


CHAPTER 2
SURVEY OF LITERATURE

2.1 INTRODUCTION
Before stepping into the capital market for investing, it is crucial for the investors to have an estimate of the reasonable share price in the determined date and anticipate the future variations. In this regard, literatures have provided some internal and external factors that become the subject of change to share price volatility. Fundamental variables regarding company’s performance is the internal factors whereas external factors include domestic and International economic situation, exchange dynamism, industrial condition etc. However, factors that affect stock prices are numerous having varying power, intensity, duration and are unremittingly inexhaustible. The factors can be categorized into firm, industry, country/international or market and non-market factors, and economic and noneconomic factors. Factors in all time series studies (micro as well as macro level) are also inexhaustible.

The present work documents the empirical studies theoretical orientation that has been undertaken on factors that are responsible for stock prices variation. The attempt is to explain and produce a summary of the variables suggesting the predicted results. To get a better insight the major studies have been categorized in this pattern; in the first part a clear distinction is made on micro and macroeconomic variables and further the work is segregated on the basis of foreign and Indian stock market explorations.

**2.2 STUDIES ON EFFICIENCY/PREDICTABILITY OF INDIAN STOCK RETURNS**

Most of the studies on predictability/efficiency of stock markets are based on developed stock markets, especially those of the US and the UK stock markets. Not much is known about the predictable patterns of the stock markets of emerging market economies which had the fastest growing share markets in the last decade. In particular, if we consider the case of India which is one of the most important emerging market economies, we find that despite having a long history and voluminous turnover, serious, systematic and methodologically-sound studies on predictability of Indian stock returns, are very few. In fact, as commented by Poshakwale (2002), relatively much less is known about the characteristics and dynamics of Indian stock returns.

The first study on efficiency/predictability in the Indian stock market is due to Poshakwale (1996). Based on runs test and tests for serial correlation, he found
evidence of violation of weak-form efficiency in Bombay Stock Exchange over the period 1987-1994. In a subsequent study, Gupta and Gupta (1997) re-examined the random walk model in the Indian stock market using data for the period July 1988 to January 1996, and came to the conclusion that the findings were not supportive of the random walk hypothesis. Bhaumik (1997), however, found evidence of market efficiency, although in a very limited framework of analysis. It may be noted that all these studies have mainly used the traditional tests in their efficiency studies and to that extent the scopes of these findings are rather limited. Two other studies on market efficiency in the Indian stock market are due to Basu and Morey (1998) and Kawakatsu and Morey (1999). Although their common objective was to find the effect of economic liberalisation on the efficiency of Indian stock market, their analyses are relevant from the standpoint of market efficiency also. Applying variance ratio test on the monthly all-India share price index data spanning the period July 1987 to October 1996, Basu and Morey found that the aggregate equity prices show signs of being efficient since the mid-1980’s. Kawakatsu and Morey, on the other hand, found little evidence that liberalisation has changed the behaviour of Indian stock indices. Poshakwale (2002) has examined the random walk hypothesis by testing nonlinear dependence using both individual stock prices and equally weighted portfolio of 100 stocks for the period January 1, 1990 to November 30, 1998. The major finding of this study is that daily returns from the Indian stock markets do not follow random walk model.

There are also a few studies, although limited in their scopes, focusing on the presence of “seasonal” effects on the Indian stock returns. These studies by Chan et al. (1996), Wood and Poshakwale (1997), Choudhry (2000), Bhole and Pattanaik (2002) and Bhattacharya et al. (2003) have found evidence of the day-of-the week effect in the returns on Indian stock indices.

Investors invest in financial securities for competitive and satisfactory returns. They generally consider the ex-ante and ex-post returns of the securities while making investment decision. This is because the investment in financial assets is always associated with different types of risks which are expected to be driven partly by company oriented factors, partly by industry factors, partly by market oriented factors and partly by macroeconomic factors. A clear knowledge about the volatility and sensitivity of each and every factor with respect to behavior of the stock prices help an investor to enjoy a competitive advantage over those who do not have such
knowledge in the process of generating satisfactory return from investment in financial assets. That's why researchers and academicians from all over the world have given their effort to identify those real factors that significantly contribute to the volatility of stock prices. They developed and explained different theories and models to identify the factors truly responsible to the volatility of stock prices. Their results also differ with respect to developed economy and those of emerging economy. The analysis of the interrelationship runs in terms of Efficient Market Hypothesis. The Efficient Market Hypothesis (semi-strong form), states that in a semi-strong efficient market, everyone has perfect knowledge of all publicly available information and these are fully reflected in stock prices. Otherwise, the market participants are able to develop profitable trading rules and the stock market will not channel financial resources to the most productive sectors. This study is an attempt to identify long run equilibrium relationship between stock prices and a set of ten market oriented variables which can be technically classified into two broad categories as Macroeconomic and Microeconomic variables in an emerging economy like India.

2.3 MACROECONOMIC FACTORS AFFECTING FOREIGN STOCK MARKETS

Theoretical work regarding the inter linkage between stock market and macroeconomic variables is not without ambiguity. No theoretical model is generally accepted unanimously to support the linkage of macroeconomic variables to stock market development. It is estimated that the economic factors that are supposed to influence the expected dividend or discount rate would also make an impact on stock returns.

There are number of studies and numerous ways in which the stock market and the macro economy have been related in the literature. The theoretical relationship between stock market and economic variables was pioneered and dates back to 1970s when Nelson (1976) assessed the U.S. monthly stock market prices and inflation rate in the post war period from 1953-1974. The attempt reported negative relationship in both expected and unexpected inflation. Bodie (1976) investigated the performance of consumption goods stock return to hedge inflation, which can be used to minimize risk of an investor's real return. The relationship between the macroeconomic variables and stock market returns has been derived primarily through two different
methodologies. Historically, the arbitrage pricing theory (APT) (Ross, 1976) has been used as the methodology to explore the link where multiple risk factors can explain asset returns. Early empirical papers on APT focused on individual security returns but it may also be used for the stock market, where a change in a macroeconomic variable could be seen as a change in the underlying systematic risk factor influencing future returns. Relevant studies that have used this include Fama (1981, 1990), Chen et al. (1986), Fama and French (1989), Schwert (1990), Ferson and Harvey (1991) and Black, Fraser and MacDonald (1997). These studies generally model a short run relationship between macroeconomic variables and stock price returns. Each of these studies have found that stock returns and various macroeconomic factors are, to varying degrees, correlated, using either developed or developing countries’ market data. An alternative approach that is widely used is cointegration analysis which was initially proposed by Granger (1986) and subsequently enhanced by Johansen (1991) and is a well established methodology when testing long run relationships among variables. A finding of cointegration amongst the variables over an extended period of time implies the existence of a long run relationship as they share a common trend. If it exists, one is able to determine the relationship amongst these variables by using a vector error correction model (VECM).

From the cointegration and VECM, the Granger causality test which was first formulated by Granger (1969), is used to interpret whether one factor may be influential in another factor’s future value. For example, if lagged values of X help to predict current values of Y then X is said to Granger cause Y. Granger causality is widely used in these types of studies to find whether the values of stock indexes are functions of past and current values of macroeconomic variables. Innovation accounting is then used to demonstrate the effect of a unit shock or movement of a macroeconomic variable on the stock market and aides in the support of the findings of the Granger causality. A significant number of previous international studies have applied cointegration, causality and innovation accounting in their analysis in establishing long run relationships between stock prices and macroeconomic variables across various developed and developing countries.

Fama (1981) evidenced a highly significant equation between share price variation and the real economic variables (Gross national product, capital expenditure,
Industrial production). The study was well supported by Geske and Roll (1983), Chen et al., (1986), Boudoukh and Richardson (1993), and (1985).

Unexpected announcement in monetary policy found to have a significant impact over the share market, Pearce and Roley (1985) in their study "Stock Price and Economic News".

Ho (1983) studied six Far East countries (Thailand, Singapore, and the Philippines) to test the impact of the money supply on stock markets using cointegration and causality test. He concluded that money supply (M1 and M2) has a significant impact on stock prices. However, in the case of Thailand and Hong Kong, only M1 has a significant influence on stock prices. Koh (2000) examined the dynamic relationship between macroeconomic variables and the Singapore Stock market using Johansen vector error-correction model. He found a significant sensitivity of Singapore stock market to interest rates and exchange rates.

Chen, Roll, and Ross (1986) chose a set of macroeconomic variables and concluded that economic variables such as industrial production, changes in risk premium, and change in the yield curve significantly explained the unexpected stock returns. According to them, economic forces change the discount rate, the firms’ future potential to generate cash flows and dividend payments. It is through Arbitrage pricing approach that macroeconomic variables become an unattached part of risk factors in equity returns.

Errunza and Hogan (1998) examined the stock return of 8 countries viz., Italy, Germany, UK, France, Switzerland, Netherland, Belgium, and USA and the impact that was driven by major macroeconomic factor. For Germany and France, monetary instability was reported to be statistically significant, whereas Industrial production significantly explained the variation of share return in Netherland and Italy. On the other hand, for UK, Switzerland and Belgium, none of the economic variable was found to be strong enough to explain stock return forecast.

Covering seven macroeconomic variables (industrial production, consumer prices, M1, M2, credit aggregates, foreign reserves and exchange rates) Ibrahim (1999) conducted his study to test the informational symmetry for the period from 1977-96 for Malaysian stock market. The study suggested cointegration between these macroeconomic factors and Malaysian stock price fluctuations. In other words Malaysian market had a high informational inefficiency. The Bivariate analyses
demonstrate cointegration between three macroeconomic variables; consumer prices, credit aggregates, official reserves and stock prices. The result also attempted to present that, movement in stock market predict the variations in the industrial production, money supply, and the exchange rate.

Kwon and Shin (1999) investigated whether current economic activities in South Korea can explain stock market returns by using a cointegration test from a vector error correction model and the subsequent causality using the Granger causality test. The study finds that the Korean stock market reflects macroeconomic variables on stock price indices. The cointegration test and the vector error correction model illustrate that stock price indices are cointegrated with a set of macroeconomic variables—that is, the production index, exchange rate, trade balance, and money supply—which provides a direct long run equilibrium relation with each stock price index. The stock price variability was found to be fundamentally linked to economic variables and the change in stock price lags behind those economic activities.

Mohammad and Rasheed (2001) explored the short and long run relationship between stock price and exchange rate of four South Asian emerging economies namely India, Pakistan, Sri Lanka and Bangladesh for the span of six years from 1994 to 2000. They employed econometric method like co integration, VECM, and standard Granger causality tests to demonstrate that Pakistan and India do not have long run relationship while short run association was absent for all the four countries between exchange rate and stock prices. Further, Bidirectional causality was observed for Bangladesh and Sri Lanka between the two variables under study.

Fifield, Power and Sinclair (2002) the study tested the influence of domestic variables (GDP, money supply inflation, short term interest rate, exchange rate and trade balance) as well as global variables (world industrial production, world return, oil price US interest rates world inflation and commodity prices) using cross-sectional data for thirteen emerging markets in explaining the stock market. Their results showed that interest rates domestic GDP, money supply and inflation as well as the world production and inflation, can explain the variability in equity returns in upcoming markets. The significance of these factors is that they vary between countries. The results highlighted the importance of empirically modelling the emerging stock markets.
Gunsekaraage et al. (2004) examined the macroeconomic variables influence on the stock market in Sri Lanka and found the consumer price index has a significant negative influence and money supply has a positive significant influence on the stock market. The interest rate has a negative impact and the exchange rate does not seem to have any influence on stock prices. The VECM analyses provided some support for the argument that lagged values of macroeconomic variables have an influence on the stock market.

Chaudhuri and Smiles (2004) found evidence of long run relationships between real stock price and measures of aggregate real activity including real GDP, real private consumption, real money and the real price of oil in the Australian market; however, the causality was not probed.

In their study of the impact of macroeconomic risk on asset prices in Ghana, Twerefou and Nimo (2005) concluded that this risk factor, which is quite high in developing countries, impacts prices and the growth of capital. Twerefou and Nimo (2005) observed that in Ghana, financial analysts rely on government policies to make their forecasts. Government macroeconomic targets at the beginning of the year are factored into business operations, which feed into the determination of stock prices of listed companies on the Ghana stock exchange.

Macroeconomic variables and their stock market interactions were examined in New Zealand by Gan et al. (2006) on a monthly basis with the New Zealand stock index. It was found that a relationship existed and the causality of stock returns is determined in the long run by the interest rate, money supply and real GDP with inflation. Exchange rate and domestic retail oil price were, however, not significant.

Money supply and interest rates and their relationship with stock prices were investigated by Wong, Khan and Du (2006) for Singapore and U.S. The Johansen multivariate cointegrated system and Granger causality was used with the results suggesting that Singapore’s stock prices generally display a long run equilibrium relationship with interest rate and money supply (M1) but a similar relationship does not hold for the U.S. It was found that the stock market leads these macroeconomic variables and therefore stock markets may be used by the central banks as an indicator to adjust monetary policy.
Osei (2006) examined the long-run and short-run relationship between the Ghana Stock Market and some selected macroeconomic variables (money supply, inflation, exchange rates, and gold price) using cointegration techniques. The study found a long-run relationship between Interest rates, exchange rates, inflation, and the Ghana stock market. For example, a depreciating currency causes a decline in stock prices because of expectation of inflation.

Dritsaki and Dritsaki tested the relationship between macroeconomic factors and stock price movements in German stock exchange. The macroeconomic factors like interest rate, inflation rate, and industrial production were used to determine their effect on the prices of Athens Stock Exchange. The time span covered by the study was the period from Sep 1988 till Jun 2003. Dickey-Fuller and the Augmented Dickey-Fuller tests were used to find out any long run equilibrium and the findings suggested that these variables were integrated and evolved over time. Thus a significant relationship was developed between stock price volatility and macroeconomic factors volatility.

Brahmasrene and Jiranyakul (2007) examined the relationship between stock market index and selected macroeconomic variables during the post-financial liberalisation (pre-financial crisis) and post financial crisis in Thailand. For the post financial liberalisation, the Johansen cointegration test showed at least one cointegrating or long run relation between the stock market index and a set of macroeconomic variables. Money supply had a positive impact on the stock market index while the industrial production index, the exchange rate and oil prices had a negative impact. During the postfinancial crisis, cointegration existed between the stock market index and macroeconomic variables. In addition, the Granger causality test indicated money supply was the only variable positively affecting the stock market returns.

Ratanapakorn and Sharma (2007) used quarterly data for the period of 1975 to 1999 for the US stock market to test the short run and long run equilibrium relationship between stock price variation and certain macro economic variables. The study used Johansen cointegration test and VECM and found a significant association between industrial production, inflation, money supply, interest rate (short term) and exchange rate, whereas long term interest rate is negatively related to stock return.
unidirectional causality was also observed between all the macroeconomic variables and the stock prices in long run but no causal effect was present for short run changes during the analysis.

Gay (2008) documented his study for developed market (US) and other major emerging economies (BRIC) to understand the relation of stock price and economic variables (Oil prices, and exchange rate) in emerging economies. Using Box - Jenkins and ARIMA model it was found that neither the stock prices in BRIC countries is affected significantly due to exchange rate and oil price nor the present or past stock market return forecast any trend to suggest the market of Brazil, Russia, India, China. Hence, exhibiting a weak form of efficiency.

Adam and Tweneboah (2008) conducted a similar study in Ghana using FDI, T-bill rate, CPI, and exchange rate as independent variable and Databank Stock Index as dependent variable. The data used for the study was taken from Databank Stock Exchange, IMF’s international financial statistics database, and UNCTAD for the period of 1991 to 2006. The inferences drawn have shown that there exists a long run relationship between the dependent and independent variables. Moreover inflation was founded positively related with the stock index. Interest and inflation rate explain a very small proportion of the stock volatility than do the inflation and FDI inflows.

A research by Kyereboah-Coleman et al. (2008) also concluded that as the currency depreciates, capital flight affect stock trade volume and the price index as funds are redirected to other regions with more favorable exchange rates. In their study of the Ghana Stock Exchange (GSE), Kyereboah-Coleman et al. (2008) attempted to show how macroeconomic indicators affect the performance of stock markets by using the Ghana emerging market as a case study. Their study revealed that lending rates from money deposited in banks have an adverse effect on stock market performance. The results also showed that it takes time for this to take effect due to lag periods; and that investor’s benefit from exchange-rate loses because of domestic currency depreciation. The most important contribution of this study to the character of the GSE is the emphasis on macroeconomic variables and stock market performance in a small developing country, such as Ghana, since most of these types of studies had concentrated on developed countries.
Zafar et al. (2008) investigated the effects of changes in the interest rate proxied by the 90-day T-bill rate on the volatility of Karachi stock returns. Similar to Léon’s (2008) approach, Zafar et al. estimated two distinct GARCH (1,1) models; one without interest rates and the other with interest rates to estimate the conditional mean and variance for monthly data for the period from January 2002 to June 2006. For both models, the conditional market returns and variance parameters were very similar to each other. In particular, conditional market returns had a negative significant relationship with interest rates, indicating that it was easy to predict the stock returns by analyzing interest rates. However, the conditional variance had an insignificant negative relationship with interest rates and was a weak predictor for its volatility. These results, in general, demonstrate that when interest rates increase, people tend to deposit their savings in bank accounts rather than investing in the stock market. That is, higher interest rates reduce the profitability of firms, and hence, stock prices go down. Accordingly, Zafar et al. suggested that policymakers should carefully consider these relationships when intervene the stock market and overall investments policy in the economy.

Somoye, Akintoye and Oseni (2009) argued that the information factor or market indices have an effect on the market price of stocks. For this purpose they used earning per share, dividend per share, GDP, lending interest rate, oil price, inflation and foreign exchange rate as independent variables and stock price as dependent variables. Company specific data was collected from twelve companies listed on Nigerian Stock Exchange. The multicolinearity test has shown a strong relationship between oil prices and GDP, between inflation rates and interest rates, foreign exchange rates and GDP and inflation rates and earnings per share simultaneously. The regression analysis has shown that these variables explain almost hundred percent of the variation in the stock price while the relationship of earning per share, dividend per share and GDP with stock price was found positive while this relationship was negative in case of interest rate.

Hussainey and Ngoc (2009) study was based on two aspects of the Vietnamese stock price pattern. On the first part he studied the influence of significant macroeconomic variables (interest rate, industrial production) on its stock market. The second aspect was to cover the impact of international dynamic scenario - U.S. -macroeconomic factors on Vietnamese stock price variation. The study explained a positive and
significant relation of the indigenous industrial production and U.S. industrial production on the Vietnamese share returns.

**Rahman et al. (2009)** examined the interaction of macroeconomic determinants like money supply, exchange rate, reserve, industrial production and Malaysian stock market using monthly data from January 1986 to March 2008 by applying co integration technique and vector error correction mechanism. They presented that interest rates, industrial production and reserves were significantly positive, whereas exchange rate and money supply were inversely related in a long run. Moreover a Bidirectional causal effect was suggested between stock prices variation and interest rate.

**Humpe and MacMillan (2009)** modeled the long term relationship between industrial production, the consumer price index, money supply, long term interest rates and stock prices in the U.S. and Japan. In the U.S., they found stock prices are positively related to industrial production and money supply and negatively related to both the consumer price index and a long term interest rate. In Japan, it is found that stock prices are influenced positively by industrial production and negatively by money supply, consumer price index and the long term interest rate. No Granger causality testing was done.

**Aleem (2010)** analyzed quarterly seasonally adjusted data from 1996 to 2007 to demonstrate the effect of monetary policy tightening (overnight call money rate) on GDP and equity return (BSE Sensex) by employing VAR approach. The study answered that the asset price channel (equity prices) is insignificant in the transmission of monetary shocks to the real sector in Indian economy.

**Singh, Mehta, and Varsha (2011)** studied Taiwanese stock market in relation to selected macroeconomic factors and reported the impact of exchange rate and GDP on stock return, while variables like inflation, money supply and employment rate were negatively related with the Taiwanese stock return.

**Azizan and Sulong (2011)** conducted his research study for Malaysian stock market and concluded that the Malaysian stock market is more integrated with other Asian country's economic variables. The study further found that Malaysian stock prices behavior was better explained by the stock prices and exchange rates of other Asian countries.
Yadav and Lagesh (2011) studied the dynamic interrelations among the macroeconomic variables of real output, money, price, interest rate and exchange rate using monthly data for India covering the period from 1991:1 to 2007:12. The bounds test revealed that there existed a long-run relation between real output, money supply, interest rate and exchange rate when the price variable was the dependent variable. Also, a long-run relationship between real output, money supply, price and interest rate was found when exchange rate was the dependent variable. The short-run causality found no evidence between real output and money and a unidirectional causality running from price and interest rate to real output was found. Finally, it was found that output, money, price and interest rate had no effect on exchange rate in the short-run.

Gupta and Modise (2011) modelled macroeconomics with South African stock return predictability. They reported that for in-sample forecasts, interest rates, the money supply and world oil production growth, have some predictive power in the short run. For out-of-sample forecasts, the interest rates and the money supply exhibit short-run predictability, and the inflation rate shows a strong out-of-sample predictive power. However, when accounting for data mining, both the in-sample and the out-sample test statics become insignificant at all time horizons.

With the help of Multivariate Regression Model computed on Standard OLS Formula, Ali M. B. (2011) comprised selected microeconomic and macroeconomic variables on the stock returns at Dhaka Stock Exchange (DSE). The regression coefficient of Inflation and foreign remittance found to have significant but negative effect, while IIP, P/E ratio, growth rate of market size had a positive effect on stock return. The study reported that 44.48 percent changes were explained by the effect of combined explanatory variable in Dhaka stock market. A further causality test reveal no causality between share prices and all variables except one unidirectional causal relation from stock price and market price earnings ratio. Finally, absence of causality between selected variables and stock market demonstrate informational inefficiency in the Dhaka stock exchange.

Akbar et al. (2012) examined the relationship between the Karachi stock exchange index and macroeconomic variables for the period of January 1999 to June 2008. Employing a co-integration and VECM, they found that there is a long-run...
equilibrium relationship exists between the stock market index and the set of macroeconomic variables. Their results indicated that stock prices were positively related with money supply and short-term interest rates and negatively related with inflation and foreign exchange reserve.

Makan et al. (2012) studied the effect of macroeconomic variables namely industrial production index, consumer price index, interest rate, exchange rate, oil price, foreign institutional investment, and gold price on Indian stock market. The results showed that the exchange rate, foreign institutional investment, and interest rate have a significant influence on Indian stock market; also the study reveals that in long run the Indian stock market is more driven by domestic macroeconomic factors rather than the global factors.

Monjurul Muhammed, (2012) investigates the effects of macroeconomic variables of treasury bill interest rate and industrial production on stock returns on Dhaka Stock Exchange for the period between January 2000 and February 2007 on the basis of monthly time series data using Autoregressive Integrated Moving Average (ARIMA) model. The paper has taken the overall market stock returns as an independent variable. It does not consider the stock returns of different companies separately. The ARIMA model finds a positive relationship between Treasury bill interest rate and industrial production with market stock returns but the coefficients have turned out to be statistically insignificant.

The role of macroeconomic factors as a stock prices return determinants has been documented largely using single composite stock market index. Hence, there is a possibility that macroeconomic variables may affect different sectors differently.

2.4 MACROECONOMIC FACTORS AFFECTING THE INDIAN STOCK MARKETS

The study of emerging economy's macroeconomic factors in relation with stock price return is investigated only recently. Quite a number of researches have been made to identify the determinants of share price in Indian context. Unlike foreign studies a large number of studies used regression analysis to draw inferences, a lesser number of attempt have been made to identify and quantify the influence of selected variables on share price behavior.
**Darrat and Mukherjee (1986)** employed vector auto regression model over a period 1948-1984. Variables like Prime lending rate, exchange rate (Rupee Vs Dollar), IIP, M2 were examined in the study. The finding revealed a weak unidirectional causality from IIP to share price variation (Sensex and Nifty).

**Shankaran (1991)** made an attempt to study the association between Indian capital market proxy by BSE with other commanding international stock markets. The study reported no significant relationship between Indian capital market and other international market index. Moreover the study reported an inverse relation among BSE, British and South Korean indices.

**Murthy (1994)** examined macroeconomic variables representing economic transactions using regression analysis on annual data. The study presented a close association of monetary - fiscal variables and real variables with that of movement in share indexes. The strong lagged relationship of share price with these variables pointed inefficiencies in the efficient market sense. Further, he did not report an inverse relation between inflation and share prices in Indian market.

**Sen (1996)** observed the Indian share price movement during 1985-1994 to find the role of foreign capital inflow viz., economic fundamentals like GDP growth, change in interest rate, and exchange rate fluctuation in determination of share prices. Using regression model, the study reported that industrial production and foreign exchange reserve were the main determinants of movement in stock prices in India. The study also ascertained a significant relation with net foreign capital flows.

**Rao and Jose (1996)** attempted to examine the impact of variables like IIP, wholesale price index, foreign exchange reserve, aggregate deposits with commercial banks, interbank call money rate, small savings with government on current and non current account etc. on stock return. A sample of 71 actively traded companies from 1975-1991 were chosen for consideration. The research found that the small savings with government on current and non current account was significant at the 1% level of significance and remaining variable were followed a significant level of 5%.

**Naka Mukherjee and Tufte (1998)** used Vector error correction model (VEC) to study the relationship between certain macroeconomic variables and Indian stock market return. The study concluded a strong but negative association between inflation and stock prices while, Industrial production was found to be positively
significant determinant of Indian stock return. The study also revealed three long term
equilibrium relationship among these macroeconomic variables.

Pethe and Karnik (2000) used monthly data from 1992-97 and applied cointegration
and error correction model to find the causality between selected macroeconomic
variables and the share price index (SENSEX & NIFTY). The variables include
narrow money supply, price lending rate, exchange rate (Rupee Vs Dollar) broad
money supply and IIP. The result reported a weak causality running from IIP to share
price index (SENSEX, NIFTY) while no causality were evidenced between other
variable and stock exchanges.

Panda and Kamaiah (2001) examined the causal relation and vivacious interaction
using Vector auto regression model (VAR) among monetary policy, real activity,
expected inflation and Indian stock market returns in the post liberalization period.
The study reported a significant causality between stock return, expected Inflation and
real activity, while monetary policy report to lose its relevance in the presence of
expected inflation and real activity. Hence, a weak form of relationship was revealed
between monetary policy, expected inflation, real activity and stock market return.
Furthermore, no causal relation was reported between expected inflation and real
activity.

Bhattacharya and Mukherjee (2002), Nath and Smantha reported a causal
relation between Indian stock market (Sensex) and five macroeconomic variables
namely IIP, money supply, national income, interest rate, and inflation rate during the
period of 1992-93 to 2000-01. Using monthly data they applied Granger causality
approach by Toda and Yamamoto and found a unidirectional causality between IIP
and SENSEX, while reported bidirectional causality between SENSEX and Inflation.

Mukhopadhyay and Sarkar (2003), conducted a comprehensive study of Indian
stock return by dividing the sample into two phases i.e., pre and post liberalization
period and then measuring the influence of certain macroeconomic variables. Factors
like inflation, money supply, real economic activity, FDI and NASDAQ index were
found to put significant variation in the Indian stock returns during post liberalization
period, while nominal exchange rate results to make significant variation during pre
liberalization period (1989-95).
Mishra (2004) employed econometric models like Granger's causality test and vector auto regression tool for Indian share market and foreign exchange during 1992 to 2002. The study discovered a unidirectional causality exchange rate and interest rate and also between exchange rate return and total money demand. The study examined no causality between foreign exchange rate return and stock return.

A regressive study by Kumar (2006) explained the role of FIIs and mutual funds in the Indian stock market and displayed the movement followed by the market using the direction of the fund flows from these investors. The study concluded significant impact of institutional movement on the market direction. Granger's causality test further disclosed that mutual funds net flows were strong enough to show the direction to the market and even foreign institutional investors were following their movement.

Tuteja (2007) evidenced stable long run equilibrium between Indian stock market and economic growth of India.

Nair (2008) used co integration and error correction models to examine the influence of macroeconomic variables (real income, growth, interest rate, FIIs, exchange rate and inflation) on the development of Indian market during 1993-2007. The study reported a positive and significant role of real income, its growth on stock market development, while interest rate had a significant but negative impact. On the contrary variables like FIIs, exchange rate, inflation found to have no relation with the stock market development.

Ahmed (2008) applied some advanced analytical tools like Toda and Yamamoto's causality test, variance decomposition, impulse function, BVAR, etc to explore a causal linkage between IIP, exports, FDI, money supply, exchange rate, inflation and Indian stock market (SENSEX and NIFTY) in short and long run. Differential causal effect was found between these variables and stock index in the long run. However, in a short run the causal relation was found to be similar in both the markets. The study evidenced that Indian stock market causes movement in exchange rate, exports, IIP and money supply; while FDI and interest rate leads to changes in stock prices.

Sharma and Mahendru (2010) examined the effect of the key macro economic variables such as foreign exchange reserves, gold prices, inflation rate, exchange rate on stock prices using multiple regression models. The result presented a significant
relationship between exchange rate and gold prices. However, no association was found between foreign exchange reserve and inflation rate on stock prices.

**Srivastava (2010)** chose macroeconomic variables to test its co-integration with Indian stock exchange. The study employed vector error correction model to examine the vibrant relation between stock indices and various macroeconomic variables. The study concluded strong co-integration between IIP, wholesale price index, interest rate stock returns in a long run.

**Hosseini, Ahmed and Lai (2011)** evaluated the performance of four macroeconomic variables namely crude oil price, money supply, industrial production and Inflation rate using econometric methods in China and India over a period from January 1999 to January 2009. The study concluded that their exist a short run as well as in a long run equilibrium between macroeconomic factors and stock market indices in both the market.

While testing effect of variables like Real effective economic rate (REER), foreign exchange reserve, balance of trade, FDI, IIP, Wholesale price index on stock prices (NIFTY), **Kumar (2011)** found no co-integration between Nifty and other variables except wholesale price index as per Johansen cointegration test. The study further indicated no sign of causality between these two variables.

**Tripathy (2011)** attempted to measure the market efficiency and causal effect between interest rate, exchange rate, inflation rate and stock market from January 2005 to February 2011. The study applied Ljung box Q - test, Breusch- Godfrey LM test and Granger causality test confirmed that Indian stock market fell into the category of an efficient market hypothesis. A bidirectional relationship between interest rate, exchange rate and stock market, international stock market, exchange rate and BSE volume was evidenced.

**Pal and Mittal (2011)** examined the effect of key macroeconomic factors like interest rate, inflation rate, gross domestic saving, and exchange rate of Indian economy on Indian share market (BSE & NSE) over a quarterly time series from January 1995 to December 2008. By attempting econometric methodology a short and long term statistical dynamism was examined. The study indicated a significant impact of inflation rate on BSE and Nifty 50. However, interest rate found to be only significant for Nifty. A significant relation of foreign exchange rate with BSE Sensex was also
reported. However, a insignificant association of GDS with Sensex and Nifty was found in the study.

Kalra (2012) chose a bunch of key macroeconomic factors like forex rate, CRR, gold prices, reverse repo, wholesale price index, oil price, inflation rate and GDP to examine their impact on Indian stock prices. The study concluded a positive and significant association of forex rate, gold prices and inflation rate with the stock price movements.

Mishra and Singh (2012) employed non parametric approach to study the behavior of Indian stock return in the presence of macroeconomic variables like Inflation rate, IIP, FII, interest rate and exchange rate for a period of 10 years from 1998 to 2008. The result reported that IIP and FII affected the frequency of change in the Indian market positively.

In a recent study Trivedi, Behera and Ranjan (2012) attempted to explore the interlinkages between Indian stock price (BSE Sensex) and few major macroeconomic variables of Indian economy. Variable involved for the study were viz., IIP, WPI, interest rate (3 months T- bill rate), Money supply (M3), FIIs and Morgen Stanley, Capital International (MSCI) world index. The study employed co integration Vector Autoregressive (VAR) approach with impulse response function and variance decomposition results to examine dynamic interrelationship between share price and macroeconomic variables under consideration.

In a comparative study to check the price behavior of more volatile share with less volatile share by Zahir (1992), taking internal and external factors causing difference in price of two groups of shares found that internal variables explained to the extent of 67% of the pricing behavior for more volatile shares.

Mahapatra and Sahu (1996) in an empirical study reported the influence of fundamental and technical variables on the equity prices during 1980-91. Selecting a sample of 43 companies was evaluated by applying multiple regression technique. A strong dependence of both fundamental and technical factors over the investment decision of investors was reported in the findings. Fundamental variables such as size of the companies, yield, and EPS were the most prominent
determinants explaining around 90% movement in stock prices. Furthermore, technical variables like IIP and security price index explained 89% of the change in equity prices of the selected companies.

Table 2.4: Common Macroeconomic Variables and Major Results for Developing Economies

<table>
<thead>
<tr>
<th>Study</th>
<th>Method</th>
<th>Variable</th>
<th>Major Results</th>
<th>Country</th>
</tr>
</thead>
</table>
| Ibrahim (1999)    | Cointegration Test, and Causality Test | M1, M2, CPI, Exchange Rate, Domestic Credit, Foreign Reserve, IP. | - The results revealed that the Malaysian stock market is informationally inefficient with respect to consumer prices, official reserves, and the domestic credit aggregates.  
- This study also provided evidence that the stock prices are Granger-caused by changes in the official reserves and exchange rates in the in the short run.  
- Malaysian stock price were marginally cointegrated with M2, and there was no long-run relationship between the stock prices and M1. | Malaysia |
<p>| Maghayereh (2003) | Johansen Cointegration Test, and Vector Error Correction Model (VECM) | M1, Interest Rate, Inflation, Domestic Exports, Foreign Reserves, IP. | - There is evidence that the Jordanian stock price index was cointegrated | Jordan  |</p>
<table>
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<tr>
<th>Source</th>
<th>Methodology</th>
<th>Results</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gunasekarage et al. (2004)</td>
<td>Johansen Cointegration Test, Impulse Response Function (IRF) Analysis, and Forecast Error Variance Decomposition (FEVD) Analysis</td>
<td>with all of the macroeconomic variables under consideration. These results suggest that the Jordanian capital market violated the theory of market efficiency from January 1987 to December 2000.</td>
<td></td>
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<td></td>
<td></td>
<td>- Lagged values of money supply and the Treasury bill rate had a significant influence on the stock market.</td>
<td>Sri Lanka</td>
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<tr>
<td></td>
<td></td>
<td>- All Share Price Index did not have any influence on money supply, but it did influence the Treasury bill rate.</td>
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<tr>
<td>Ibrahim (2006)</td>
<td>VAR model, Impulse Response Function (IRF) Analysis</td>
<td>with all of the macroeconomic variables under consideration.</td>
<td>Malaysia</td>
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<td></td>
<td></td>
<td>- The results revealed that bank loans reacted positively to the increase in stock prices but the converse is not true.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Bank loans appeared to accommodate expansion in real output but had no influence on real economic activity.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- IRFs</td>
<td></td>
</tr>
<tr>
<td>Study</td>
<td>Methodology</td>
<td>Variables</td>
<td>Findings</td>
</tr>
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<td>-------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
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</table>
| Muradoglu and Argac (2001)                | Johansen Cointegration Test                                                  | Money Supply, Overnight Interest Rate, Foreign Exchange Rate | - The three monetary variables were found not be cointegrated with stock prices during the sample period and also during the sub-sample period from 1988 to 1989.  
- All three other monetary variables were cointegrated with stock prices in the sub-period from 1990 to 1995.  
These findings suggested that the results of the analysis were sensitive to the examined period. | Turkey   |
- There is no relationship between the interest rate and stock prices. | India    |
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<tr>
<td>- The interest rate appeared to lead the stock prices in the short run.</td>
<td>- This study provided evidence for the long run relationship between the equity market and monetary variables.</td>
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<tr>
<td>- Unidirectional Granger causality was found between monetary variables and the equity market.</td>
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<tr>
<td>- IRFs indicated that the interest rate shock and the exchange rates both have had a negative impact on equity returns, whereas the money supply has had a positive impact on the equity market.</td>
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<tr>
<td>- The conditional market returns had a negative significant relationship with interest rates, indicating that it was easy to predict the stock returns by analyzing interest rates.</td>
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<td>- The</td>
<td>Pakistan</td>
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<tr>
<th>Zafar et al. (2008)</th>
<th>A GARCH Model</th>
<th>90 Days T-bill Rate</th>
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<tbody>
<tr>
<td>- The conditional market returns had a negative significant relationship with interest rates, indicating that it was easy to predict the stock returns by analyzing interest rates.</td>
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<td>Pakistan</td>
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2.5 MICROECONOMIC FACTORS AFFECTING FOREIGN STOCK MARKETS

It is strongly believed and supported by different economic theory and many empirical evidence worldwide that prices in stock market is significantly influenced by many micro economic factors. Different scholars used variables like the amount of dividend, dividend yield, dividend announcement, rating announcement, price earnings multiples, initial public offerings, earnings per share, accounting profit etc to notify its significance. This section reveals an important initiative to determine the significance of the relationship between stock price and microeconomic factors by creating a linkage among them.

In an early study Durand (1957) investigated the association between different fundamental components and companies stock returns. Earnings per share, book value per share, DPS for banking sector and four groups of public utility stocks were taken for the consideration. The study found that the dividend payout is most significant determinants to explain the variation in stock prices of the sector under consideration.

The Gordon model (1959) states that the value of a stock is dependent on the dividend per share and the difference between discount rate and the long term divided growth rate. The said conclusion was made after studying the relationship of samples shares prices with DPS, EPS, BVS, and growth of four industries for two years. The study only found coefficient of dividend per share had a significant and positive relationship with share price. The model assumes that the discount rate will remain same forever and there will be constant growth rate. The theory suggests that the
increase in dividend rate will result a simultaneous increase in the share value of the firm.

The theory of Modigliani and Miller (1961) contradicted the assumption that was led by Gordon (1959) and suggested the dividend irrelevance on the value of share price because other means of financing offset dividend impact and thus make it irrelevant assuming perfect market conditions. However, since the market is neither perfect nor complete, the theory needs to be considered carefully by focusing on effects of taxes, asymmetric information, transaction cost and other anomalies.

Benishay (1961) examined 56 companies for four years (1954-1967) in the influence of companies like trend in earning, trend in market value of equity price, dividend payout ratio, and expected stability of equity price, size, and liquidity of its share and debt equity ratio on earning price ratio. The study reported a negative and significant coefficient of dividend payout ratio and debt equity ratio in all the estimated equation. The study further reported a negative value of the coefficient of trend in market value of equity shares.

Fisher (1961) investigated the effects of DPS, Retained profit per share and size index on price per share constituting the sample of 5 industries. The study explored Dividend to be a most significant determinant on the share price variations. The undistributed profit of the last year also held accounted for share price change. However, the growth rate in DPS appeared to be insignificant. Also the coefficient of the size index was found to be reasonably stable over a span of time.

The leading proponents of the bird-in-the-hand theory (Gordon, 1962; and Lintner, 1962) found dividend and growth as a highly significant variable to explain share price behavior for the year 1954-58 for food and machine industry. While, the study did not find any influence of asset liquidity and debt maturity variable on share price variation.

Wippern (1966) studied 50 companies for 4 years involving several industries to observe the share price dynamism due to the impact of leverages, payout, size, growth and industry on earning -price ratio. The result explained that variables such as coefficient of growth, payout, and size were significantly associated with share price variation and further, linearly increasing relationship between equity yield and leverage was reported in the study.
Arditti (1967) regressed the required rate of return on equity on variance, skewness, and market correlation of a firm's return. Then the study examined the impact of debt equity ratio and dividend payout ratio on the required rate of return. Finally the combined effect of all the variables in the estimated equation for all the firms listed in S&P composite Index of industrial, Railroads and Utilities for the year 1946-1963 was investigated. The findings revealed that variance of distribution of the required rate of return turned significantly positive and coefficient of skewness of return and coefficient of a debt equity ratio to be significantly negative at one per cent level of significance.

Bower, R. and Bower, D. (1969) examined the relevance of P/E ratio with respect to growth, payout ratio, marketability, conformity variable, and price variability in their study "Risk and Valuation of Common Stock". The study found that P/E elasticity is more positive with payout ratio than with respect to growth. The study also found positively elastic relationship of marketability, conformity variable and price variability with Price earnings ratio. Further, the study suggested that the firm’s effect better explain the price earnings ratio than any other variable.

Malkiel and Cragg (1970) in "Expectation and the Structure of share prices" which sampled 178 companies for a span of 4 years from 1961-65 explored a highly significant relation of growth variable with share price. The coefficient of payout and risk measurement found to be insignificant with expected signs. Further, the coefficient of the operating risk variable was also statistically insignificant and had the wrong sign in 1964, whereas the financial risk coefficient always estimated the right sign and statistically significant too.

Wayne & Campbell (1998) provided a global asset pricing perspective on the debate over the relation between predetermined attributes of common stocks, such as ratios of price-to-book value, cash-flow, earnings, and other variables to the future returns. The study presents an empirical framework for attacking the problem at a global level, assuming integrated markets. The study presents new evidence on the relative importance of risk and mispricing effects, using monthly data for 21 national equity markets. The study found that the cross-sectional explanatory power of the lagged attributes is related to both risk and mispricing in the two-factor model, but the risk effects explain more of the variance than mispricing.
Balke and Wohar (2005) looked at the matter in a different perspective and favored the theory of stock prices. The authors argued that stock prices are determined by the future real dividend growth. They used the quarterly data for a period during 1953:2 to 2001:4. They tried to decompose the stock price movement due to the future expectations from real dividend growth, real interest rate, and excess returns using the estimated VECM model and equation. The time series analysis was implied on the data collected and the inferences drawn indicated that there was a significant negative correlation between dividend growth and real interest rates with stock price movement.

Jin Dehuan and Zhenhu Jin (2008) investigated correlation between firm performance (Return on Equity, earning per share, profit margin, return on asset, changes in sales, and total asset turnover) and stock price of the top performing stocks listed on Shanghai Stock Exchange study. Their study shows that all the variables are significantly correlated with stock price in the year before crisis. However, in the crisis period the firm performance have no explanatory power toward stock price movement.

Uddin (2009) analyzed the relationship of microeconomic factors with the stock price by using multiple regression analysis. This research found a significant linear relationship among market return and some microeconomic factors such as net asset value per share, dividend percentage, earning per share of bank leasing, and insurance companies. He also found that non-linear relationship among the variables is insignificant at 95 percent level of significance.

G.R Fisher (2009) determined the relationship between British share prices and different quantitative variables. It showed the impact of dividends, undistributed profits, and company size on share prices taken from five cross sectional samples of equities quoted on the London Stock Exchange between 1949 and 1957.

Comprising a sample of 130 firms and seven explanatory variables Somoye, Akintoye and Oseni (2009) conducted his research to explain the determinants of equity prices for Nigerian share market. The seven factor comprises a mix of fundamental as well as major macroeconomic constituents viz. EPS, DPS, GDP, lending interest rate, crude oil prices, exchange rate and inflation rate. The result of
the study demonstrated that except lending interest rates and rate of inflation all other variables had a positive correlation with Nigerian stock market.

Belaluddin (2009) used the data of the banking, leasing and insurance companies to find the impact of stock price determinants in Bangladesh. The archival data was collected from the annual reports of the 62 companies from a population of 86 financial companies listed on Dhaka Stock Exchange during the time period from Dec 2007 to Nov 2008. The effect of net asset per value per share, dividend percentage and earnings per share i.e. independent variables were determined on dependent variable i.e. market price of stock by using two regression models i.e. linear function model and logarithmic function model. The results showed a linear relationship between market price and net asset value per share, dividend percentage, earning per share while the net asset value per share explains much of the variation in stock price.

Sunde and Sanderson (2009) provide a review on the determinants of share price with regard to the Zimbabwe Stock exchange. The interview and archival method of data collection were used in this study and the companies listed on Zimbabwe Stock Exchange were studied. This study argued that the market price of the stocks is affected by economic, political and social factors. Some micro factors which are discussed in this article are corporate earnings, management strength, lawsuits, and information about possible merger and takeover. Other factors discussed include market liquidity and stability, availability of substitutes for investment, government policy, macroeconomic fundamentals like interest and inflation rates, investor sentiment, technical influence and analyst reports. This article was exploratory in nature and its major purpose was to identify and discuss the factors that might have an influence on the stock market price of Zimbabwe.

Another study conducted in Malaysia also provided the evidence regarding the effects of microeconomic factors on the stock market volatility. The study conducted by Abdul Rehman, Zahirah, Siddique and Tafri (2009) considered the variables of money supply, interest rate, exchange rate, reserves and industrial production index as independent factors and uses VAR frame work to access the effects of these variables on stock market volatility for both long term and short term dynamics. The results indicated that there exist a stronger co-integration between the stock market index, reserves, and industrial production index, money supply, interest rates, and exchange
rates. The association was positive with reserves and industrial production and negative for interest rate, money supply and real exchange rate.

**Al- Shubiri (2010)** investigated the relationship of microeconomic factors with the stock price by using Simple and Multiple regression analysis. 14 commercial banks of Amman Stock Exchange, for the period of 2005 -2008, were selected for the study. The study found highly positive significant relationship between market price of stock and net asset value per share; market price of stock dividend percentage, gross domestic product. It also found negative significant relationship on inflation and lending interest rate.

**Faris AL - Shubiri (2011)**, investigated the determinants of the dividend policies of the 60 industrial firms listed on Amman Stock Exchange (ASE) for the period of 2005-2009, and to explain their dividend payment behavior. In this study, the Tobit regression analysis and Logit regression analysis were used. The results show that, there is a significant effect of Leverage, Institutional Ownership, Profitability, Business Risk, Asset Structure, Growth Opportunities, and Firm Size on the dividend payout in listed firms of Amman stock exchange as the same determinations of dividends policy as suggested by the developed markets.

**Sanjeet Sharma (2011)** examined the empirical relationship between equity share prices and explanatory variables such as: book value per share, dividend per share, earning per share, price earnings ratio, dividend yield, dividend payout, size in terms of sale, and net worth for the period 1993-94 to 2008-09. The results revealed that earning per share, dividend per share, and book value per share has significant impact on the market price of share. Furthermore, results of study indicated that dividend per share and earnings per share being the strongest determinants of market price, so the results of the study supports liberal dividend policy and suggests companies to pay regular dividends.

**Khan & Amanullah (2012)** investigated the different determinants of share prices and the relationship of these determinants with the share prices of Karachi Stock Exchange (KSE) 100 index of Pakistan. 5 quantitative determinants, namely Book to Market (B/M) ratio, Price Earning (P/E) ratio, Dividend, Gross Domestic Product (GDP), and Interest Rate were selected to find out the direction and strength of relationship. A sample of 34 companies has been randomly selected from 34 sectors
of KSE. Ten years’ (2000-2009) data has been collected for the sample companies. The tools used for analysis are Linear Multiple Regression and Correlation Model. It has been concluded that all the factors selected have positive and significant relationship with share prices except Interest rate and B/M ratio. The rise in GDP, dividend and P/E ratio leads to rise in share prices. B/M ratio and interest rate are negatively related to share prices.

In a study for Nigerian stock market **Uwuigbe, Olowe, Olusegun, and Godswill (2012)** selected a sample of 30 listed firms. A Judgmental sampling technique was used to analyze the annual reports for the period 2006-10. The research study also used a regression analysis method to model the influence of company's fundamental factors like financial performance, dividend payout and financial leverage on the market share price of the sampled firms. The study reported a positive and significant association between firm's financial performance and share prices. The paper concluded that dividend payouts, financial leverage and financial performance are significant determinants of share price in Nigeria.

### 2.6 MICROECONOMIC FACTORS AFFECTING THE INDIAN STOCK MARKETS

There is no dearth of the scholars who found fundamentals of companies and industries more enriched than any other variables for Indian stock market. However, a weak form of efficiency is largely a drawback for developing countries like India where the regulatory, political system and information symmetry is less proficient to attract the confidence of the investors and provide the sufficient basis for investigating the market without inconsistency.

In an early study, **Desai (1965)** investigated the impact of company's fundamentals like dividend per share, Earning per share on the market price by employing linear regression model. Analogous with **Gordon (1959) Desai (1965)** also concluded that dividend make a positive impact on the share price behavior. However, the effect of coefficient of retained earnings and earnings per share were insignificant.

**Srivastava (1968)** found insignificant influence of retained earnings while dividend per share was the most prominent variable in a study of six industry viz. a viz. cotton, textile, tea, sugar, electric, coal, and paper.
Likewise, Sarkar (1971) also found the same result using time series data and concluded that there is no influence of retained earnings on share price, while dividend was the strongest variables to influence share price behavior.

Kumar and Mohan (1975) used cross section data of dividend, retained earnings and tagged price as independent variables of five industries and found that cotton textiles was most significantly impacted by retained earnings while dividend explained the share price behavior better than retained earnings for electrical and engineering industries.

The impact of elements like dividend, price dividend multiplier, growth in income, risk, leverage and size on the market share prices were measured by Chandra (1978) with the help of log linear regression analysis. The result supported that size, growth and return had a significant and positive effect over the market share prices, while leverage and risk had an insignificant effect.

Bhole (1980) found earnings per share and dividend as the main determinant of share price. The study revealed that earning per share better explained the share price variation than dividend.

Zahir and Khanna (1982) studied the relation among share price, dividend per share, book value per share, yield, earning rate and coverage in 101 industrial giants for the year 1976-77 and 1977-1978 by using multiple regression model. The attempt disclosed dividend and yield as a significant determinants of share price, whereas, yield showed a negative association. While book value emerged to have a high positive significant relation with share price except in 1977-1978. However, the study found a very weak association with earnings price multiplier.

Krishnan (1984) studied variables like Dividend per share, EPS, Book value per share, cover and yield, and concluded that DPS and Book value per share explained the behavior of share price significantly. However, factors like EPS and cover emerged to be very weak explanation of the variation in the market share price.

Dixit (1986) investigated 43 sample companies and found DPS, EPS, ROI, Size and BPS as significant variable to explain the fluctuation in market share price. The other factors like leverage and growth variables failed to explain the variation in a detailed macroeconomic study.
Kumar and Hundal (1986) examined three industrial groups namely textile, chemical and engineering and attempted to measure the influence of dividend per share, net sales per share, book value per share, earning per share, net worth, retention ratio, leverage ratio and growth in total assets on market share price by employing the linear regression model. The result reported dividend per share as a significant variable to explain the variation of the market movement of these three groups. Growth emerged to have a positive effect on textile industry. Whereas, leverage had a negative influence on the share price movement in general.

Chawla and Srinivasan (1987) also found dividend and retained earnings as significant explanatory variables in case of a chemical industry, however, the dividend turned to be more significant than retained earnings.

Highlighting some prominent variables Sharma (1989) studied the share price variation of cotton industries in India. A sample of 30 companies from BSE for the period from 1976-1980 were considered for study. Variables like growth, dividend payout ratio, variability in earnings and variability in market prices, leverage and size were defined as significant which explained 67% of the total variation in the P/E ratio.

Mahapatra and Sahu (1993) studied six fundamental factors viz. a viz. ROI, Size, dividend, yield, EPS, and book value per share to estimate a model that can explain the equity price variations of Group A shares employing time series analysis. He concluded a significant relation of dividend and yield to represent variations in the prices behavior. However, other variables found no significant relation.

Malhotra and Prakash (2001) investigated micro variables such as book value per share, P/E ratio, market price to book value, change in net sales and EPS on Group A and Group B shares over a period from 1989-98 with the help of correlation and regression analysis. The study evidenced book value per share, earning per share, dividend per share, P/E ratio and market price to book value ratio to be the main determinants of 'B' group share prices. Chakrabarti (2001) disclosed a positive change in stock market return result from a change in FIIs during pre Asian crisis period. However, this relationship was reversed later on i.e., during post crisis period. As regards the effects of financial variables such as dividend yield, its variability can be attributed to the variation of expected cash flow growth (Ang and Bekaert
(2001)). In general, financial ratios can predict firm’s ability to future cash flows and thus overall stock return of the economy.

In an attempt to study the consistency of equity return with fundamentals of companies in Indian market, Amilan (2004) found no significant influence of any fundamental factors on the textile and electrical application industries.

Mahapatra and Lall (2004) disclosed a significant influence of dividend per share in the investment decision making process of Indian investors. The research observed a negative but significant relationship between yield and market share price. Furthermore, the attempt presented no significant relationship of Book value per share, ROI, leverage, size, EPS with share price.

Singhania (2006) investigated the role of company's fundamental as the main determinants of equity price movement during 1997-2004 using multiple regression analysis. Different variable taken for the study included dividend per share, book value per share, EPS, P/E ratio, dividend cover and yield. The study found DPS, EPS, P/E ratio and BPS as the significant determinants explaining the variation in the equity share prices, whereas dividend cover and yield turned positive but insignificant determinants.

Sharma and Singh (2006) conducted an empirical work on the fundamental factors of the companies using data from 160 Indian firms between 2001 and 2005 and evidenced that earnings per share, price-earnings ratio, dividend per share, dividend coverage, dividend payout, book value per share, and firm size are the determinants of share prices.

Das and Pattinayak (2009) evidenced a positive and meaningful impact of fundamental factors like ROI, growth prospects, higher earning power on the behavior of stock market return proxies by Sensex.

Shobhana and Karpagavalli (2011) measured the influence of company's fundamentals on equity returns (BSE) of selected 12 group 'A' and 12 group 'B' banking shares during the period 2000-10. The study reported a significant influence of factors like size of the companies, and dividend yield on group 'A' shares prices. While, book value per share impacted the group 'B' share price more significantly than other factors.
Nirmala, Sanju, and Ramachandran (2011) studied fundamental variables on three selected sectors namely Auto, health care, and public sector of the Indian economy over the period of nine years from 2000 to 2009 and used a modified ordinary least square method to draw inferences. The study concluded dividend, EPS and leverage to be significant determinants of share returns for all the three sectors while profitability was found to be only significant for auto sector.

Mahapatra and Biswasroy (2011) conducted a study to identify the effect of key fundamental and technical variable on the Indian capital market choosing 27 actively traded company's sample over a period of 14 years. Multiple regression techniques was employed to disclose that 87% of variation on Indian share prices were accountable to fundamental variables like DPS, EPS, ROI. While, technical factors like security price index and GNP explained around 81% of the changes in share prices.

Bhatt and Sumangala (2012) collected data about EPS and market value of equity share of 50 companies from 2006-07 to 2010-2011 and concluded that EPS impacts the market value of an equity share in the Indian context.

By applying multiple regression models Jadhav and Badade (2012) researched the role of fundamental factors on the market share price of ten selected sectors. The study involved the influence of DPS, dividend yield, EPS, BPS, PE ratio over 15 companies in his sample. The result disclosed significant and positive association of EPS, DPS, PE ratio and dividend yield in the health care sector. Further, DPS, BVS, P/E ratio, and dividend yield reported to have significant association of IT sector with market price per share.

Srinivasan (2012) examined the cross section data of six major sectors of the Indian economy vis. a vis. Pharmaceutical, IT, Energy, ITES and Heavy, Manufacturing and infrastructure and Banking as an independent variable to study the behavior of Indian share prices. The study employed panel data techniques like random effect models, fixed effect models consisting of annual time series data from 2006 to 2011. The result evidence that the Pharmaceuticals, Energy and Infrastructure has a negatively significant impact with DPS. These results are consistent with findings of Zahir and Khanna (1982), Malhotra (1987) and Sharma (2011). The study also revealed that manufacturing, pharmaceutical sector; energy, infrastructure and commercial banking
sectors share prices are positively associated with P/E ratio and EPS. Size of the companies was found to be a significant determinant of share price of all sectors except manufacturing. Furthermore, the study concluded that BVS positively influence pharmaceutical, energy, IT & ITES and Infrastructure share prices variation.

Malhotra & Tandon (2013) recently explored the relationship between Indian stock price (NSE 100) and companies fundamental. The study sampled 95 companies and observed over the period from 2007 to 2012 with the help of linear regression models. The study found that EPS, P/E ratio are positively associated with firms stock price dynamism while, dividend yield had a negative association with the firm's share price.

2.7 ECONOMIC VALUE ADDED: PERFORMANCE MEASURES, STOCK RETURNS AND WEALTH CREATION

The use of Economic Value Added as a measure of performance began with Stern, Stewart and Company (Stewart, 1991; Stern et al., 1995), an American consulting firm that claims to have developed (and trademarked) the EVA measure to improve the way companies could evaluate everything from business strategies to the relative performance of divisions. Much of the management accounting literature focuses on these areas. For example, O'Hanalon and Peasnell (1998) and Sheikholeslami (2001) look at EVA as a means of rewarding divisions that produce a positive EVA within the firm. EVA is also used to forecast stock market performance and investment decisions. Papers in this area include Faris et al. (2002), Freedman (1998), Garvey and Milbourn (2000), and Griffiths (2006). Stern, Stewart and Co. has a database that ranks US firms according to EVA and other measures with a view to assisting with investment decisions.

Stouhgton and Zechner (2007) supply the economic foundations for economic value added, developing a theoretical model of optimal capital allocation with asymmetric information, and extend it to a multi-divisional firm, where managers are assessed based on the value they add to the firm. These authors define value added as:

$$EVA_i = \sum \mu_i(\sigma_i)\theta_i - r_d(\sum \sigma_i - C_i) - r_e C_i$$
where:
\[ r_E : \text{the cost of capital} \]
\[ r_D : \text{the cost of debt or deposits} \]
\[ \sum A(t) : \text{total financing requirement} \]
\[ C_t : \text{equity capital; the rest of the of the financing requirement is met by debt} \]
\[ \sum \mu(s) \theta : \text{the sum of cash flows over all divisions of the financial institution} \]

The study of (Gary, Wallace, Biddle, & Bowen, 1997) revealed that EVA is highly associated with stock return as compare to accrual earning but when studied for the component of EVA information content analysis and incremental analysis suggest the higher association of earning with return and thus outperforming EVA in relation to stock return. This study is about rewarding employees on the basis of EVA as performance measure for the creation of wealth. It was find out by (Griffith, 2004) that firms using EVA as performance measure and considering as a contribution to firms and then pay the employees on this bases had suffered losses thus revealing the insignificance of it usage as a performance measure.

The paper is about the empirical evidence of the information content lying in EVA, RI and accounting earning but the research is showing no favor in the relationship of EVA with stock return and net income is outperforming both Residual income and EVA while taking the contribution of these variable. The study explored that how EVA is more powerful in explaining the stock return as compared to the other traditional indicators of performance like NI, RI and OCF (Kyriazis & Anastasssis, 2007).

The increasing trend for value creation has forced the researcher to find a trade mark measure of the firm financial performance on the basis of which the compensation plan can be develop to motivate the manager to work for the share holder worth creation. Here (Worthington & West, 2001) in this paper a generalized view of this performance measurement components known as EVA with respect to adjustment in GAAP is under observation. EVA is in favor of the share holder as it is explaining the value of the firm in the form stock return as compare to other traditional indicator and thus leading to the operating efficiency of the firm (Lehn & Makhija, 1997) and (Zimmerman, 1997).

The indicator to gauge the shareholder value, beside the traditional instruments EVA is also used to measure the performance of the firm and affects the stock return of the firm (Stern, Stewart, & Chew, 1995).
Anand, et.al. (1999) revealed that EVA, REVA (Refined Economic Value Added) and MVA are better measures of business performance than NOPAT and EPS in terms of shareholders’ value creation and competitive advantage of a firm. Since conventional management compensation systems emphasize sales/asset growth at expense of profitability and shareholders’ value. Thus, EVA is a measure that shifts focus on an organizational culture of concern for value.

Banerjee and Jain (1999) examined the relationship between shareholder wealth and certain financial variables. This study was conducted with a sample of top 50 companies from Drugs and Pharmaceutical industry. This study concluded that out of select independent variables, EVA has proved to be the most explanatory variable and the capital productivity is a predictor of shareholder wealth.

Madhu Malik (2004) examined the relationship between shareholder wealth and certain financial variables like EPS, RNOW and ROCE. By using correlation analysis, it was found that there was positive and high correlation between EVA and RONW, ROCE. There was a positive but low correlation between EVA and EPS. By using coefficient of determination (r^2), EVA was compared with Traditional performance measures and it was found that not a single traditional performance measure explains to the fullest extent variation in shareholder wealth.

Panigrahi (2005) examined how the Economic Value Added (EVA) is superior to Market Value Added (MVA). This has been examined by financial performance of ITC Ltd, which has adopted the EVA as its performance measurement. This study found that by increasing Economic Value Added (EVA), Shareholder Wealth is created and established the fact that the Economic Value Added (EVA) is superior to the Market Value Added (MVA).

Bhayani (2006) studied economic value added of Cholamandalam Investment and Finance Co. Ltd for the period of 1998-99 to 2002-03. The company has been successfully able to create value for its shareholders. The company’s earnings are much higher than the overall cost of capital. The traditional performance indicators are showing quite high values of ROCE, EPS growth as compared to EVACE. It is observed that the traditional parameters indicated quite a rosy and healthy picture of the company during all five years of the stuffy.
Kaur and Narang (2009) in his study an attempt has been made to explain the application of EVA for selected companies. The sample for the study was top 205 companies has been selected form BT-500 India’s most valuable companies. The study period was of 12 years (1995-96 to 2006-07). The results of the study indicated negative EVA for eight years consecutively.

Chauhan and Bhayani, (2010) has examined the impact of mergers on shareholders' value creation in Indian industry. This study includes companies which have undergone merger during the period 1st April, 1999 – 31st March, 2000. There are about 196 merged companies in India during above period and they have selected 56 firms for the research to examine pre and post merger performance of firms covered under the study. The result suggests that firm’s shareholders value creation is highly dependent on operating expenses, profit margin, ROCE and expense ratio. The inter company and inter industry analysis results indicated there is no positive impact of mergers on shareholder value creation.

Khatik and Singh, (2010) studied economic valued added in 10 selected companies of India for the period of 1998-99 to 2007-08. The results of the study indicated there isn’t any uniform EVA trend in selected firms.

Sharma and Kumar (2010) have analyzed effectiveness of Economic Value Added in selected companies for the period of 2001-02 to 2008-09. Researcher has used traditional measures along with EVA to measure effectiveness of the firm. The result of statistical tools reveals that except few majorities of the sample companies are able to continuously create value for their shareholders during the study period. The study finds that EVA is gaining popularity in India as important measures of firm performance.

Sakthivel (2011) analyzed shareholder's value in Indian pharmaceutical industry for the period of 1997-98 to 2006-07. It is concluded that the companies under pharmaceutical industry have succeeded to meet public expectations in terms of shareholders’ value creation through EVA either by increasing operating income from assets in place through reducing cost of production or increasing sales, or reducing the cost of capital by changing the financing mix in capital structure. This study showed that shareholders’ value creation tend to go up every year for pharmaceutical industry since 2000-01.
2.7.1 THE INDIAN CONTEXT

India has found supporters for EVA. It has already earned favor with journalists and leaders in corporate reporting. However most of them do not calculate EVA rigorously, rather they take casual approach in calculating and reporting EVA. The annual report of Infosys Technologies limited that has won prestigious ‘best presented annual report’ being awarded by the Institute of Chartered Accountants of India (ICAI) for five years in this context.

The study published by Economic times reported that neither adjusted book capital to bring it closer to economic capital nor used rigorous model to compute the cost of equity. Perhaps the short cut was adopted by the study to circumvent difficulties in estimating equity and converting book capital into economic capital. Infosys Technologies Limited known for its transparency in financial statements may be considered a pioneer in reporting EVA in annual report. A perusal of the EVA statement published by Infosys in its annual report for the year 1999-2000 reveals certain important shortcomings. Infosys has used book capital for computing EVA. It has not carried out any adjustment for converting book capital into economic capital. This distortion may not be material because in year 2000 it spent less than one percent of total revenue in research and development expenditure. Similarly it has not adjusted the net income figure to bring it closer to the amount of cash flow generated by the firm. According to proponents of EVA, these adjustments are important in computing EVA.

The cost of equity used by Infosys is also questionable. It has used CAPM for estimating the cost of equity. It has a uniform beta variant of 1.48. The average beta variants for software stocks in US for all the four years (1997-2000) covered in the statement. It appears that the beta variant has not been adjusted for sovereign risks and other factors. This might have distorted cost of equity. Moreover, it is not clear why a uniform beta should be used for all the years. It is now well established that beta does not remain constant over a long period, therefore it is appropriate to compute beta separately for each year. Similarly it has used market premium of 8 percent, 9 percent, 10 percent and 10 percent for all the years 2000, 1999, 1998 and 1997 respectively. It appears that market premium has been estimated on certain assumptions best known to the preparers of the EVA statement. It is difficult to estimate the market premium in volatile markets, therefore in computing EVA there is
no option but to estimate market premium based on certain assumptions. This makes EVA computation highly subjective therefore, in the absence of disclosures of those assumptions, the informative value of the EVA reduces very significantly and it carries only ornamental value to decorate the annual report. Therefore, it may not be inappropriate to conclude that EVA figures reported in the annual report are incorrect.

The above analysis shows the difficulties in computing EVA and also that companies are unable to resolve those difficulties. However the popularity of EVA has tempted the companies to report EVA as a public relations measure, even if such reporting is misleading. Indian companies have started using EVA for improving internal governance. The Tata Iron and Steel Company (TISCO) is using EVA to measure performance of its mines and other business segments. Managers of the company find the measure quite useful and are highly enthused by the use of this measure. It is expected that EVA will gain popularity more as a management planning and control tool.

Reddy and Yuvaraja Reddy (2007) made an attempt to calculate MVA for 10 cement companies in India to examine the effect of selected variables on MVA. The researcher used Multiple Regression technique for fulfilling the objective. The study concluded that no factor influenced Market Value Added and Earning Per Share and that the profitability of the selected companies could not be increased unless the improved problems like modernization, cost reduction, control taxes and the like were solved.

Ashok Kumar and Karambal (2000) stated that "Shareholder value creation is based on the principle of the survival of the fittest of economics. As our economy, approaching towards complete liberalization and government control is gradually going away, and hence companies are bound to take decisions purely on commercial basis to safeguard the interest of their shareholders.

Mohanty (2008) clearly recommended that "the shareholders investment in equities should first focus on the value of the company rather than the share price consistency. Profitability and sustainability are the key drivers to the valuation of growth. What makes growth valuable is its power to compound returns over a period of time. Mid-cap stocks have the propensity to create wealth faster than the heavy weight blue chips but the surety of wealth creation is greater for large cap stocks capital."
Pratapsingh Chauhan (2012) has examined the shareholders’ value creation in the Indian petroleum industry. He has analysed the performance of the company with the help of EVA, MVA, Net Operating Profit after Tax (NOPAT), Profit After Tax (PAT), Market capitalization and Earning Per Share (EPS). The study revealed that the EVA has significant correlation with Operating Profit (OP), NOPAT, EPS, Market Capitalization and MVA figures of firms belonging to Private and Public sectors. The correlation between EVA and OP for public and private sector petroleum firms has been high and positive.

Ritesh Jayantibhai Patel, Mitesh Patel (2012) have examined the Impact of Economic Value Added (EVA) on Share Price: A Study of Indian Private Sector Banks. The study concludes that in the year 2010, ICICI bank had the maximum NOPAT. The value of EVA ranged from 14.1 per cent to 91.14 per cent during 2010. Only Kotak Mahindra bank had positive correlation between EVA and Kotak Mahindra Bank share price.

Pal and Sura (2007) reviewed 25 empirical studies published in various journals related to relationship of EVA and stock returns. They have only reviewed the results of the studies and have not considered other issues prevalent in EVA research such as EVA-MVA relationship.

Ramana (2004) believes that the development in the Indian capital market, both in depth and breadth along with the increased awareness among the shareholders, has increased the pressure on the companies to consistently perform better.

Turvey et al. (2000) studied the relationship between EVA and stock market returns for a sample of 17 publicly traded companies. The key finding was that no relationship could be found between the two.

Keef and Rush (2003) examined the link between EVA and stock price reaction. They found similar results with Turvey et al. (2000).

The detailed review of literature indicates that very few studies have been conducted in India to study the shareholders value creation. In India companies are using EVA internally as a performance measure for improving productivity that would lead to enhancement of shareholder value. However, a dangerous trend has also set in, to use EVA casually for external reporting. This trend should be stalled as such reporting might mislead users of those reports. The foregoing discussions on the existing
studies have used either time-series or cross-section data. There have also been
attempts to identify and document the determining share price factors using panel
data.

A review of the available literature of empirical studies on share price
determinants indicates that host of factors explained the equity share price behavior. However, these studies attempted with different time period and choice of econometric methodology presented varied results.

2.8 CONCLUSION

This review has provided a systematic overview of the major determinants of
stock prices in India and the rest of the world. It identifies two areas of particular
concern firstly, the effect of the unwinding domestic and international imbalances,
and secondly the influence produced by internal forces of the company's operations.
The work aims to define a framework in order to document the major factors affecting
stock markets worldwide. I institute in my discussion that there are economic,
political, social, international (categorized as macro level) and certain company's fundamental variables (micro level factors) that are influencing stock prices in the market. However, trading and active portfolio management demand sophisticated and quick brain functions which may often be tempered by certain immeasurable variables and emotional response such as fear, sentiments, regulatory framework, culture etc. However, all these variables has their own relevance collectively as well as individually. An Investor's behavior sometimes may imply that significant variations in prices are not necessarily linked with the flow of information on economic or financial variables but may also correspond to the direction and intensity of the crowd effect or herd behavior. The review of empirical studies also disclosed the fact that given the macroeconomic and micro economic evolution of the past 5-6 decades and their impact in the stock market return behavior, the markets underwent a dramatic change over a span of time. The reviews also present the intensity of changes in asset price in India due to regulatory and structural changes after the initiation of economic reforms.

REFERENCES


