



## Semi Strong form of Efficiency of stock market: A Review of Literature

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**Abstract:** Investment in stock market is always fraught with heavy risk. The reason for this risk is “fluctuations in stock prices.” It is the forces of demand and supply which decides the price of any stock. And the demand and supply of any stock would be on the basis of information surrounding the stock. The concept of Efficient Market Hypothesis (EMH) deals with information discounting in stock market. EMH theory narrates that one cannot make any extra ordinary profit with any type (past- Weak form of Efficiency, public- Semi strong Form of Efficiency, insider- Strong form of Efficiency) of information because it is already discounted in the market. This study, which is qualitative in nature, intends to explain the movement of stock prices with respect to arrival of public information. Various research papers are written on publicly available information and stock market. The focus of this research paper is- reviewing the literature available on publicly available information and discounting of the same stock market (Semi strong form of Efficiency).

**Keywords:** Stock Market, EMH, Information, Semi Strong Form of Efficiency.

### I. INTRODUCTION

Stock market investment should always be done with some basic groundwork. Most of the time two analysis namely technical analysis and fundamental analysis is done for the stock before investing. However the efficient markets hypothesis (EMH), popularly known as the Random Walk Theory, is the proposition that current stock prices fully reflect available information about the value of the firm, and there is no way to earn excess profits, (more than the overall market return), by using this information. This means that technical and fundamental analysis is of no use as the same information is already discounted in the stock price. EMH focuses on the most essential and interesting issues in finance – why prices change in security markets and how those changes take place. It has very important implications for investors as well as for financial managers. The first time the term "efficient market" was proposed by E.F. Fama in 1965 and he said that “In an efficient market, on the average, competition will cause the full effects of new information in intrinsic values of stock and hence it will be instantaneously reflected in actual prices”

This concept of an efficient capital market has been continuously developed, studied, tested and challenged ever since the French mathematician Bachelier<sup>1</sup> introduced the notion in his Ph.D. thesis in 1900. In his work, Bachelier recognized that “past, present and even discounted future events are reflected in market price, but often show no apparent relation to price changes”. He concluded that commodity prices fluctuate randomly, which was empirically supported by Cowles (1933)<sup>2</sup>, however largely ignored until Cootner (1964)<sup>3</sup> published Bachelier’s contribution in English. Samuelson (1965)<sup>4</sup> expanded on Bachelier’s theory in his article “Proof that Properly Anticipated Prices Fluctuate Randomly.” This work, considered the beginning of modern economic literature, asserts that “if one could be sure that a price would rise, it would have already risen” and explains changes in price with the random walk model

### II. EFFICIENT MARKET HYPOTHESIS

The Efficient Market Hypothesis (EMH) is a historical compilation of work, which begins with Bachelier’s foundations. The EMH has historically been subdivided into three categories based on Roberts’ (1967) <sup>5</sup>classical taxonomy of information sets:

**Weak form efficiency:** Prices fully reflect historical information of past prices and returns.

**Semi-strong form efficiency:** Prices fully reflect all information known to all market participants (public information).

**Strong form efficiency:** Prices fully reflect all information known to any market participant (public and private information).

<sup>1</sup> Bachelier, (1900) “trans. James Boness. “Theory of Speculation”, in Cootner (1964) P 17-78.

<sup>2</sup> Cowels, (1933). “Can Stock Market Forecasters Forecast?”, *Econometrica*, 1, P 309-324.

<sup>3</sup> Cootner, (1964). *The Random Character of Stock Market Prices*. MIT Press.

<sup>4</sup> Samuelson, (1965) “Proof that Properly Anticipated Prices Fluctuate Randomly”, *Industrial Management Review*, 6, p 41-49.

<sup>5</sup> Roberts, (1967). “Statistical Versus Clinical Prediction of the Stock Market”. Unpublished paper, Chicago: University of Chicago.

From this idea of information sets, Fama (1970)<sup>6</sup> assembled a comprehensive review of theoretical and empirical evidence of market efficiency in which he deems an efficient market as “a market in which prices always ‘fully reflect’ available information.” In an efficient market, trading on available information fails to provide an abnormal return. In order to prove or disprove the EMH, a model of “normal” returns must be specified against which the actual returns can be compared. Abnormal returns, the difference between the return on a security and its expected return, are forecasted using the chosen information set. If abnormal returns are found to be un-forecast-able or “random”, the EMH is not rejected.

**More about Semi Strong Form Efficiency:**

As narrated above Semi strong form efficiency means the stock market reflect the information which is available publically. Hence one cannot earn any extra ordinary profit with different strategy if the market is semi strong form efficient.

This publically available information includes information related to Merger & Acquisition, Joint venture, Dividend Policy, Bonus Issue, Announcement of Profit/Loss by company, Stock Split, Corporate Events etc. As per Semi Strong Form Efficiency any of these events will not have any impact on the price of the stock because all these information must have reflected in the price before it announced publically. The logic behind Semi Strong form efficiency is that individual would not be able make extra money with the help of information which is available to everyone. As narrated earlier Weak Form Efficiency negates Technical analysis, in the same way Semi Strong Form Efficiency negates Fundamental analysis.

In this study, various research papers on Semi Strong Form Efficiency are reviewed. This research paper is conceptual in nature. To summarize and conclude the views of different researchers the papers (reviewed in this study) are categorized on the basis of a. type of country and b. conclusion from paper is in favor/against of Semi Strong form of efficiency.

**III. REVIEW OF LITERATURE ON SEMI STRONG FORM OF EFFICIENCY**

Sr. No.	Title of Research/ Study	Sample of the study	Research Methodology	Semi Strong form of Efficiency
1	How do stock prices react to bonus issues? Obaidullah. M (1992) (Developing Country)	75 bonus issues (75 Companies) Time Period 1987-89	Event study	Yes
2	The Behavior of China’s Stock Prices in Response to the Proposal and Approval of Bonus Issues, Michelle L. Barnes* and Shiguang Mab. (Developing Country)	196 bonus approvals A-Shares 56 bonus approvals of B-shares Time Period 1994 to 1998	Event Study	No (for small bonus issues for A-share market) Yes (For B-share Market)
3	Behavior of excess stock return around earnings announcement day: A test of efficiency of Kuala Lumpur Stock Exchange by Sandi, Jili and Gupta (1998) (Developing Country)	91 stocks listed on of Kuala Lumpur Stock Exchange Time Period 1993-1996,	Event study	No
4	The stock market response to the Union Budget Thomas and Shah (2002). (Developing Country)	26 Budgets Three different series from BSE and NSE Time Period 1979 to 2001	Event study	Yes
5	Announcement Effects of Bonus Issues on Equity Prices: The Indian Experience Vandana and Gupta (2003) (Developing Country)	145 Bonus issues Time Period 1995 to 2000.	Event study	Yes
6	An empirical analysis of market reaction around the bonus issues in India by Mishra K (2005) (Developing Country)	46 Bonus Issues listed on NSE Time Period 1998-2004	Event study	Yes
7	Review of Capital Market Efficiency: Some Evidence from Jordanian Market by Hadi (2006) (Developed Country)	15 industrial firms listed in Jordon Stock Exchange (JSE). Time Period 2000-2003	Regression Model	(Mixed Result)

<sup>6</sup> Fama (1970). “Efficient Capital Markets: A Review of Theory and Empirical Work”, *Journal of Finance*, 25: 383-417.



8	Gersdorff, N. V. and Bacon F., U.S. Mergers and Acquisitions: A Test of Market Efficiency. (Year not Mentioned). (Developed Country)	20 Mergers ( All the acquired companies are listed on either NYSE or NASDAQ Time Period 2007	Event study	Yes
9	Market Reaction to Earnings Information: An Empirical Study. Iqbal and Mallikarjunappa, (2007). (Developing Country)	149 companies listed on the BSE Time Period 2001	Event study	No
10	Dhar, and Chhaochharia (2008) analyzed the impact of the information relating to the announcement of stock split and bonus issue on stocks listed on National Stock Exchange (Developing Country)	90 stock splits and 82 bonus issues listed on the BSE 500 index Time Period 2001 to 2007	Event study	Yes
11	Financial Market Efficiency in Turkey: Empirical Evidence from Toda Yamamoto Causality Test by Yalama and Çelik (2008). (Developing Country)	Interbank Money Market Interest Rate (IMM), Istanbul Stock Exchange-ISE-100 Currency Basket Index (FEM) and Currency in Circulation (CIC) Time Period 1990 to 2008	Toda Yamamoto causality method	Money markets – Yes capital market- No
12	Announcement Effect and Price Pressure: An empirical Study of Cross-Border Acquisitions by Indian Firms. Cheng and Shavin (2008). (Developing Country)	114 acquisitions made by publicly listed Indian firms of US firms, Time Period 1999 to 2005.	Event Study	No
13	The Lehman Brother's Bankruptcy: A Test Of Market Efficiency Pichardo, Bacon, (2009). (Developed Country)	15selected brokerage firms Time Period 2008	Event Study	Yes
14	Testing the Semi-Strong form Efficiency of Indian Stock Market with Respect to Information Content of Stock Split Announcement – A study in IT Industry Raja, Sudhakar and Selvam (2009). (Developing Country)	43 IT companies listed on BSE Time Period 2000-01 to 2006-07	Event study	No
15	Indian Stock Market Efficiency: An Empirical Study Of Some Corporate Events By Ray (2010). (Developing Country)	521 Bonus issues and 177 Rights issue (Companies listed on NSE) Events (bonus issues, stock splits and rights issues) Time Period 1996 to 2008.	Event Study	Yes (For bonus issue only)
16	Testing Semi-Strong Form of Efficient Market Hypothesis in Relation to the Impact of Foreign Institutional Investors' (FII's) Investments on Indian Capital Market Khan and Ikram (2010) (Developing Country)	The sample consists of monthly averages of Sensex and CNX Nifty, and monthly FII's Net investment in India. Time Period 2000 to 2010.	Karl-Pearsons' Product Moment Correlation Coefficient (Simple Correlation) and linear regression equations	Yes
17	Testing the Efficiency of Indian Stock Market Vis-À-Vis Merger and Acquisitions - A Study of Indian Banking Sector Azeem Ahmad, Sana Ikram, (Developing Country)	6 recent mergers Time Period 2003 - 2009.	Event study	Yes
18	Reaction of Stock Prices to Dividend Announcements and Market Efficiency in Pakistan	79 companies listed on Karachi Stock Exchange Time Period 2004 to 2007.	Event study	No



	by Akbar and Baig (2010) (Developing Country)			
19	An Empirical Test Of Indian Stock Market Efficiency In Respect Of Bonus Announcement Raja and Sudhahar (2010). (Developing Country).	43 companies listed on BSE Time Period 2000-2007	Event study	No
20	An Empirical Analysis Of Impact Of Right Issues On Shareholders Returns Of Indian Listed Companies By Miglani (Developing Country)	32 right issues Time Period 2005 to 2010	Event study	No
21	Impact of Stock Split Announcement on Stock Price Sujith Kumar S H* & Sadanand Halageri (2011) (Developing Country)	19 companies (splits) listed on CNX Nifty Time Period 2009	Event study	No
22	Capital Market Reaction around the Stock Splits and Bonus Issues: Evidence from some Indian Anirban Ghatak (2011) (Developing Country)	12 stock splits and 15 bonus issues announced by companies listed on the NSE Time Period 2000 to 2010	Event Study	Yes
23	The Impact of Mergers and Acquisitions on Acquirer Performance: Evidence from Turkey Selcuk and Yilmaz, (2011). (Developing Country)	62 Turkish Companies Time Period 2003 to 2007	Event Study	No
24	Semi-Strong Form Of Pricing Efficiency Of Indian Stock Market – An Empirical Test In The Context Of Stock-Split Announcements Prithul Chakraborty 2011, (Developing Country)	17 stocks of S&P CNX Nifty Time Period 2000 to 2010	Event Study	No
25	Fdic Bank Failure Announcements: A Test Of Market Efficiency by Earl A and Frank B (2011), in their paper, test the Semi-Strong form of (Developed Country) ASBBS Annual Conference: Las Vegas, February 2011, Volume 18 Number 1 p (125-133)	36 FDIC bank failures traded on NYSE, NASDAQ or OTC. Time Period 2009 to 2010.	Event study	Yes
26	Insider Trading and Market Efficiency: Do Insiders Buy Low and Sell High? By Roddenberry and Bacon (2011). (Developed Country)	Two samples, each consisting of 15 randomly selected companies traded on the NYSE. Time Period 2008 to 2010	Event study	Yes
27	Market Efficiency of Indian Stock Market – A Study of Bonus Announcement in Bombay Stock Exchange By Bharath M and Shankar H (2012). (Developing Country)	34 companies listed on BSE 500 Time Period 2001 - 2010.	Event study	Yes
28	Testing Semi-Strong Efficiency Of Indian Stock Market - A Study On Effect Of Union Budget 2012 On Six Selected Sectoral Stocks by Kutchu (2012). (Developing Country)	76 companies (Listed on CNX Nifty) from selected six sectors Fertilizers, Textile, Hotels, Paper, Software, Pharmaceutical	Event study	Yes
29	A Study on Semi-Strong Efficiency of Indian Stock	All companies listed on BSE 100 Index, Events	Event study	Yes

	Market Remya Ramachandran International Journal of Scientific and Research Publications, (2013) (Developing Country)	(Bonus issue, Dividend, Merger, and Stock split) Time Period (2004 to 2009)		
30	Determination of Semi-strong form of Indian Stock Market with Reference to Banking and Automobile Industry by Sekar P and Dinesh S. (Developing Country)	7 Companies Time Period Not Mentioned	Structure Equation Modeling	Yes

**Inferences: literature on Semi Strong Form of Efficiency**

Type Of Country	Semi Strong Form Of Efficiency			Total
	Favor	Against	Mixed	
Developing	13	10	2	25
Developed	4	0	1	5
Global	0	0	0	0
Total	17	10	3	30
Final Total	30			

**IV. CONCLUSION**

The literature review on Semi Strong form of Efficiency narrates that majority papers in the study are in favor of Semi Strong Form of Efficiency. This suggests that public information is instantly discounted in stock market and one cannot earn any extraordinary profit with available information. Out of 30 papers, 17 papers are in favor of Semi Strong Form of Efficiency whereas, 10 papers concluded that stock market is not Semi Strong form of Efficient. There are three papers which results into mixed outcome. The reason of these diverse results can be type of event and time period used for analysis. Hence further research can be done on categorization of various events and finding conclusion for individual events.

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