CHAPTER-2

Survey of Literature and Plan of the Work

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2.1 Review of Literature

A proper review of literature is essential for identifying the research gap, so that the research work can be addressed towards fulfilling this gap. In case of the present work, the review of literature has been divided into two parts. First we have considered research efforts directed at identifying linkages among different stock markets or between stock markets and elements of the real economy. Next we throw some light on research into the inter-relationships between the stock and commodity markets.

There have been various attempts at studying the degree of interrelationship among capital markets around the world. A major portion of such research has concentrated on evaluating the relationship between the real economy and the capital markets in various countries. Among the earliest works in this direction are those by Agmon (1972) and Ripley (1973), which point towards some type of weak linkage among the share markets in developed markets, the low inter-linkage being attributed to factors like trade barriers and lack of information transmission.

A study by Eun and Shim (1989) related to markets in Australia, Canada, France, Hong Kong, Germany, Japan, Switzerland, UK and US during the period 1980-85 detected inter-dependency among them. Similar inter-dependency was also found among developed markets in Asia, Europe and USA by Koch and Koch (1991).

The vector error correction model was utilised by Hassan and Naka (1996) in case of Japan, Germany, UK and US over the period 1984-91 to demonstrate short-run and long-run interdependency.

Comincioli and Wesleyan (1996) tried to examine the causal relationship between stock prices and the economy in case of the USA using quarterly data over 24 years.
Using Granger Causality Test, they found that stock prices Granger cause economic activity, but not vice versa.

The cointegration was employed by Chowdhury (1997) in case of the USA and Latin American countries like Argentina, Brazil, Chile, Colombia, Mexico, and Venezuela for data covering the years 1989 to 1993. The results indicate cointegrated movement among these markets. Similar methodology was used by Masih and Masih (1997) to establish interdependency amongst Asian markets and the developed markets during the period 1992-94.

Evanor D. Palac-McMiken (1997) has also utilised the method to determine whether the ASEAN markets are collectively efficient. On the basis of the results it is concluded that except for Indonesia all other markets under consideration are linked with one another. From this it is surmised that these markets were not collectively efficient during the period from 1987 to 1995. However, in spite of this apparent interdependence among the markets, the author points out that an investor can still opt for efficient portfolio diversification across these markets.

Issam, Abdalla and Murinde (1997) examined the interaction between exchange rates and stock prices in four emerging markets viz., India, Pakistan, Korea and the Philippines a bivariate vector autoregressive model based on monthly observation data. Excepting the case of the Philippines, the authors have been able to detect unidirectional causality from exchange rates to stock prices. According to them governments should be cautious in their implementation of exchange rate policies, since such policies can have major implications for their stock markets.

A study by Naka et al. (1999) examines the relationship between the BSE Sensex and five macroeconomic variables, viz. – the Index of Industrial Production (IIP), the Consumer Price Index, money supply, interest rate and inflation. The unique feature of this study is that it involved a comparison between the pre and post reform performance employing the techniques of cointegration and vector error correction. It was found that IIP was the largest positive determinant of stock prices, while inflation is the largest negative determinant.
A different perspective is provided by the effort of Pethe and Ajit (2000) where they look into the inter-relationship between stock indices like the Sensex and the Nifty on one hand, and significant macroeconomic variables like the rupee-dollar exchange rate, the prime lending rate, narrow money supply, broad money supply and the IIP. The methodology involved the use of unit root testing, cointegration and error-correction models. The results indicated no cointegration among the variables; further, it was suggested that though the economy is influenced by both the stock indices considered, these indices did not have any impact on the IIP.

Another work by Panda and Kamiah (2001) relates to the causal relations and dynamic interactions among monetary policy, expected inflation, real activity and stock returns in the post-liberalisation period. Here the vector autoregression method was utilised to make conclusions regarding the relationship among variables like monetary policy, expected inflation, real activity and stock returns.

Evidence of cointegration among Latin American countries like Brazil, Mexico, Chile, Argentina, Colombia and Venezuela was found by Chen, Firth and Rui (2002). Bhattacharya and Mukherjee (2002) used unit root tests, cointegration and the long-run Granger causality test to the causal relationship between the BSE Sensex and five macroeconomic variables. The conclusion was that there is no linkage between stock prices and money supply, national income and interest rate; the IIP induces increase in stock value; and there is a two-way causality between stock prices and the rate of inflation.

Yet another attempt at establishing the relationship between real economic variables and the stock market in an Indian backdrop was undertaken by Vani et al (2003). Similar efforts were also taken up by Chakravarty (2005).

Islam (2003) has carried out a study for the Malaysian economy where he has dealt with short-term dynamic adjustment and long-run equilibrium relationships among variables like interest rate, inflation rate, exchange rate and IIP. For this purpose he has utilised the error correction modelling technique. The results indicate a variety of short run and long run relationships among these variables.
Osman and Yakup (2003) have undertaken a study devoted to examining the relationship between the Turkish Stock Market and macroeconomic variables like money supply, dollar exchange rate, trade balance and the index for industrial production. Here they used Engel-Granger and Johansen-Juselius cointegration tests and Granger Causality Test for the purpose of determining the long-run relationship among the variables.

Dritsaki (2005) has performed some empirical tests in order to examine the long-run relationship between the Stock Market Index of Greece (GEN) and variables like industrial production, inflation and interest rates. The Granger Causality Test was once again applied for identifying the causal relationship among the variables.

The interaction between the real and financial sectors of the Canadian economy formed the focal point of the study by Gauthier and Fuchun (2005). They considered a long-run relationship for the determination of output, stock market and term structure of interest rates. The study utilised the Vector Correction Model over six variables.

Chandrasekhar and Jayati (2005) undertook a study involving two consecutive years of the BSE Sensex. They concluded that the movements in the manufacturing IIP and the Sensex are independent of one another. Chandrasekhar and Ghosh (2005) also obtained a similar result.

A paper by Wong, Agarwal and Du (2005) dealt with an empirical study examines the long-run equilibrium relationship and short-run dynamic linkage between the Indian stock market and the stock markets in major developed countries (United States, United Kingdom and Japan) after 1990 by examining the Granger causality relationship and the pairwise, multiple and fractional cointegrations between the Indian stock market and the stock markets from these three developed markets. They concluded that certain amount of integration exists between the Indian markets and more mature markets on the other; consequently, in the long run, movements in the latter will have some sort of reflection in the former.

Bhowmik (2008) has attempted an empirical study examining the inter-relationship between the BSE Sensex, the sectoral indices of the BSE and some stock indices.
outside India. Applying the method of cointegrated multiple regression analysis, the study concludes that the movements of the Sensex and some of the sectoral indices in India follow those of the foreign indices, specially those belonging to Asian countries and the United States. The author suggests that the results offer a strong case for integration of stock markets across the world.

Ahmad (2009) has tried to examine the causal relationship between the stock market and the manufacturing sector in India on the basis of data relating to the BSE Sensex and the IIP. He has resorted to the Engel-Granger cointegration test for measuring the long-term relationship among the the variables and the Granger causality test for evaluating the short-term causal relationship. He concludes that there is a long-term relationship between the stock market and the manufacturing sector, while in the short-term, causality runs from the BSE Sensex to the IIP.

Apart from comparisons among stock markets or those between the stock markets and the real economy, another area that has received considerable attention from researchers has been the comparative study between the stock markets and the commodity markets. As a portion of the present work concentrates on such a comparison, it would be relevant to throw some light on the literature in this area. A study by Jones and Kaul (1996) looks into how stock prices in Canada, Japan, the USA and the UK reacted to oil price shocks on the basis of quarterly data. On the basis of a standard cash flow dividend valuation model it was found that in case of Canada and the USA this was entirely due to the effect of oil shocks on real cash flows, it was not so pronounced in case of Japan and the UK.

A work by Huang, Masulis and Stoll (1996) studied the relationship between daily oil futures returns and daily U.S. stock returns utilising an unrestricted vector autoregression (VAR) model. It was found that oil futures can determine the prices of oil stocks, but have a negligible impact on major market indices like the S&P 500.

Sadorsky (1996) utilised monthly data from January 1947 to April 1996 to look into the linkages between the oil fuel price in the USA and the value of the S&P 500 based on an unrestricted VAR model that also considered short term interest rates and
industrial production. He was able to show that movements in oil prices can be used to explain those of the broad-based indices.

On the basis of the error correction of the VAR macroeconomic model and utilising price data of Greece from January 1989 to June 1999 Papapetrou (2001) suggested that movements in oil prices can influence those of stock prices.

Shawkat Hammoudeh and Eisa Aleisa (2002) looked at the links between oil exporting countries like Bahrain, Indonesia, Mexico and Venezuela utilising monthly data from 1991 to 2000. They concluded that the condition of the oil markets had some effect on stock prices.

In their second work, Hammoudeh and Aleisa (2004) have studied the dynamic relationship between the stock markets of the Gulf Cooperation Council (GCC) members, excluding Qatar, and the New York Mercantile Exchange (Nymex) oil futures. They found that there are two equilibrium relationships with different powers of prediction. The stock market in Saudi Arabia had the closest link and was followed by those in Bahrain and the UAE. On the other hand, Oman had the weakest links with other countries in the GCC. The stock index in Saudi Arabia alone could predict, and be predicted by the Nymex oil future prices.

Maghyereh and Al-Kandari (2007) examined the connection between oil prices and stock markets in the GCC countries. While prior works in this area had concluded that there was no such connection, Maghyereh and Al-Kandari argued that this may have been due to the fact that these studies looked only at the linear linkages. Towards that end the authors opted for the newly developed techniques of rank tests of nonlinear cointegration analysis proposed by Breitung and Gourieroux, as this method was better at detecting cointegration in case of non-linear error correction mechanism. The results suggest that oil prices in the GCC countries do affect stock indices in a non-linear manner.

2.2 Identification of the Research Gap

Based on the sample of existing literature on stock market and its diverse aspects, it is seen that considerable amount of work has concentrated on facets like the various
financial implications of different transactions on the stock markets, stock market regulations, measurement of volatility of various indices. Studies relating to comparisons among the performances of indices per se, particularly in India, represent a comparatively new area. The present study aims to add to the growing body of literature in this area.

2.3 Plan of the Work

The thesis is organised as follows:

Chapter 1 provides an introductory view of stock markets, their problems and the concept of index numbers. It also lays down the objectives of the work. Chapter 2 opens with the review of literature, thus identifying the research gap sought to be addressed by the present work. It also establishes the plan of work. Chapter 3 deals with a broad overview of the data base and methodology of our study. In chapter 4 we have provided an overview of the various stock indices which have been considered for this study. Accordingly this chapter has been divided into three sections viz., - Stock Indices in India; Leading International Stock Indices; and the commodity markets. Chapter 5 deals with the comparison between the primary and sectoral indices of the Indian stock markets. In chapter 6 we have similarly made a comparison between Indian and leading international indices. Chapter 7 deals with comparative analysis between stock market indices and commodity prices. Finally, chapter 8 concludes with some observations and policy prescriptions. It narrates the limitations of the thesis as well as the scope for further research work.