International Journal of Information Technology and Management

Vol. V, Issue No. I, August-2013, ISSN 2249-4510

ASSESSMENT OF EFFECTIVENESS IN INDIAN STOCK MARKET: AN ANALYSIS OF NATIONAL STOCK EXCHANGE

AN INTERNATIONALLY INDEXED PEER REVIEWED & REFEREED JOURNAL

www.ignited.in

International Journal of Information Technology and Management
Vol. V, Issue No. I, August-2013, ISSN 2249-4510

Assessment of Effectiveness in Indian Stock Market: An Analysis of National Stock Exchange

Akhileshwar Singh Arora

Research Scholar, Himalayan University, Arunachal Pradesh

Abstract – The study tries to investigate the elements of co-movement of stock markets of USA, Brazil, Mexico, China and India throughout the period from January, 1996 to July, 2007 utilizing every day shutting value data. It endeavors to analyze the velocity of change coefficients utilizing day by day, week after week and monthly data. It additionally tries to look at the efficiency of the stock market as a consequence of activities and administrative measures taken by NSE and SEBI separately.

The long haul relationships around the markets are analyzed utilizing the Johansen and Juselius multivariate cointegration approach. Short-run flow are caught through vector mistake redress models. The dissection uncovers that there is a proof of cointegration around the markets exhibiting that stock prices in the nations considered here impart a regular pattern. The outcomes uncover that the velocity of conformity of Indian stock market is higher than other stock markets of the planet.

This study tries to confirm if the Indian the stock returns take after an arbitrary walk. Accompanying past studies, we utilize autocorrelation, Box-Ljung test statistics and the run test and find that the Indian stock market was not efficient in the powerless structure throughout the testing period. not reflect all the information in the past stock prices and strange might be attained by gurus misusing the market inefficiency.

Market Efficiency has been a subject of fundamental open deliberation of accepted account for a long time of time. It accentuates that security prices are sanely joined with numerous legitimate and mental substances furthermore dependably join all the information accessible to the market. Along these lines, security markets are seen as efficient in reflecting information about unique stocks or about the stock market in general.

Market efficiency is fundamentally a development of the zero benefit focused harmony condition from the sureness universe of traditional value hypothesis to the dynamic conduct of prices in theoretical markets under states of questionable matter. Hazard and return is the center part in speculation choice making process. Danger return tradeoff is the compelling choosing focus; this could be computed with the assistance of capital holding valuing model. It is the best device to measure hazard and return substance included in the stocks.

In this study hazard and return is computed by utilizing CAPM and endeavors made to test the relationship between danger and return is straight. Beta and fundamental statistics models have been utilized for testing the speculation encircled for this study. This study prove there is no solid efficiency found in the Indian market.

----------♦----------

INTRODUCTION

The efficient market speculation states that possession prices in money related markets might as well reflect all accessible information; as a result, prices might as well dependably be unwavering with 'basics'. The efficiency of stock market in investment improvement can't be overemphasized. Efficient Stock Markets give the vehicle for assembling reserve funds and venture assets for developmental purposes. They bear the cost of chances to speculators to enhance their portfolios over a mixture of possessions. This has the possibility to diminish the cost of capital through easier hazard premiums requested by supplier of capital. When all is said in done, perfect market is the one in which prices give correct signs for asset assignment so that firms can settle on profitable venture choice and gurus can pick around the securities under the presumption that securities prices at whenever completely reflect all accessible information. A market in which prices completely reflect all accessible information is called efficient.

The proposed study expects to examine if prices in National Stock Exchange i.e. S & P CNX Nifty, its constituents and different records of NSE accompany

an irregular stroll as needed by the market efficiency. It will come close the outcomes with NYSE and Chinese Stock Market particularly Shanghai Stock Exchange being the eldest stock exchange in China, to get extra comprehension of the market efficiency. In the event that the invalid speculation of irregular walk is rejected, straight and non-direct demonstrating of the serial conditions will be led utilizing ARIMA and GARCH models. Gauges dependent upon the best fitting models will additionally be thought about for precision.

In the experimental literature on capital market efficiency, the theory that fates value is a fair indicator of what's to come spot value has been a standout amongst the most disputable points around the analysts, examiners and academicians. The investigation of the efficiency of the prospects market is huge in a rising market like India as prospects market serves the most essential capacities of intense value disclosure, administration of danger, encouraging financing, and advancement of efficient asset distribution. Consequently, this section is an endeavor to test the long haul efficiency of fates market in India. The provision of unit root and Co integration tests give the confirmation of the fates market efficiency in India. Efficient value revelation in the prospects market intimates that merchants can take critical supporting positions to minimize the danger presentation in the spot market.

The investigation of efficiency of rising capital markets is getting to be more critical as a result of coordination of these markets with additional developed markets and free developments of ventures crosswise over geopolitical limits. The term market efficiency is utilized to demonstrate the relationship between information and stake prices in the capital market literature. Efficient capital markets are ordinarily thought of as markets in which security prices completely reflect all applicable information that is accessible about the key worth of the securities.

In an efficient market, the prices of stocks consolidate all applicable information what's more henceforth, stock returns show unusual (or arbitrary walk) conduct ordinary of the stock market. A market taking after an arbitrary walk is unwavering with value being suitably estimated at a harmony level, inasmuch as the unlucky deficiency of an irregular walk gathers contortions in the valuing of capital and danger. This has critical suggestions for the designation of capital inside an economy, and henceforth, for generally monetary advancement. In this point of view, tests of market efficiency and all the more especially, arbitrary strolls, give an imperative means by which monetary improvement could be assessed.

Furthermore, an efficient cost-of-convey relationship between the fates and money market brings about the co-development of value arrangement in two markets. Co-development of value arrangement of both markets is a proof that value development in both markets is cointegrated, yet confirmation of cointegration does not tell anything with respect to the rate of value finding in the market; rather it passes on extremely noteworthy information as to quality of the premise (i.e. Fates Price – Cash Price) (Booth et al., 1999). Assuming that on the date of the development of the agreement, value arrangement in two markets unites, it intimates that cost-of-convey model holds great and both the arrangement have long run relationship. Assuming that invert holds, then it infers that the fates are mispriced and may not be an efficient value revelation vehicle (Garbade and Sibler, 1983). For an efficient merging on the development date the foundation is obliged to be foreseeable, however foreseeable foundation does not so much suggest that speedier cost revelation happens in the fates market (Fortenbery and Zapata, 1997).

The destination of this some piece of the theory is to assemble a hypothesis for testing of market efficiency by undertaking econometric models and to attempt to create a conclusion about EMH in developing monetary markets. Assuming that the National Stock Exchange of India (NSE) was efficient, the stock prices would accurately and completely reflect all applicable information and thus, no arbitrage chances might exist. In this manner, in broader sense the suggestion of efficiency, is that stock prices dependably reflect their characteristic worth what's more might be taken at their face esteem.

The efficient market theory states that stake prices in fiscal markets may as well reflect all accessible information; as an outcome, prices might as well dependably be unwavering with 'essentials'. Efficient Stock Markets furnish the vehicle for assembling funds furthermore speculation assets for developmental purposes. They manage the cost of chances to gurus to broaden their portfolios over a mixture of holdings. As a rule, perfect market is the one in which prices furnish faultless indicators for asset allotment so firms can settle on gainful speculation choice and speculators can pick around the securities under the suspicion that securities prices at whatever time completely reflect all accessible information. A market in which prices completely reflect all accessible information is called efficient.

The joining of Indian stock market with whatever remains of the planet causes the assimilation of the news rapidly not in the nation where the news starts additionally in other nations too. The study endeavors to investigate the co-movement of stock markets of USA, Brazil, Mexico, China and India to get extra understanding of transmission component of news. It additionally tries to address the issue of figuring out the velocity of conformity to news over the period utilizing day by day, week after week and monthly data of NSE and in that capacity gives immediate measure of the level of over and under reactions. It endeavors to explore if the efficiency of S & P CNX Nifty has enhanced through the years as

a consequence of different activities embraced by NSE and SEBI.

In an efficient market all information relating to singular scrip is absorbed quickly. The market efficiency verbalizes how viably the desires of speculators are converted into the stock prices. The efficiency of the rising markets accepts more excellent criticalness as the pattern of ventures is quickening in these markets as an aftereffect of administrative changes and evacuation of different hindrances for the international value ventures. The term market efficiency is utilized to illustrate the relationship between information and stake prices in the capital market literature. Eugene F. Fama (1991) groups market efficiency into three classifications specifically, powerless structure, semi-solid structure and solid structure.

The refinements around these three manifestations of efficient market theory are controlled by the level of information being recognized. The security markets are said to be in the powerless manifestation of Efficient Market Theory, if the present prices completely reflect all the information held in the historical prices and thusly the gurus are not ready to reliably procure anomalous by essentially watching the historical prices of securities. This structure is prevalently regarded as irregular walk hypothesis, which supports that historical cost data have no prescient quality. A market is semi-solid efficient if stock prices promptly reflect any new openly accessible information and solid structure efficient if prices reflect different types of information if accessible openly or secretly. The goal of this study is to review certain perspectives stock market efficiency and it suggestion on speculation execution of value stakes with a few provisions on security market in India.

REVIEW OF LITERATURE

The investigation of market efficiency could be followed to the original works of Fama (1970). He developed the three manifestations of market efficie From that point forward numerous studies have been carried out to look at if a few markets are efficient in the powerless structure. Case in point, Chan, Gup, and Pan Hong Kong, South Korea, Singapore, Taiwan, Japan, and the United show that stock prices in these powerless structure.

Some scientists have analyzed market efficiency in India yet got clashing effects. For instance, Gupta and Basil (2007) assessed market efficiency in the Indian stock market from 1991 to 2006. They utilize the ADF. PP. furthermore KPSS techniques to test for unit roots. Their effects demonstrate that Indian Stock Markets don't take after an arbitrary walk. Thomas and Kumar (2010) utilize the runs test and Kolmogorov-Smirnov test and discovery the same effects utilizing every day returns in the Indian Stock Market from 2004 to 2009.

In a later think about, Khan, Ikram and Mehtab (2011) utilized a runs test to analyze the day by day comes back from the BSE Sensex, the S&p CNX Clever and different productions of the Reserve Bank of India from April 2000 to March 2010. The runs test showed that both the NSE and BSE don't accompany an irregular walk. However in an prior study Pant and Bishnoi (2001) found that the Indian stock market was powerless structure efficient the point when utilizing the Dickey Fuller Test. Vaidyanathan and Gali (1994) likewise found that the Indian capital market is powerless structure efficient utilizing a channel principles test. Shopping center, Pradhan, and Mishra (2011) utilize day by day data from June 2000 to May 2011 and found that the Indian capital market is frail structure efficient.

Bhattacharya and Samantha (2001) examined the degree to which news on NASDAQ helped value shaping at the starting and at the finish of an exchanging day at the Indian bourses utilizing day by day data of stock value files from January 3, 2000 to October 31, 2000. They analyzed the effect of NASDAQ on SENSEX through Ordinary Least Square (OLS) mathematical statements under cointegration and slip revision framework1. The study demonstrated that the news on NASDAQ had assumed a paramount part in value arrangement at the start of the new exchanging day at the Indian bourses. Subsequently, the study inferred the coordination of the Indian capital market with the US market.

Wong, Agrawal and Du (2004) explored the long-run harmony relationship and short-run dynamic linkage between the Indian stock market and the stock markets in significant developed nations (United States, United Kingdom and Japan) after 1990 utilizing the Granger causality and cointegration system. Utilizing week by week shutting prices data from January 1, 1991 to December 31, 2003, they found that Indian stock market was incorporated with adult markets.

Ahmad, Ashraf and Ahmed (2005) inspected the interlink ages and causal relationship between the Nasdaq composite record in the US, the Nikkei in Japan with that of NSE Clever and BSE Sensex in India utilizing every day shutting data from January 1999 to August 2004.

The study utilized Granger Causality and Johansen counteraction routines to look at short run and long haul relationship around the stock markets separately. The outcomes of Co-incorporation test uncovered that there was no long haul relationship of the Indian value market with that of the US and Japanese value markets. Granger causality test proposed that there was an unidirectional relationship from Nasdaq and Nikkei to Indian stock markets.

Hoque (2007) investigated the progress of stock value developments of a developing market for example, Bangladesh with that of USA, Japan and India utilizing day by day shutting value data beginning from January 1, 1990 to December 31, 2000. The files utilized for Bangladesh, India, Japan and USA were Dhaka Stock Exchange(dse) All Share Price Index, Bse30, Nikkei 225 and S&p500 separately. They analyzed the long haul relationships around the markets utilizing the Johansen multivariate cointegration approach and short-term progress were caught through vector lapse adjustment models. Vector Auto Regression3 was utilized to study the effect of stuns of these markets on own markets also different markets. The examination demonstrated that there was confirmation of long haul cointegration around the markets recommending that stock prices in the nations impart a normal stochastic pattern. Motivation reaction investigation demonstrates that stuns to US market do have an effect on Bangladesh stock market. The reaction of Bangladesh stock market to stuns Indian stock market is feeble. Stuns to Japanese stock market don't produce a reaction in the Bangladesh stock market.

In spite of the fact that there is no deficiency of literature on budgetary reconciliation, there are just a couple studies identified with India. Our literature review prescribes that there are not many studies on mix of Indian stock markets with U.s.a and developed and improving stock markets of Asia. With liberalization in India, changes in the financial environment of the planet and developing reliance of the American and different nations like India, China, Brazil and Maxico, it is intriguing to research the combination of stock cost developments of India with regarded to American and other stock markets. The reason of the paper is to furnish such dissection with an uncommon stress on joining relationship of selected stock markets.

EFFECTIVE MARKET THEORY

The investigation of capital market efficiency looks at what amount of, how quick, and how precisely accessible information is fused into security prices. Efficient Markets Speculation has been a broadly acknowledged hypothesis which guarantees that the prices are characterized in an arbitrary walk methodology, making value conduct totally erratic. Reilly what's more Brown, (1997) characterize an efficient market as one in which stock prices conform quickly when new information arrives and, consequently, the present prices of stocks have as of recently reflected all information about the stock. For a market to be efficient, three presumptions must hold: (i) Large amounts of contending benefit augmenting members analyze and worth stocks freely of one another, (ii) New information in regards to stocks goes to the market in an irregular manner and the advertisements are free of one another, and (iii) Competing gurus endeavor to conform stock prices quickly to reflect the impact of new information.

Powerless structure efficiency exists when security prices reflect all the information held in the history of past prices and returns. In the event that capital markets are powerless structure efficient, then gurus cannot procure super-ordinary benefits (overabundance benefits) from exchanging methodologies dependent upon past prices or returns. Subsequently, stock returns are not foreseeable, furthermore thus take after an arbitrary walk.

Under semi-solid structure efficiency, security prices reflect all openly accessible information. The semi-solid structure likewise incorporates the powerless structure speculation, since all the information of the market information of the past returns, prices and exchanging volumes of the stock is open. Moreover to the market information, general society information incorporates all non-market information, for example, income, profit advertisements, different degrees and news about the by and large economy. Speculators, who base all their choices on the information that gets open, can't pick up above-normal returns. The explanation for why is that in such a market, all the prices of stocks have as of recently reflected this information. Subsequently, just dealers with access to non-open information, for example, some corporate insiders, can gain overabundance benefits. Thus, the market responds so rapidly to the arrival of new information that there are no gainful exchanging chances dependent upon open information.

Under solid structure efficiency, all information - even obvious organization insider facts – is joined in security prices and in this way, no speculator can procure overabundance benefit by exchanging on open or non-open information. Solid structure presumes that the stock prices completely reflect all the accessible information, both from open and private sources. This methods that no aggregation of moguls has monopolistic access to some information important to the stock, so no aggregation of moguls ought to have the ability to reliably make above-normal returns. In this setting, the solid structure includes both the frail structure and the semistrong structure, and expects that prices change quickly to the arrival of any new open information where the greater part of this information is without cost and accessible to everybody at the same time.

METHODOLOGY

In testing the market efficiency of the Bombay Stock Exchange, an autocorrelations and runs test is utilized. Both the autocorrelations test and run test analyze if time arrangement data shows irregularity. The technique utilized as a part of this study is like Thomas and Kumar (2010) and Khan, Ikkram, and Mehtab (2011). Yet this study utilizes the more present every day cost data from July 1997 to December 2011. The autocorrelation test is a parametric test that makes suppositions about the ordinariness of data. In the event that huge autocorrelations are found in times arrangement

data, stock returns don't accompany an irregular walk and the market could be acknowledged as inefficient in the powerless structure on the grounds that it might be conceivable to make faultless expectations about what's to come value developments dependent upon past value developments. On the other hand, if stocks returns do accompany an irregular walk, then speculators will be unable to adequately anticipate future returns since future value developments are identified with past value developments.

The data set in our study consists of two sub-samples. One sample would include the daily, weekly and monthly closing prices of S & P CNX Nifty and other indices of NSE for the period January 1991 to April 2007. Sub-sample 2 would comprise of daily closing prices of fifty underlying individual companies included S & P CNX Nifty. The time periods for the second sub-sample vary from stock to stock.

CONCLUSION

Numerous studies have been carried out to test the efficiency of Indian market in the feeble structure yet the outcomes have been uncertain. A few studies balance the market efficient in the frail structure yet others discover the market inefficient in the feeble structure. In this study, we utilize autocorrelation and runs test to analyze day by day file returns of the Bombay Stock Exchange from July 1997 to December 2011. The effects of the autocorrelation and runs test show that the Indian stock market is most certainly not efficient in the frail structure throughout our testing period and suggest that it is conceivable to accomplish irregular by foreseeing what's to come value developments based oil past stock value developments.

Efficiency of Indian stock market is equitably vital in the middle of the different administrative measures and activities taken by SEBI and NSE separately. Our effects find that the NSE clever has all the earmarks of being efficient at information handling about the administrative measures started by SEBI as of late. The stock returns are statistically noteworthy when the administrative measures of SEBI proposing that information are appropriated into stock prices while returns are not statistically unique in relation to zero after the measures.

This demonstrates stock markets throughout later times gets to be reasonably speedier in transforming information. The statistically irrelevant returns throughout the administrative measures on or when year 2000 may be because of the way that the stock market was initially stage. It has begun the methodology of modernization and advancement from that point. It, consequently, will most likely be unable to process information speedier. While in later period, the market saw real improvement regarding the presentation of web exchanging, subsidiaries and so forth. These make the information handling speedier and are reflected in prices.

REFERENCES

- Agarwal and Singh (2002), “Merger Announcements and Insider trading Activity in India: An empirical Investigation”, NSE research Initiatives, Paper No.8.
- Ahmad,Ashraf and Ahmed(2005), “Is the Indian Stock Market Integrated with the US and Japanese Markets?: An Empirical Analysis”, South Asia Economic Journal, Vol.6(2), pp.193-206.
- Chan, K. (1992): “A Further Analysis of the Lead-Lag Relationship between the Cash Market and Stock Index Futures Market,” *The Review of Financial Studies*, Vol. 5, No. 1, pp. 123-152.
- Dhankar RS (1991).Empirical Tests of the Efficiency of the Indian Stock Market. *J. Financ. Manage. and Anal.* 4:37-43.
- Fama, E. F., (1970): “Efficient capital markets: A Review of Theory and Empirical Work”, *Journal of Finance* 25, pp. 383-417.
- Fama, E., (1970). Efficient Capital Markets: A review of theory and empirical work. Journal of Finance, 25, p. 289-307.
- Geweke, J.F. and E.L. Feige (1979), “Some joint tests of the efficiency of markets for foreign exchange”, *Review of Economics and Statistics,* Vol.-61, pp. 334-341.
- Gupta, R., and Basil, P.K. (2007). Weak form efficiency in Indian stock markets. International Business and Economics Research Journal, 6(3), p. 57-64.
- Macqueen G, Thorley S (1991).Are Stock Returns Predictable? A Test
- Using Markov Chains. *J. Financ.* 46: 239-262.
- Mall, M., Pradhan, B.B., and Mishra, P.K. (2011). The efficiency of India’s stock market: an empirical analysis. International Research Journal of Finance and Econ p. 178-184.
- Pant B. and Bishnoi, T.T. (2001). Testing random walk hypothesis for Indian stock market indices. Proceedings of the Fifth capital markets conference 2001, UTI Capital Markets.

- Thomas, A.E., and Kumar, M.C.D. (2010). Empirical evidence on weak form efficiency of Indian stock market. ASBM Journal of Management, III, (1&2), p. 89-100.

- Zhang *et al* (2010): "Market Efficiency Test in the VIX Futures Market", *CAMA Working paper* No. 8/2010, The Australian National University, pp.1-29