to estimate the various models. The regression result showed that market capitalisation and turnover ratios were positive in explaining the economic growth, while stock market liquidity coefficient was negative in explaining long-run growth in Nigeria.

Hakim Ali Kanasro et al. (2009) analysed stock market concentration in Karachi Stock Exchange based on the annual data from 1997 to 2008 of the listed firms. The study found out that Market Capitalisation was negatively affected by the market concentration in the Karachi Stock Exchange (KSE). The research also found out that the KSE was highly concentrated in five groups of companies that dominated the market in capitalisation.
Andreas Billmeier and Isabella Massa (2009) assessed the macroeconomic determinants of stock market capitalisation in a panel of 17 emerging markets in the Middle East and Central Asia. In addition to traditional variables, the authors also included an institutional variable and remittances among the regressors.

The results found that (i) both institutions and remittances had a positive and significant impact on market capitalisation; and (ii) both regressors mattered especially in countries without significant hydrocarbon sectors; whereas (iii) in resource-rich countries, stock market capitalisation was mainly driven by the oil price.

Chakravarthy (2009) stated that the share of market capitalisation of the developed markets was shrinking, and emerging stock markets were grabbing a bigger share of the pie. Such a trend was not surprising because economic growth was far higher in countries such as China and India and capital inflows to these markets have boosted stock prices and led to a surge of new listings. Nevertheless, a comparison of the proportion of market capitalisation among exchanges in the developed and emerging world is an eye opener.

GLG expert contributor (2007) identified Market Capitalisation as fast becoming a universally accepted indicator of business valuation. Unipolar focus on working towards increased market capitalisation thus can be an effective tool of increasing overall business performance.

Ologunde A et al. (2006) examined the relationship between stock market capitalisation rate of Nigerian Stock Exchange and interest rate. The study employed a time series analysis to examine the effect of interest rate and
other variables such as Stock Market Capitalisation rate and Government Development Stock Rate obtained from 1981 to 2009.

By applying regression it was reported that the prevailing interest rate exerted positive influence on stock market capitalisation rate. Government Development Stock rate exerted negative influence on stock market capitalisation rate and prevailing interest rate exerted negative influence on the Government Development Stock rate.

Saji kumar (2006) while analysing the performance of SENSEX in terms of Market Capitalisation, movement of SENSEX, Returns on SENSEX, Trading turnover and SENSEX P/E ratio and found out that they were significantly related to the surge in FII’s inflows. He reported that the behaviour of returns on SENSEX and volatility were stabilizing due to external inflows and the fluctuations were largely due to withdrawal by the domestic equity holders during the period considered.

Sanjay Sehgal and Vanita Tripathi (2006) dealt with the causes of the size effect (market capitalisation effect) in the Indian stock market. The study tested and found that there was significant difference between small firms and large firms with regard to operating efficiency, financial leverage, stock liquidity, institutional neglect and distress level.

Gopinath N (2005) studied the pattern of share price fluctuations and behaviour of top 10 companies based on market capitalisation. The study further evaluated the performance of a company and share price movement.
The empirical analysis revealed that the performance of the sample companies was cyclical and showed a significant relationship between share price and price earnings ratio, market capitalisation and turnover ratio, and book value and market return. The financial performance and share price behaviour are perfectly correlated.

Varsha (2003) showed that if the sector or companies perform well, investors tend to reward the company in terms of better valuations. This has a direct impact on the Market Capitalisation of the exchange.

According to Banaji (2002), it is not the market capitalisation that matters but what is important is the level of the free float, that is, the shares that are actually publicly available for trading. With floating stock in the Indian market being less than 25 per cent, about 35 per cent of the free float available are bagged by FIIs - despite the fact that they invest in just a few highly liquid stocks.

Victor A Canto (2001) observed the relationship between volatility and valuations. He had used two variables namely inflation and tax rate. He found that variations in the aforesaid variable triggered the volatility in valuation.

Ayub Meher (2000) tested the effects of economic changes on market capitalisation in the study. The relevant economic factors have been classified into two broad categories: (1) demand factors, and (2) supply factors. It is hypothesised that market capitalisation depends on the total funds invested in the listed companies' (EQUITIES) and market liquidity (LIQUIDITY) in the long-term.
The model was tested in the context of Pakistan and the Monetary and Fiscal policies were found to be the significant determinants of the Market Capitalisation. Investment decision by the firms and market liquidity were two important determinants of the stock market. With some qualifications, the results indicated that monetary and fiscal policies affected the market capitalisation. The results provide a logical explanation for change in the market capitalisation.

Valeriano F Garcia and Lin Liu (1999) examined the macroeconomic determinants of stock market development particularly market capitalisation. The study used pooled data from fifteen industrial and developing countries from 1980 to 1995. The study concluded that real income, savings rate, financial intermediary development and stock market liquidity were important determinants of stock market capitalisation. The stock market development and financial intermediary development were complements instead of substitutes.

Agarwal (1997) analysed the impact of FII on market capitalisation. He states that higher flows of FII while increasing the reserves of RBI lower the profitability of RBI by interest and dividend payments and the net impact of FII is negative. He further adds that FII flows should be viewed not in isolation but as part of an integrated policy package for all capital receipts keeping in mind their role in the overall macroeconomic structure.
Corporate Firm Performance

Rohini Singh (2009) using Multi-factor model in place of Capital Asset Pricing Model (CAPM) sought to relate stock return to the underlying behaviour of beta. This paper relates stock returns to the underlying behaviour of beta and five company attributes, i.e., size, earnings yield, cash earnings yield, dividend yield and book-to-market ratio. The study concluded that risk was multidimensional, and researchers and decision makers should not depend on beta alone.

Kanwal Anil and Sujata Kapoor (2008) made an attempt to empirically analyze the determinants of dividend payout ratio of Indian Information Technology sector. The paper also focused on identifying whether various factors available as per literature influenced dividend payout ratio in IT sector in India in the existing scenario or not. Statistical techniques of correlation and regression have been used to explore the relationship between key variables. The study found beta and liquidity as noteworthy determinant of dividend payout ratio.

Monica Singhania (2008) who studied the various determinants of equity share prices in chemical industry with reference to Indian stock market during the period 2000 to 2007 concluded on the basis of correlation and regression analysis that earning per share, price earnings ratio, book value and dividend yield were the variables which played a pivotal role in determining share prices followed by dividend cover and dividend per share.

Hiroko Oura (2008) examined the efficiency of the different segments of India’s financial system using firm-level data on corporate financing patterns.
In his opinion firms were increasingly relying on external funds to finance their investment in recent years. Empirical analyses made by the author indicated that (1) the financial system in India was not channeling funds into industries with higher dependence on external finance (2) the debt financing system did not allocate funds according to firms’ external finance dependence, while equity financing system did, and (3) firms in an industry which are more dependent on external finance grew more slowly.

Reddy Y V and Rebello R W (2007) identified the relationship between corporate earnings, interest rate and market price. The study analyzed selected stocks which were actively traded in the National Stock Exchange for the period 2001 to 2006. Multivariate Regression Analysis technique was used to confirm the relationship between explanatory (independent) variables and explained (dependent) variable. Results from the analysis revealed that the market price of securities was highly correlated with corporate earnings as well as risk free rate of interest.

Subash Chander and Priyanka Aggarwal (2007) brought about the determinants of growth of selected 50 companies in drugs and pharmaceutical industry for a period of ten years from 1995-96 to 2004-05. The growth of firms was measured in terms of growth in average total assets and average total sales.

In order to study the determinants of growth, ten explanatory variables – size, profitability (ROCE, RONW, OPR, NPR), age, advertising expenditure, retention ratio, liquidity, efficiency ratios, long-term finance, market share and
research and development expenditure – were chosen for empirical investigation.

Multiple regression analysis was used to develop a model to identify the determinants of growth of firms in this industry. The results revealed that the size, advertising expenditure, age, efficiency ratio, profitability and research and development were statistically significant in determining the growth of firms.

Andre’Ribeiro Goncalves and Rogerio H. Quintella (2006) studied the variance of the return over assets (ROA) of Brazilian organization between 1996 and 2003. This variance was divided into factors associated with differences between business units, industries and economic conditions. The results indicated that it is the individual differences among business units that rootcaused the variation in the performance of companies and proved that the business units suffered more due to those differences and less due to economic mess.

Shefali Sharma and Balwinder Singh (2006) examined the empirical relationship of explanatory variables namely, dividend per share, earnings per share, price-earnings ratio, book value per share, size, cover, return on capital employed and payout ratio on the market price of the shares in the post-reform era.

The relationship between independent and dependent variable of 160 companies was studied over a period of five years spanning from 2001 to 2005. The results revealed that earnings per share and book value per share were important determinants of share price as they were the indices of healthy
financial position of companies. Dividend per share was an important determinant of share price which showed that the companies should adopt a liberal dividend policy to activate the primary as well as secondary market.

Kumar (2003) investigated the practical utility of the two models namely Price Earnings Ratio and Price to Book value Ratio. The study employed Seemingly Unrelated Regression (SUR) technique using BSE prices for the period 1996-2000. The result indicated that the conventional models need to be modified by including the current value drivers namely Sales Growth Rate and Operating Profit Growth. The study found that when OPG was included in the PEM model, the unexplained variation came down to a statistically significant extent, while sales growth and operating profit growth rate explained a significant portion of the variability in the Price to Book value model.

Bipul Malakar and Rajnarayan Gupta (2002) investigated various types of single equation models to determine the share price. To unveil the interwoven nature of the capital market and the product market a modified simultaneous equation model of Malakar and Gupta (1999) has been done.

The model was tested with data on eight major cement companies in India for the period 1968 to 1988. Two-Stage-Least-Squares method was applied for estimation purpose. The empirical findings suggested that the model was a close approximation of factual world and explanatory power of each equation was considerably high.

Ram Kumar Kakani et al. (2001) attempted to provide an empirical validation of the widely held existing theories on the determinants of firm
performance in the Indian context. The study used financial statement and capital market data of 566 large Indian firms over a time frame of eight years divided into two sub-periods (viz., 1992-96, and 1996-2000) to study Indian firms. The study found that the size, marketing expenditure, and international diversification had a positive relation with a firm’s market valuation. It further concluded that a firm’s ownership composition, particularly the level of equity ownership by Domestic Financial Institutions and Dispersed Public Shareholders, and the leverage of the firm were also important factors affecting financial performance of a firm.

Saravanan R (2000) applied Expert System (ES) to evaluate the corporate performance of five industries. The study made an attempt to classify the companies into 3 clusters (good, average and poor) using a selected set of ratio. The study also generated data for the three clusters using Computer Simulation techniques. The study found a set of rules needed for classifications into three clusters for the five industries.

Devanarayanan (1998) applied time series analysis to capture the trend, cyclical relations of export performance and domestic demand by applying Ordinary Least Square method, with care for the possible autoregressive errors. Based on the analysis, the study estimated the export demand and domestic demand of leather industry for the future.

Shanmugam (1998) developed a new methodology to assess the company performance based on several statistical techniques. The new method was applied to five major industries namely Automobile, Cement, Chemical, Electronic and Steel industry. The study reduced the number of ratios for
classifying companies into good, average or poor level for each of the 5 industries. The accuracy of classification varies from 90 per cent to 100 per cent.

**Macro factors and stock market development**

Shubha Ganesh (2010) lined up four macro factors namely low interest rate policy, new business cycle, budget expectations and appropriate strategies to gain profits from market movement to gain profit from the market.

Pai A.V. (2009) tracked five must-track macroeconomic indicators namely GDP-Growth, Inflation, IIP, Production of Capital Goods, and Foreign Exchange Reserves, which are important for investors who directly invest their money in equities to be aware of the macroeconomic picture.

Suliaman D. Mohammad et al. (2009) found the relationship between macroeconomic variables and prices of shares in Karachi stock exchange in Pakistan context. The study considered the quarterly data of economic variables such as foreign exchange rate, foreign exchange reserve, industrial production index, whole sale price index, gross fixed capital formation, and broad money (M2) from 1989 to 2008 period. The study highlighted that while internal factors of firms like increase in production and capital formation did not influence stock prices significantly, external factors like exchange rate and reserves did influence.

Sameena Zehra, Sadia Majeed and Saima Siddqui (2008) re-examined the relationship between KSE Index and a set of seven macroeconomic variables in Pakistan for the period 1971-2005 using quarterly time series data. The study used Bounds test or Autoregressive Distributes Lag Model (ARDL)
for the analysis. The results of the study indicated that a long run and short run relationship existed between KSE Index and macroeconomic variables; GDP was the largest positive determinant of Pakistan stock market in both short run and long run, while inflation was the largest negative determinant in long run and size of the financial market had positive impact on KSE Index in both long run and short run.

The causal relationship between stock prices and key macro economic variables like IIP, Exports, FDI, Money supply, Exchange rate, Interest rate, NSE Nifty and BSE Sensex in India was investigated by Shahid Ahmed (2008).

Johansen's cointegration approach and Toda and Yamamoto Granger Causality test were used to test the long run relationship while BVAR model and impulse response functions were used to examine the short run relationship. The study concluded that stock prices led to economic activity while interest rate led to stock prices. Indian stock market was driven not only by actual performance but also by expected potential performances.

The relationship between macroeconomic indicators like inflation, interest rate, money supply, Index of Industrial Production (IIP) and stock market behaviour were analysed by Hirak Ray (2007). Applying the econometric tools cointegration test and granger causality test, the study reports that the Index of Industrial Production had significant impact on the stock market. Stock market aggregate return spawned growth in index of industrial production. Therefore it is manifest from the study that the stock market influences industrial activity.
Kurihara (2006) chooses the period March 2001 to September 2005 to investigate the relationship between macroeconomic variables and daily stock prices in Japan. He takes Japanese stock prices, U.S. stock prices, exchange rate (yen/U.S. dollar), the Japanese interest rate, etc. The empirical results show that domestic interest rate does not influence Japanese stock prices. However, the exchange rate and U.S. stock prices affect Japanese stock prices. Consequently, the quantitative easing policy implemented in 2001 has influenced Japanese stock prices.

Doong et al. (2005) researched the dynamic relationship between stocks and exchange rates for six Asian countries (Indonesia, Malaysia, Philippines, South Korea, Thailand, and Taiwan) over the period 1989-2003. According to the study, these financial variables were not cointegrated. The result of Granger causality test showed that bidirectional causality could be detected in Indonesia, Korea, Malaysia, and Thailand. Also, there was a significantly negative relation between the stock returns and the contemporaneous change in the exchange rates for all countries except Thailand.

Ted Azarmi et al. (2005) examined the empirical association between stock market development and economic growth for a period of ten years around the Indian market “liberalization” event. The study did not support the hypothesis that the Indian stock market development was associated with the economic growth during the entire study period. However, the study found support for relevance of stock market to economic development during the pre-liberalization sub-period and also found a negative correlation between stock market development and economic growth for the post-liberalisation. In particular the results were consistent with the suggestion that the Indian Stock
market was a casino for the sub-period of post-liberalization and for the entire ten-year event study period.

Vanitha and Lazar (2005) disentangled the relationship between SENSEX (Sensitivity Index) movement and economic indicators like Index of Industrial Production, Money Stock, Aggregate Deposits and Trade balance by using correlation and stepwise multiple regression analysis.

They took the monthly data pertaining to April 1992 to March 2002. They reported that money supply and Aggregate Deposits had impact on the SENSEX whereas IIP did not impact on the SENSEX. They concluded that economy represented by IIP was not affected by the movement of SENSEX.

Vuyyuri (2005) investigated the co-integrating relationship and the causality between the financial and the real sectors of the Indian economy using monthly observations from 1992 to December 2002. The financial variables used were interest rates, inflation rate, exchange rate, stock return, and real sector proxied by industrial productivity. Johansen multivariate cointegration test supported the long-run equilibrium relationship between the financial sector and the real sector, and the Granger test showed unidirectional Granger causality between the financial sector and real sector of the economy.

Alsharkas Adef (2004) analyzed the long-term relationship between a group of macroeconomic variables and the Amman Stock Exchange Index. The macro economic variables are represented by the Index of Industrial Production, Consumer Price Index, Money Supply and Treasury bill rate. By employing Johansen’s Vector Error Correction model, the study shows that
these macroeconomic variables are cointegrated. In other words there exists a cointegrating relation among the variables.

Fazal Husain and Tariq Mahmood (2001) re-examined the causal relationship between stock prices and macro variables like consumption expenditure, investment spending, and economic activity in Pakistan. Using annual data from 1959 to 1999 and applying cointegration and error correction analysis, the paper indicated the presence of long-run relationship between stock prices and macro variables. Regarding the cause and effect relationship, the analysis indicated a one-way causation from macro variables to stock prices, implying that fluctuations in macro variables cause changes in stock prices in Pakistan.

Naka and Mukerjee (2001) analysed long run equilibrium relationship among selected macro economic variables (IPI, CPI, Money Supply and Money Market Rate) and BSE Index. The study used the data from 1962 to 1995. The study found that macro variables were cointegrated applying Vector Error Correction Model and there existed three long-term equilibrium relationships among these variables. The results of the study suggested that domestic inflation was the most severe deterrent to Indian Stock Market performance and domestic output growth as a predominant driving force.

The study reported weak causality running from Index of Industrial Production and Share Price Index (SENSEX and NIFTY), and there was no relation between share price index and Index of Industrial production.

Habibullah et al. (1999) determined the lead and lag relationship between Malaysian Stock Market and five key economic variables – GNP, CPI, Interest Rate, Exchange Rate and Money supply. It employed the methodology of Granger non-causality test proposed by Toda and Yamamoto for the study period from 1981 to 1994. The study used Gandolfo’s (1981) technique to interpolate quarterly data series from annual observation of GNP. The result indicated that stock prices led nominal income, price level and the exchange level while money supply and interest rate led the stock market.

Ajayi et al. (1998) took daily market indices and exchange rates to investigate causal relations between stock returns and changes in exchange rates for seven advanced markets from 1985 to 1991 and eight Asian emerging markets from 1987 to 1991. The empirical results showed that there was a unidirectional causality between the stock and currency markets in all the advanced economies while no consistent causal relations existed in the emerging economies. They explained the different results between advanced and emerging economies with the differences in the structure and characteristics of financial markets between these groups.

Shah and Thomas (1997) argued that because of the enabling government policies stock market in India was more efficient than the Indian banking system in terms of quality of information, processing and imposition of transaction cost.
Their research supported the idea that stock prices were a mirror which reflected the real economy and were relatively insensitive to factors internal to the financial system such as market mechanisms.

Abdalla and Murinde (1997) investigated stock prices-exchange rate relationships in the emerging financial markets of India, Korea, Pakistan and the Philippines using monthly data from 1985 to 1994. The empirical results unearthed unidirectional causality from exchange rates to stock prices in India, Korea and Pakistan. On the contrary, the reverse causation was found for the Philippines.

Attari V.N. and Neera Verma (1996) analysed the importance of equity investment in the process of economic development in India by developing a ‘multivariate regression model’ for the period 1960-1991 and evaluated the recent reforms of the stock-market initiated by the government of India. On the basis of the empirical verification of the model developed, the study concluded that the process of economic growth in India for the study period could be best explained in terms of industrial production (IP); the equity-investment and real rate of interest have played only a secondary role in the economic growth.

Mukherjee and Naka (1995) applied Johansen’s (1998) vector error correction model in order to analyse the relationship between the Japanese stock market and exchange rate, inflation, money supply, real economic activity, long-term government bond rate, and call money rate. They concluded that a cointegration relation indeed existed and the stock prices contributed to this relation.
Odedokun (1989) studied the causality between MI, M2 and total credit and Gross Domestic Product, Price level industrial activities and imports using the quarterly data during the period 1970 to 1983 for Nigeria. Using Granger causality test he found causation from Gross Domestic Product to total credit of price level to MI, each from M, and M2 to industrial production; reverse causation between Gross Domestic Product and M2; total credit and price level; MZ and price level; and import levels and each of M1, M2 and total credit. Their findings had important implications for model building as well as monetary and credit policies.

Jung (1986) explored causal relationship between financial development and economic growth using Granger tests for 56 countries across the globe out of which 19 were industrialized ones. The study concluded that there was financial development led growth in less developed countries while there was a stock market led development in developed countries.

The review of various pieces of literature was made under the head viz., Market capitalisation and firm performance, market capitalisation and macro economic facts, corporate firm performance and macro economic factors, corporate firm performance and macro economic factors. The reviews relevant to market capitalisation and firm performance have surfaced the following:

- Some studies have established a positive relationship between brand value and market capitalisation.
- A few analytical studies have highlighted the close connect between firm performance and market capitalisation.
• That the firm size is closely linked to market capitalisation has been unearthed by a handful of studies.

• The influence of variables like Advertisement, Research and Development, Dividend and Intellectual capital on market capitalisation has been conclusively proved by many researchers.

• Customer Equity based strategy could reliably predict the market capitalisation.

It is manifest from the aforesaid pieces of literature relating to market capitalisation and firm performance that the influence of various variables over market capitalisation has been undertaken independently.

However, the overall impact of the individual variable over market capitalisation is still an unexplored area warranting research. The present research seeks precisely to bridge the gap by developing a suitable model.

The second segment of the review of literature addressed the linkage between market capitalisation and macro economic factors.

An examination of the review of pertinent literature reveals the following:

• A few studies have brought out a close association between market capitalisation and GDP.

• Studies conducted abroad have empirically proved the role of interest rate in market capitalisation.

• The macro economic factors like real incomes, savings rate, liquidity, institutional and remittances are found to be important determinants of market capitalisation.
• The model developed in Pakistan has predicted market capitalisation.

• The close nexus between market capitalisation and SENSEX in India has been established in a few studies.

• Studies conducted in India have outlined the utility of market capitalisation for making business valuation.

• One of the researchers has stressed the significance of free float in market capitalisation.

• The volatility and valuation relationship has been played up.

• Market capitalisation leaves its shadow on the economic growth of a country.

• There is a close connection between share price fluctuations and market capitalisation.

It is clear from the literature cited in the second segment of the review, that market capitalisation model development in terms of macro economic variables is still a grey area to be addressed. The present study seeks to build a model to address the influence of macro economic variables on market capitalisation.

As for the third segment of the review i.e., literature pertaining to measuring the linkage between market capitalisation and firm's performance variable is very limited in India. Therefore, the researcher has consulted the writings relating to corporate firm performance to spot out the variables that can be incorporated into a model developed in the study. There is absolutely no study conducted in the Indian context investigating the influence of
difference performance variables on market capitalisation. The present study intends to bridge the gap by analyzing the impact of each performance variable on market capitalisation. The findings of this analysis would help the potential investor to take a right investment decision on the back of these variables used in the study.

The last part of the review turned its focus on the macro economic factors. There are plenty of studies focusing on the relationship between share price and macro economic factors and stock market index and macro economic factors. A close perusal of the final segment of the review brings to fore the fact of a limited studies in India linking macro economic factors and market capitalisation. Therefore, an attempt is made to fill this gap by analysing the relationship between the two.

It is appropriate to have an overview of I.T. industry before making an analysis of market capitalisation. A bird’s eye view of I.T. industry has been sketched in the very next chapter.