Study On Three Forms Responsible For Performance Of Stocks In Stock Market

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Abstract:

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The present study tested the weak form of efficient market hypothesis by using the weekly stock prices (both on the domestic and international markets) of Indian companies, which has made issue. The study period encompasses from April 1994 to December 2000. Serial correlation coefficients on stock returns as well as market prices both in domestic E markets were computed for a I-16 periods lag(s). US $ denominated stock prices were converted into the Indian currency as on date at the prevailing market rate of exchange to mitigate the incidence of currency fluctuations. The endorsement of randomness is virtually acknowledgement of market efficiency in weak form. The randomness in stock returns is examined through the following mechanism:

$E(P_t/P_{t-j}$ for $j \ne 0) = P_{t-1}$ of a share will not help to predict current stock price. The best estimate of this price, given the past price, is the past price itself, if the market efficiency in its weak form holds.

Key words: efficient, domestic, stock, denominated, mechanism

Introduction

The financial institutions in capital market which contribute, underwrite, subscribe to these new issues comprise the new issue market participants. Thus, new issue market is that part of capital market which deals in the issue of capital by existing and new companies. When the new companies make new issues, they are known as initial issues where as an issue made by existing companies is known as further issue. Initial capital can be received by issuing company in the form of ordinary and preference shares while debentures can also be issued for raising further capital. The main function of New Issue Market is to facilitate the transfer of resources from savers to the entrepreneurs seeking to establish new enterprise or to expand/diversify existing ones. It comprises a set of institutions through which funds can be obtained directly or indirectly by those who require them from investors with surplus funds. Thus, the main function of the New Issue

Market is to canalize the investible funds for the use of industrial enterprises. The operation and working of new issue market is directed and regulated by the SEBI rules and byelaws.

New Issue Market is concerned with new securities which have not been issued previously, thus it provides additional funds to the issuing company either for starting a new enterprise or for the expansion or diversification of the existing ones and therefore, its contribution to company financing is direct. The existence of the New Issue Market is not restricted to a particular spot and thus has no geographical basis. This market has neither any tangible administrative and organizational set-up as that of stock exchange, nor is it subjected to any centralized control for the conduct of its business. It is recognized only by the services it render to the lenders and borrowers of capital funds.

Secondary Market

Stock exchanges are the prominent constituent of secondary markets. Thus to meet the different characteristics of the companies and objectives of the investors, the multi- tier structure exists in secondary market. The number of official stock exchanges in India has increased from 9 in 1979-80 to 23 as at the end of December 2007. India has now the largest number of organized and recognized stock exchanges in the world. All of them are regulated by the SEBI. They are organized either as voluntary, non-profit-making associations, public limited companies or company limited by guarantee. Secondary market is mainly concerned with the trading of existing securities like equity shares, preference shares, debentures and bonds of listed public limited companies and government securities. A well-developed securities market is characterized by liquidity, price continuity, price discovery and safeguard to the interest of the investors.

The stock exchange does not play any direct role in making funds available to the corporate, its role in this respect is only indirect i.e. it helps to encourage investors to invest in industrial securities by making them liquid i.e. by providing facilities for continuous, regular and ready buying and selling of these securities.

Review of Literature

Anshuman and Goswami (2000) tested the weak form of market efficiency with the help of daily closing prices of 70 stocks listed on the Bombay Stock Exchange for a period April 2001 to March 2006. The sample comprised all actively traded stocks to eliminate the effects of infrequent trading. The relevant data for the study have

been obtained from the CMIE Prowess database. The market capitalisation figures were obtained from the CRISIL cards. The study was primarily based on the methodology developed by Gibbons and Hess (1981) to examine the day-of week effect. It observed a high degree of volatility in daily returns in the initial period that gradually accentuated after March 1994. The mean portfolio daily return drops from 0.245 percent in the pre - March 1994 period to (-) 0.037% in the past March 1994 period. This drop in return was particularly severe on Mondays and Fridays. The mean daily returns on Mondays plummet from a pre March 1994 level of 0.263 percent to (-) 0.228 percent in post March 1994 period, the corresponding decline in mean Friday returns was equally dramatic from 0.754 percent to 0.348 percent. It has also been observed that the depression in daily returns after 1994 was accompanied with lesser volatility in price movement. It concluded that the results for the entire period suggested that Fridays and Tuesdays experienced significant deviation from the average returns. The study also revealed that the negative Tuesday returns were mostly driven by the returns in the post Mach 1994 period. The pre March 1994 period returns were all virtually positive

across the week, but the returns in the post March 1994 period were secularly and significantly depressed. However, it has noted the absence of any structural break in the return generating process around March 1994.

Conrad and Juttner (2009) studied weak form of market efficiency with the help of daily closing prices of 54 stocks. The stocks which had the highest number of quotations have been chosen from January 2, 1968 to April 22, 1971. Each stock thus resulted the 825 price quotations. The series of stock prices were adjusted for stock splits to avoid distortion of the results through runs analysis and serial correlation. It was curious to discover that the expected number of runs (549.5) far exceeded the actual number of runs varying from 130 to 417. These results have profoundly demonstrated the non-random behaviour of the price changes. The most striking nature of the results of the serial correlation values were the lowest absolute value for $r1 = 0.0017$, the highest $r1=0.5021$. Some coefficients were so close to zero that one could arrive at the conclusion that successive changes in stock prices were independent.

Kramer (1994) worked on the market efficiency on a selected set of five factors defining relationship of the Macro

economy to the asset markets. The five factors considered were default risk, maturity risk, inflation, consumption growth and stock market. It has been found that the average difference between high and low-priced firm returns were large, but statistically insignificant. The average difference in January, however is large (8.38 per cent per month). It documented that CAPM based excess returns for low priced companies . It concerned with the seasonality in the risk, and found that the lowest-priced firms have the strongest seasonality in betas. Second, more than one factor was responsible for this seasonality. There was a pervasive and significant seasonality in the macro economic risk of low-priced companies.

Gupta (1987) expanded market efficiency which was earlier studied by Barua and Raghunathan. The study observed that if small amounts were at stake, speculators were able to accumulate unreasonably large volume positions. Such imbalanced positions result in violent fluctuations in security prices. The author found that if some speculators asks for a settlement, a payment crisis takes place. Under such compelling circumstances, government tried to regulate the market and many a time decisions were taken at the cost of investors. It concluded that the

Indian capital market was not efficient and were highly speculative and crisis-ridden.

Amanulla and Kamaiah (2016) studied the weak form of market efficiency with the help of monthly data of 53 selected stocks. The random walk model which forms a special case of ARIMA has been used in the study. The study accepted the null hypothesis of absence autocorrelation in 40 out of 55 cases at 5 percent level of significance implying thereby   that corresponding price series follow random walk. A random walk in stock prices indices of BSE sensitive and national indices was also observed. However, the presence of significant autocorrelation coefficients were noted in 15 individual securities. On the basis of lagged prices, it has been found that except 4 cases, the F-statistics indicated that past prices were not helpful in predicting current prices. It has also been noted that the BSE national index being efficient at all lags than the BSE sensitive index. The author revealed that the results by and large reveal that the Indian stock market was informational efficient in weak form.

Wooland and Woodland (1994) studied weak form of market efficiency with the help of sports i.e. race track and baseball gambling markets. The author has taken 24,603 major league baseball games

for the 1979 to 1989 seasons. The tests used by author were individual betting line and aggregated tests across betting lines. The study considered efficiency for a game selected on random on a given betting line that there were no differences in the objective and subjective probabilities of an underdog win. On the basis of tests by individual betting line, the author found that only 3 of the 26 lines tested lead to rejection of the null hypothesis at 10 per cent level of significance. It means the market was remarkably efficient. For aggregated tests across betting lines, the null hypothesis was that the efficiency was a joint test of $x = 0$ and $ai = 1$. On the basis of these tests it found no evidence of market inefficiency because F-statistic was 0.474 and corresponding probability value was 0.628 and second regression rejects the hypothesis of market efficiency at 10 percent level of significance. The author concluded that the major league baseball betting market was found to be highly efficient.

Srinivasan, Mohapatra and Sahu (1989)[32] examined the market efficiency with system dynamics. System dynamics was a model which utilize not only hard quantitative data but also qualitative data, establishes the cause-effect relationships among the system variables. The model has

been tested on the stock price movement of a particular firm for 100 days. The system dynamics model was based on that the buying multiplier for dividend and selling multiplier for dividend were structured around 30 per cent. It means the requirement for stock price equilibrium is that the expected return must be equal to the required return. The study noted that a typical stock price aggregate model based on a combination of CAPM and SD (System Dynamics) can be built as a possible approach to break new grounds.

Material and method

The study under consideration is essentially empirical and exploratory in nature. The main objective of the study is to examine the price behavior in three forms i.e. weak form, semi strong form and strong form for a period, April 2014 – December 2023.The sample size of 68 issues companies represents a broad segment of industrial activity such as; textiles, power, diversified, automobiles, pharmaceuticals, hotel, and steel. Primarily, it is based on secondary data pertaining to the weekly stock prices. Thus, Friday closing prices of stocks were obtained the Saturday edition of the daily The Economic Times. Stock prices thus compiled and collected have been adjusted for bonus and stock splits/consolidation. To

test the hypothesis that successive price changes are linearly independent, serial correlation analysis is used for measuring possible dependence of successive numbers in a given time series. Another statistical test developed for the same purpose, runs test, ignore the absolute values of the numbers in the series and considers their signs only. This test for randomness has also been used in present study.

i)   Weak form: The weak form advocates that current stock prices already fully reflect all the information contained in the historical sequence of prices. If the weak form of EMH is correct, investors should not be able to earn abnormal profits consistently by observing the historical prices of securities. If this form of the efficient market hypothesis is true, technical analysis, which relies on charting of prices, moving averages, momentum and volume of trading would not be a meaningful analysis for making abnormal profits.

ii)   Semi-strong form: Fama's semi-strong efficient market hypothesis stipulates that current prices of stock not only reflect informational content of historical prices but also reflect all publicly available information about the companies such as earnings report, dividend announcements, stock splits, bonus issue, etc. In other words, any information available to the public should be quickly reflected in security prices so that investors cannot consistently earn abnormal returns by acting on such information.

iii)   Strong form: The strong form of Efficient Market Hypothesis claims that not only publicly available information is irrelevant for decision making but also all the information is useless for generating abnormal returns. The strong form of EMH represents the most extreme case of market efficiency. In order to test the strong form, three groups of investors as reported below have been examined with regard to abnormal returns:

1.   Corporate Insiders

2.   Stock exchange specialists

3.   Mutual Funds

These groups of investors are destined to have access to the privileged information relevant to the investment decisions and are presumed to outperform the other market participants in the absence of efficient stock markets.

The efficient market hypothesis is a central paradigm of finance theory. There are two types of efficiency, operational efficiency and informational efficiency. Operational Efficiency measures how well things function in terms of speed of execution and accuracy. The efficient

market hypothesis (EMH) relates to informational efficiency, which measures how quickly and accurately the market reacts to new information. It is the least restrictive form of EMH and stipulates that the information being considered is restricted only to the historical prices and volume. In efficient markets investors would not be in a position to earn abnormal returns consistently relying their investment decisions on historical sequence of stock prices and volume of trading.

The present study tested the weak form of efficient market hypothesis by using the weekly stock prices (both on the domestic and international markets) of Indian companies, which has made issue. The study period encompasses from April 1994 to December 2000. Serial correlation coefficients on stock returns as well as market prices both in domestic E markets were computed for a I-16 periods lag(s). US $ denominated stock prices were converted into the Indian currency as on date at the prevailing market rate of exchange to mitigate the incidence of currency fluctuations. The endorsement of randomness is virtually acknowledgement of market efficiency in weak form. The randomness in stock returns is examined through the following mechanism:

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$$P_t - P_{t-1} = E_t$$

In logarithmic transformation the above can be written:

$$\text{Log } P_t - \text{Log } P_{t-1} = E_t$$

Wherein,

$E(E_t) = 0$, and

$V(E_t) = \sigma^2$

The above model implies that the expected price of a share in period t given the entire price of the share, viz., P_{t-1}, P_{t-2} ….. P_0, is simply equal to P_{t-1}. If this holds true, it implies that the stock market has got no memory of the stock price history.

Conclusion

Randomness in stock price changes can also be examined by the correlation coefficient between price changes of different time periods. If the auto correlations are close to zero or insignificant at a given significant level, the price changes are said to be serially independent. The same holds for the return behavior as well. Serial Correlation measures correlation coefficient between a series of numbers with lagged number(s) in the same series. A significant positive

correlation indicates the presence of a trend. The presence of negative serial correlation documents the existence of more reversals that might occur randomly.

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