ABSTRACT

The Indian stock market hold a prominent place not just in Asia but all around the globe. It has a collective pool of over 20 million investors, making it the world's third largest stock market by investor base. On the country's stock exchanges, there are over 9,000 companies listed. The Bombay Stock Exchange, which was founded in 1875, is Asia's oldest stock exchange. The National Stock Exchange, which was founded in 1992, is India's largest and most advanced stock exchange, as well as the third largest stock exchange in Asia in terms of transactions. In terms of transaction volume, it is one of the top five stock exchanges in the world. Following the liberalisation of the economy in the early 1990s, the Indian stock market boomed. The whole decade of the 1990s was spent experimenting and fine-tuning an efficient and effective system.

The 'badla' system was than decommissioned in order to reduce unneeded volatility, whereas the derivatives section only began in 2000. Corporate governance regulations were gradually implemented, kicking off the process of bringing all publicly traded corporations up to par. With the bursting of the 'dot com bubble,' 9/11, and increasing oil costs, the global economic landscape began to shift. The equation became more complicated when the US economy slowed and interest rates tightened. However, foreign investors—institutional and others—were given more leeway to operate after 2000, thanks to strong growth, a maturing economy, and relaxed regulations. Increasing integration and increased cross-border capital flow resulted from the system's opening up, with India emerging as an investment 'hot zone,' causing our stock exchanges to be influenced by global cues like never before.

FPIs/FIIs (Foreign Portfolio Investors/Foreign Institutional Investors) have been one of the most important drivers of India's financial markets, with investment of Rs. 31,498 crore (US$ 4.27 billion) in 2021-22. (as of September 22, 2021). They have been drawn to the country because of its well-developed primary and secondary markets. Investors see India as a possible opportunity, as the country's economy has significant growth potential. FII investment has been significant, boosted by strong government backing, and is projected to improve in the future. Thus, with the growing global outlook the Indian stock market efficiency is needed to mobilize resources throughout the country. While many people believe that a booming stock market is a good indicator of broader economic growth, others remain wary.

Indian investors have a strange love-hate relationship with the stock market, however in order to become a developed nation India needs to have a strong financial market. Out of the population of 1.3 billion, only 18 million invest in the equity market of the country. This may be as a result of lack of trust in the markets, lack of knowledge, and no appetite for risk. When it comes to investing their money, most Indians are not willing

to take risk. That is why they invest in financial assets such as fixed deposits and gold, which are considered to be more secure in the long run. Despite their higher returns, equity investments come with a risk factor that deters most investors. Thus, determining and understanding this risk is the major purpose of this study. A continuing series of studies has dealt with the definition and theoretical problems encountered with the term “risk”. Risk can simply be termed as adverse price movements (in terms of market risk). It's essentially the difference between what you got and what you expected. Risk can be measured using a variety of methods, including variance, standard deviation (the most basic measure of risk), beta, and ratios like Sharpe, Treynor, and others, as well as more advanced measurements such as value at risk.

Modern Portfolio Theory, one of the foremost important and influential economic theories concerning finance and investment, developed by Harry Markowitz was published by Journal of finance in 1952 under the title. “ Portfolio Selection”. Portfolios, risk, correlations amount securities, and diversification were all important aspects of Markowitz's theory. In conjunction with Merton H. Miller and William F. Sharpe, his work revolutionised the way people invest. The Nobel Prize in Economics was shared by these three thinkers in 1990. Building on this theory, Jack Treynor (1961,1962), William F Sharpe (1964), John Linter (1965), and Jan Mossin (1966) independently developed the capital asset pricing model which is now considered as the centre of financial economics literature. It is widely used throughout finance for pricing risky securities and assessing expected returns on assets based on risk and cost of capital. The beta in the capital asset pricing model is a measure of volatility – of a security or portfolio compared to the market as a whole.

One of the major criticism of this theory is its assumption of normal distribution. It assumes that the securities returns are normally distributed, when in reality they are not. Returns have fat tails or are skewed. These two are the basic characteristics of expected returns. Other basic properties are that volatility of returns are clustered and persistent and have leverage effect. These basic properties/nature or characteristics of returns are called stylized facts. The first major objective of the thesis is to study the presence of these properties in the indices of Indian stock market exchanges.

The second major objective of the study is to analyse the inter relationship between the various broad market, sectoral and thematic indices of Bombay stock exchange and the National stock exchange. In order to form an efficient portfolio, it is most important to diversify the portfolio strategically. This can be possible only by understanding the relationship each indices share with each other. Since maximising returns and minimising risk is the objective of any investor the understanding of inter sectoral indices is of at the most importance. It enhances the knowledge of sectors and highlights the importance of diversifying portfolios sector wise. It emphasises on the fact that not only is it important to have stocks with varied correlation with the market but also to maintain certain proportion of each significant sectors in a portfolio. This will help an investor to minimise his risk and prepare against any unforeseen situations in the future.

Research Methodology

The study carries out secondary data analysis using primarily the benchmark indices of the two major stock exchanges of India, viz., Bombay stock exchange and National stock exchange. In addition, the sectoral indices of the Bombay stock exchange, sectoral and thematic indices of the National stock exchange are also used for the study extensively. The study is carried out from the period of January 2006 to August 2020. The study uses exploratory data analysis to study the basic nature of the data, further it incorporates GARCH family models to study the properties of the broad market, sectoral and thematic indices of both the stock exchanges. Finally, it uses the granger causality to study causality between all the three types of indices followed by copula models to study the inter relationships.

Results

The results confirm the presence of stylized facts in all the indices. This gives a clear picture on the nature of the indices and further it also draws causality among the indices. The second set of analysis displays spread graphs of various inter relationships among the various indices along with its correlation values.

Conclusion

Typically, investors base their investment decisions on either fundamental analysis, technical analysis or based on accounting ratios. Similarly, policy makers make their decisions based on the macroeconomic outlook, political influences, bureaucratic bottlenecks over and above the fundamental/technical and accounting ratios. This research focuses on the nature of the data/distribution, as well as the interrelationships between the indexes. It would not only assist in the creation of a diverse and profitable portfolio, but it will also aid in the efficient expansion of the Indian stock market, resulting in faster economic growth. Equity investment is most profitable over a long period of time and will boost industrial growth and businesses. The stock market can then be used as a true indicator of economic growth.

Key Words

Key Words: Indian stock market, risk, expected return, capital asset pricing model, beta, volatility, stylized facts, GARCH models, granger causality, sectoral analysis, copula.

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