Impact of Bonus Announcements on Share Price Movements – An Empirical study on BSE Listed Companies

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Abstract

Stock Exchange of a country is a most important in the country's economic growth. In the Stock Exchange, one of the most important research issues is the efficiency of market. This study examines the relationship between share prices and bonus announcement. Efficient market emerges when new information is quickly incorporated into the price. Earnings announcements provide a yardstick that can be utilized by the market to assess the wealth and profitability of a firm. In other words the current market price should reflect all publically available information. Information always acts as an important tool to analyze the value and worth of share and company respectively. Under such conditions the current market price in any financial market could be the best unbiased estimate of the value of the investment. The AARs (Average Abnormal Returns) and CAARs (Cumulative Average Abnormal Returns) were analyzed to ascertain whether an opportunity (golden chance) was available to make above abnormal returns during the price adjustment period. This paper takes the sample of bonus announcements by 84 companies listed in Bombay Stock Exchange (BSE) 500 from the period 2001 to 2013. Empirical results indicate that the announcement of bonus and change in stock price has a positive influence, but such results only partly support the hypothesis. The present study is an attempt to test the informational efficiency of the Indian Stock Market in the semi-strong form of efficient market hypothesis with respect to the information content of the event bonus issue announced by companies listed in BSE 500 during the study period. The study also reveals that the investors have not been able to earn abnormal returns in the studied companies.

Keywords: Efficient Market, Informational efficiency, Event based Study, Semi Stron form of Market, Bonus Issue, AARs and CAARs

INTRODUCTION

Financial market is a market for the exchange of capital and credit instruments. It comprises the money market and the capital market. While money market is the market for short term debt securities which comprises typically highly liquid instruments, capital market is the market where long-term debt securities and equities are traded. The goal of the corporate entities is to maximize the value of the shareholders' investment in the firm. Managers pursue this goal through their investment, financing and dividend decision. Investment decision involve with the selection of positive net present value projects while financing decision involve with

selection of a capital structure that would minimize the cost of capital of the firm (Hamid and Chowdhury, 2005). In addition, managers need to decide dividend decision on a regular basis that involves with whether to payout earnings to shareholders to reduce agency problem (Jensen and Meckling, 1976).

In order to attract investments and capital creation, it is imperative to create confidence of the investors in the market and to achieve this, prices of the securities dealt with in the market should be efficient. Even though many other considerations do exist, price efficiency may be considered as a dominant one. The correctness of the price is hence an important factor in the securities market. Price of securities in the market is information driven and the perception of the market of available information is expected to be reflected in the price. Capital markets react to various corporate announcements, and one such significant announcement is the earnings announcement. In an efficient market, if the announcement conveys vital information, then it is assumed that such information will be reflected by stock price movements (Hussin et al. 2010) as soon as the information is publicly released to the market. Earnings, per se, are an interesting phenomenon to observe, because they carry inside information about the company's future prospects (Aharony & Swary 1980).

Market efficiency refers to a condition, in which current prices reflect all the publicly available information about a security. The basic idea underlying, market efficiency is that competition will drive all information into the price which would incorporate them quickly for the prices to get adjusted. In other words, the current market price is expected to reflect all available information. Under such a condition the current market price in any financial market would be the best unbiased estimate of the value of the investment. Efficient Market Hypothesis (EMH) The Efficient Market Hypothesis (EMH) has been considered as one of the cornerstones of modern financial economics. Fama first defined the term "efficient market" in financial literature in 1965, as one in which security prices fully reflects all available information. The market is considered efficient, if the reaction of market prices to new information is instantaneous and unbiased. Efficient market hypothesis is based on the idea that information is quickly and efficiently incorporated into asset prices at any point in time and consequently past prices cannot be used to predict future price movements since addition to existing information cannot be foreseen. All markets are neither fully efficient nor are they fully inefficient. Their levels of efficiency vary in between. Fama (1970) classified market efficiency into three different forms namely, weak form, semi strong form and strong form based on the type of information set that is reflected in the share prices.

Weak Form of Efficiency

The weak form of efficiency stipulates that current security prices already reflect past price and volume information. The information contained in the past series of prices of a security is fully reflected in the current market price of that security implying no above normal returns is possible based on the past price information or trend.

Semi - Strong Form of Efficiency

The semi strong form of EMH states that all publically available information is immediately incorporated into security prices and hence is fully reflected in a security's current market price. The public information includes not only past prices but also information like data reported in a company's financial statements, company's announcements, economic factors

and others.

Strong Form of Efficiency

The strong form of EMH stipulates that private information or insider information too, is quickly incorporated in the market prices and therefore such information cannot be used to predict future prices. Thus, all information, whether public or private, is fully reflected in a security's current market price and thus information asymmetry cannot be a ground to anticipate future prices. The net effect of non-predictability of prices is that, it cannot be effectively used to earn profits through trading, exclusively by such information holders. In other words, if extra profits could not be earned by using such information, the market is efficient. If not, the market would not be efficient with respect to that information and the form.

Bonus Issue

Many company related information, happenings and announcements affecting its operations and finance would have its impact on the value, through the market perception of such information. One such decision of the company is announcement of bonus shares. Bonus shares are distribution of additional stocks to the existing shareholders. It is a free issue of shares in the sense; it is in the nature of distribution of accumulated profits made, to the existing shareholders in proportion to their current holdings. Bonus issue increases the number of equity shares outstanding but have no effect on shareholders proportional ownership of shares. If a company distributes accumulated reserves through a bonus issue, it effectively transfers retained earnings into paid-up capital. Thus, it results in each shareholder holding a larger number of shares and with more stocks on issue, but their relative claim on the assets of the company remains the same. There is also no effect on the capital structure and the financial position of the company. The relationship between bonus announcements and share prices has been the subject of much of empirical discussion within the finance literature. Analysis of semi strong form of market efficiency has been limited to the study of well developed stock markets. The present study attempts to test the stock price reaction to information content of bonus issues with a view to examining whether the Indian Stock Market is efficient in its semi strong form.

REVIEW OF LITERATURE

Company earnings have been the subject of research for decades, and different angles have been explored to define the importance of company earnings. Many studies have been made on testing the semi-strong form of efficient market hypothesis in relation to bonus issue announcements. A reference to these earlier studies will be relevant in the context of shaping the present study. Thus, many researches have been conducted from time to time on this topic till now. Prominent amongst them is "Bonus Share Issues and Announcement Effect: Australian Evidence", Balachandran Balas Ingham and Tanner Sally (October 2001), which ended with the conclusions that price reaction to bonus issue announcement from the day of the announcement to the day after the announcement statistically significant and positive of average 2.37% for un contaminated events and 2.11% for contaminated events employing the market model.Evidence available from U. S market reflects the absence of abnormal positive return on and around announcements as well as effective day and increase in variance following ex-day. Though these evidences are less consistent and more confusing, several hypotheses have been

presented to explain effect surrounding bonus issue announcement. Some of them are, the signaling hypothesis (Asquith, Healy, and Palepu (1989), Rankine and Stice (1997)) and the liquidity hypothesis (Baker and Powell (1993), Muscarella and Vetsuypens (1996)) are quite popular, Apart from these several studies find that the neglected firm hypothesis provides some explanation power as well (Grinblatt, Masulis, and Titman (1984), Arbel and Swanson (1993), and Rankine and Stice (1997). Aharony and Swary (1980) argue that company managers use earnings as a signalling tool to convey information about the prospects of a company, and they also argue that like bonus, if earnings convey useful information, this will be reflected in stock price changes immediately following a public announcement. Black (1980) adds to this by highlighting that users of financial statements expect earnings to be a measure of value, rather than a change in value. Jensen et al. (1992) analyze the determinants of cross sectional differences in insider holdings, debt and dividend policies of firms. They find that high insider ownership firm chooses lower level of dividend.

Short et al. (2002) examine the potential association between ownership structures and dividend policy for the UK companies. They present the first results for the UK, where the institutional framework and ownership structures are different from those of the US. The results consistently produce strong support for the hypothesis that a positive association exists between dividend payout policy and institutional ownership. In addition, there is some evidence in support of the hypothesis that a negative association exists between dividend payout policy and managerial ownership

Docking, Scott, Koch and Poul (2005) examined the sensitivity of the investor reactions to the recent direction or volatility of underlying market movements. They found that bonus change announcements elicit a greater change in stock price when the nature of the news (good or bad) goes against the grain of the recent market direction during volatile times. For example, announcements to lower bonus elicit a significantly greater decrease in stock price when market returns have been up and more volatile. Similarly, announcements to raise bonus tends to elicit a greater increase in stock price when market returns have been normal or down and more volatile, although this latter tendency lacks statistical significance. We suggest an explanation for these results that combines the implications of a dynamic rational expectations equilibrium model with behavioral considerations that link the responsiveness of investors to market direction and volatility.

Madhuri Malhotra et al. (2007) in their study have examined the share price reaction to the announcement of bonus issue for a sample of Indian companies. Bonus issue announcement yielded negative abnormal returns around the announcement date. There is a negative reaction after the bonus issue announcement conveying that the market under reacts after the announcement. It was also observed that there is no information leakage prior to the announcement.

Barker and Imam (2008) highlight that a company exhibiting high earnings is viewed more favourably by users of financial statements (including investors) than a company with low earnings. Earnings also display management's competitiveness in profitably running a company and the ability to deliver value to shareholders. Hence, a reaction to earnings announcements is regarded as an interesting subject for analysis.

Another recent study conducted on the topic," Bonus Share Announcements and Market Efficiency: A Study of BSE Listed Companies"

Kaur Karamjeet and *Singh Balwinder(2010)* taking BSE listed companies for the year 2005-2009 demonstrate that market reacts positively to these announcements. Positive reaction starts even before the announcements. About 77% events generate positive results on the day of announcement further post-announcement returns are tested for the presence of semi-strong form of efficiency in Indian stock markets. While size-wise results are discriminative, year wise results largely supports the notion of market being efficient in capitalizing the new information. These studies are concerned with the announcement date of bonus issue and its impact and led us to do this research work that what will be the impact of bonus shares on market price and earning per share after record date. The record date is the date on which the bonus takes effect, and shareholders on that date are entitled to the bonus. After the announcement of the bonus but before the record date, the shares are referred to as cum-bonus has been given effect; the shares become ex-bonus.

The present study is expected to help investors in general and small and medium investors in particular, by way of assessing efficiency of the stock market through studying the share price movement at the time of bonus issue announcement.

RESEARCH METHODOLOGY

(a) Statement of the Problem

It is very important to know the absorbing power of market regarding Information content. Market is said to be efficient if it absorbs information quickly and shows its effect on price. Public Announcements generally carry such kind of information whose impact on stock market and its price is quite fast. Additions to existing information and new information would alter the perception of the investors who tend to evaluate the impact of such information and reprice the stocks invested. The kind of information may be announcement of annual earnings, half yearly earnings, quarterly earnings, dividend, bonus issue, rights issue, buy-back, mergers and acquisitions, stock splits, spin-offs, divesture etc. In the developed markets, a number of research studies have been conducted to test the efficiency of the capital market with respect to information content of corporate events. In India, studies to test the efficiency of the stock market with respect to information have been limited. Most of these studies have been industry specific and involving different periods. Hence the present study is an attempt to test the efficiency of Indian Stock Market with respect to information content of bonus issue announcement of select companies listed in the BSE 500. Ideally the event announcement should not result in any change in market price. But this may not practically happen. What needs to be tested is how quick this additional information gets absorbed and prices get adjusted. Correct prices in an efficient market renders fair returns to investors and hence assumes importance. This research paper is focussing on Bonus Announcements made by companies listed on BSE and impact of such announcements on stock return. The purpose of writing this paper is to see weather a golden opportunity was available to existing shareholders to get extra benefit from Stock Exchange or not.

(b) Scope of the study

The present study is an attempt to test the informational efficiency of the Indian Stock Market in the semi strong form of efficient market hypothesis with respect to the event bonus issues announced by listed on BSE 500 companies. Other events are not considered.

This paper is thus confined to one segment of public announcements "Bonus Issue" with reference to informational agency and market efficiency.

(c) Objectives of the Study

The objectives undertaken in this research paper are as follow:

1. To assess the stock returns in terms of change in its market value around bonus announcement for companies listed on BSE 500.
2. To examine the persistence of impact of bonus announcement on stock prices in terms of returns due to change in market value of the companies listed on BSE 500.
3. To suggest measures while taking investment decisions in stock.

(d) Sources of Data

Data has been collected from secondary resources, primarily "CMIE PROWESS database" (**C**enter **f**or **M**onitoring **I**ndian **E**conomy) has been used to get data regarding bonus announcement, name of companies and share price on specified days. Additional information was obtained from Bombay Stock Exchange Official Directory and the BSE website. Additionally news, journals, magazines have been used extensively to collect required background information.

(e)Period of the Study

Study has been confined to long ten years from 2001 to 2013. I strongly believe that this period is more than sufficient to conclude announcement impact on stock return. This paper is based on event methodology i.e. Bonus Announcements, so focussing on semi-strong form of market where past as well as current information make the base of informational agency and market efficiency.

(f) Selection of the Sample

From 2001 to 2013, total of 84 Companies listed in BSE 500 resorted to bonus issues but out of these companies some companies were involved in more than one announcement like split offs, dividend, spin-offs etc. The selection criterion was restricted to Bonus Announcement only because this study conducts research on single impact rather than combined impact. Sometimes company gives enough information content to the market for getting extra benefit which is combined in nature. This combined effect is not analyzed in this research paper so following calculation will make it more clear about selection of companies:

Total Data	84 Companies
Less Bonus Announcement with stock splits	10 Companies
Less Bonus Announcement with Dividend	07 Companies
Less periodical Operating Results	07 Companies
Less Non Availability of share price	26 Companies
Available Sample	34 Companies

(g) Hypothesis of the Study

In order to examine the impact of bonus issue announcements its effect on AARs and CAARs is studied through the framing the following hypotheses:

H01= There is no significant difference between AARs before and after issue of bonus announcement.

Null Hypothesis=AARs = CAARs
H02 = There is no significance difference between CAARs before and after issue of bonus announcement.

Alternative Hypothesis= AARs = CAARs

EVENT STUDY METHODOLGY

It is based on Event Study Methodology. This study will use Cumulative Average Abnormal Return (CAAR) Approach and following steps will be followed for study:-

1. Collection of a sample of firms that had a surprise announcement i.e. the event.
2. Determination of the precise day of announcement and designate this day as zero.
3. Define the period to be studied. For this purpose, the event day has been taken as t=0 and I have studied 40 days around the event i.e. 20 days prior to the event –20, -19, -18,.....,-1 and 20 days after the event,+1,+2,+3,....., +20.

$$Rjt = (Pjt - Pjt\text{-}1)/Pjt\text{-}1 \ldots (1)$$

Where, Rjt is return of security 'j' at day't'
Pjt is price of security 'j' at day't'
Pjt-1 is price of security 'j' at previous day observed

4. For each of the firms in the sample computation of return on each of days being studied.
5. Computation of 'Abnormal' Return for each of days being studied for each firm in the sample.
6. Computation for each day in the event period the average abnormal return for all the firms in the sample.
7. Often the individual day's abnormal return is added together to compute the cumulative abnormal return from the beginning of the period.

DATA ANALYSIS AND PRESENTATION

Table 1
AARs and CAARs OF BONUS ISSUE ANNOUNCEMENTS

Days	AAR	t-statistics	CAAR	t-statistics	Days	AAR	t-statistics	CAAR	t-statistics
-20	-0.2867	-0.882	-0.2867	-0.882	1	0.6467	1.071	9.0013	2.531b
-19	-0.2066	-0.786	-0.4932	-1.152	2	-0.0456	-0.086	8.9557	2.473b
-18	0.4592	0.849	-0.034	-0.049	3	-0.951	-2.308b	8.0047	2.221b
-17	-0.6927	-1.823c	-0.7267	-0.938	4	-0.3141	-0.795	7.6906	2.142b
-16	0.3591	0.876	-0.3676	-0.471	5	-0.256	-0.657	7.4345	1.986c
-15	0.4091	0.966	0.0415	0.057	6	0.8095	1.601	8.244	2.128b
-14	0.2529	0.526	0.2944	0.343	7	0.1196	0.316	8.3636	2.086b
-13	0.0362	0.101	0.3305	0.362	8	-0.1113	-0.22	8.2523	2.030c
-12	0.119	0.33	0.4495	0.408	9	-0.2581	-0.547	7.9942	1.923c
-11	0.4152	0.91	0.8647	0.696	10	0.4216	1.169	8.4158	2.040b

-11	0.4152	0.91	0.8647	0.696	10	0.4216	1.169	8.4158	2.040b
-10	1.0574	2.036b	1.9221	1.451	11	0.1798	0.406	8.5956	2.006c
-9	0.3442	0.784	2.2663	1.488	12	-0.2978	-0.812	8.2978	1.892c
-8	0.0473	0.124	2.3135	1.488	13	-0.2073	-0.702	8.0905	1.761c
-7	0.3434	0.65	2.657	1.455	14	-0.1777	-0.503	7.9128	1.67
-6	2.0218	2.442b	4.6788	1.954c	15	0.4189	0.912	8.3316	1.667
-5	1.9931	2.222b	6.6718	2.410b	16	0.1403	0.337	8.472	1.625
-4	0.0144	0.028	6.6862	2.379b	17	0.2577	0.437	8.7296	1.581
-3	-0.0793	-0.136	6.6069	2.106b	18	-0.3662	-0.678	8.3634	1.476
-2	0.8997	1.468	7.5066	2.232b	19	0.5603	0.939	8.9238	1.592
-1	-0.4933	-1.34	7.0133	2.018c	20	0.7358	1.531	9.6596	1.695c
0	1.3414	1.795c	8.3546	2.429b					

a. Significant at 1% level. b. Significant at 5% level. c. Significant at 10% level.

SOURCE: CMIE DATA BASE PROWESS

The above data is shown with the help of chart where on X Axis Days are mentioned and on Y Axis percentage is mentioned

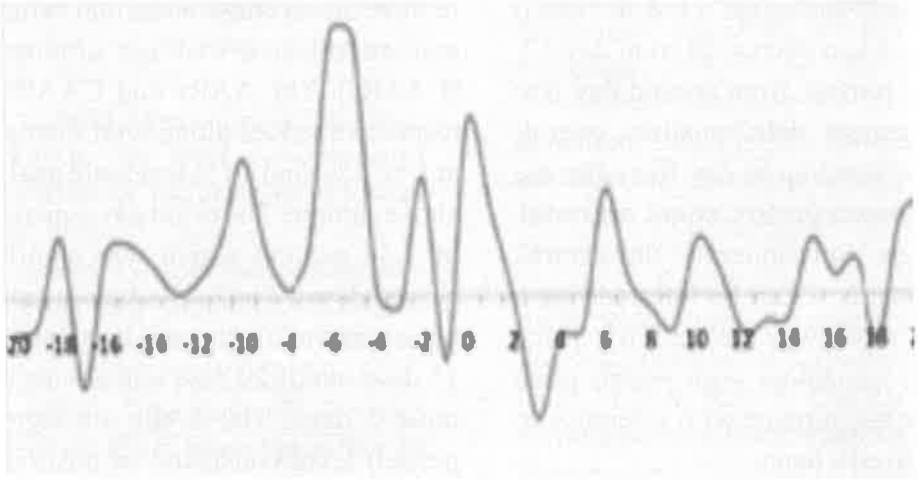

Chart 1AARs of Bonus Announcements

Returns which had occurred on day one after announcement has come down to normal levels during day five. Absence of statistical significance shows that among the companies studied no much of variations had occurred. However, CAARs were positive for 36 days including the event day and negative for only 5 days during the event window. The event day

CAAR of 8.35 percent was significant at 5 percent level. It is seen that there is positive returns of 4.68 percent on day -6 and 7.01 percent on day -1 during the preannouncement period and a return of 7.43 percent on +5th day, 8.25 percent on +8th day, 7.99 percent on +9th day, 8.29 percent on +12th day, 8.09 percent on +13th day and 9.66 percent on +20th day during the post-announcement period at 10 percent level of significance. The CAARs results were significant at 5 percent level consisting of positive returns of 6.67 percent on day -5, 6.69 percent on day -4, 6.61 percent on day -3, 7.51 percent on day -2, 9.00 percent on day +1, 8.95 percent on day +2, 8.00 percent on day +3, 7.69 percent on day +4, 8.24 percent on day +6, 8.36 percent on day +7 and 8.41 percent on day +10.

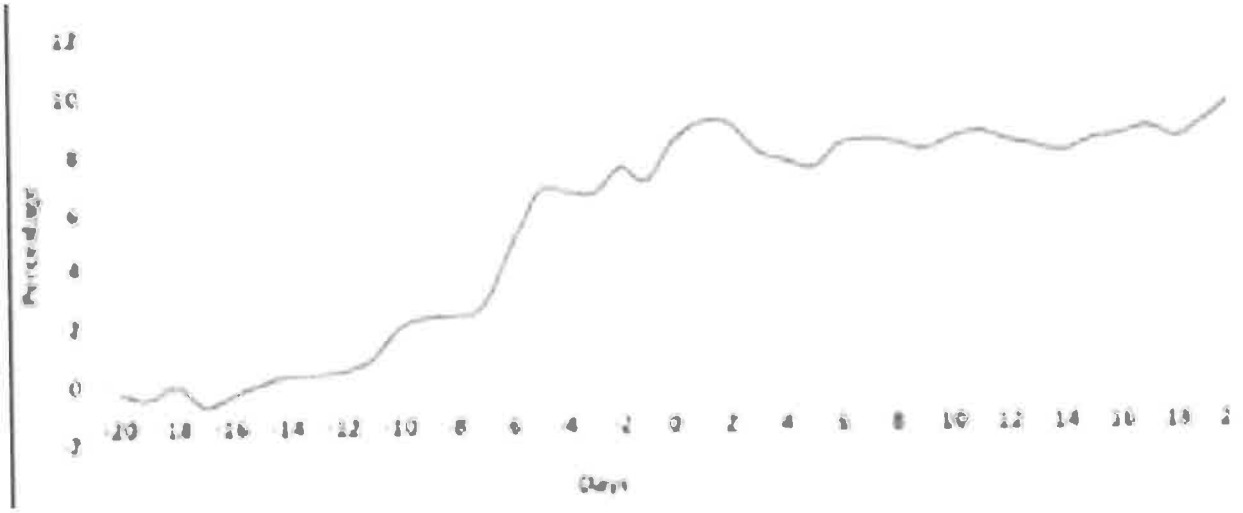

Chart 2 CAARs of Bonus Announcements

The CAARs figures show that it has increased from day -10 itself and decreased from day +2. It indicates that, starting from around day five before announcement date, positive overall changes have occurred up to day five after the announcement, except for some intraday negative changes. Subsequently the returns have remained static. It can be inferred that a period of five days was needed for price adjustment. The quickness with which price adjustment have taken place with reference to the study points to efficiency.

FINDINGS OF THE STUDY

Table 1 presents the results obtained by computing the AARs and CAARs for the 34 companies' bonus issue announcements. For each of the 41 days in the event window it reports the average abnormal returns (AARs) and cumulative average abnormal returns (CAARs). The AARs and CAARs with their respective values along with their significance at 1 %, 5 %, and 10 % levels are analyzed for the above sample. The event day generated an AAR of 1.34 percent which was significant at 10 percent level. The AARs before announcement period from -20 days to -1 day are positive for 15 days out of 20 days and are negative for the other 5 days. The AARs are significant at 5 percent level consisting of positive returns of 1.06 percent on day -10, 2.02 percent on day -6 and 1.99 percent on day -5. On day -17 a negative return of 0.69 percent during the pre-announcement period which was significant at 10 percent level. During the post event period there was no consistent pattern in the AARs. It

was negative for 10 days out of 20 days and is positive for remaining days. AARs after the announcement day are not statistically significant except on day +3. It reveals that the investors did not have a chance to earn abnormal returns due to the event. The AARs consequent to bonus issue announcement are presented graphically in Chart.1

CONCLUSION

Efficient market emerges when new information is quickly incorporated into the price. The study was taken up to test the stock price reaction to information content of bonus issues with a view of examining whether the Indian Stock Market is efficient in semi strong form. AARs after the announcement day (except +3 day) are statistically not significant. It reveals that the investors have not earned abnormal returns in the sample companies. This is corroborated by the CAAR data as well. This implies that the level of efficiency of the stock market is high.

REFERENCES

- Abdmoulah, W. (2010) 'Testing the evolving efficiency of Arab stock markets', *International Review of Financial Analysis*, 19(1): 25–34.
- Abedini, B. (2009) 'Weak-form efficiency: Stock market in the Gulf Co-operation Council countries', *SCMS Journal of Indian Management,* 6(3): 15–28.
- Aharony, J. & Swary, I. (1980). 'Quarterly dividend and earnings announcements and stockholders' returns: An empirical analysis', *Journal of Finance,* 35(1): 1–12.
- Asamoah, G. (2010). 'The impact of dividend announcement on share price behaviour in Ghana', *Journal of Business & Economics Research,* 8(4): 47–58.
- Asiri, B. (2008). 'Testing weak-form efficiency in the Bahrain stock market', *International Journal of Emerging Markets,* 3(1): 38–53.
- Ball, R. & Shivakumar, L. (2008). 'How much new information is there in earnings?' *Journal of Accounting Research,* 46(5): 975–1016.
- Ball, R. & Brown, P. (1968). 'An empirical evaluation of accounting income numbers', *Journal of Accounting Research,* 6(2): 159–178.
- Barker, R. & Imam, S. (2008). 'Analysts' perception of "earnings quality"', *Accounting and Business Research,* 38(4): 313–328.
- Basistha, A. & Kurov, A. (2008). 'Macroeconomic cycles and the stock market's reaction to monetary policy', *Journal of Banking and Finance,* 32(12): 2606–2616.
- Bernard, V. & Thomas, J. (1989). 'Post earnings announcement drift: Delayed price response or risk premium', *Journal of Accounting Research,* 27: 1–36.
- Bhana, N. (1995) 'the share market reaction to earnings announcements: A test of the efficiency of the Johannesburg Stock Exchange', *Investment Analysts*, 42: 45–57.
- Bhana, N. (2005). 'The share price reaction to management buyout announcements of listed on the JSE Securities Exchange', *Investment Analyst Journal,* 62: 19–30.
- Black, F. (1980). 'The magic in earnings: Economic earnings versus accounting earnings', *Financial Analysts Journal,* November–December: 19–24.
- Bowman, R.G. (1983). 'Understanding and conducting event studies', *Journal of Business Finance and Accounting,* 10(4): 561–584.
- Brown, S.J. & Warner, J.B. (1985). 'Using daily stock returns: the case of event studies', *Journal of Financial Economics,* 14: 3–31.
- Chai, M.L. & Tung, S. (2002). 'The effect of earnings announcement timing on earnings
- management', *Journal of Business Finance and Accounting,* 29(9&10): 1337–1354.
- Chan, A.L.C., Lin, S.W.J. & Strong, N. (2009). 'Accounting conservatism and the cost of equity capital: UK evidence', *Managerial Finance,* 35(4): 325–345.
- Charles, A. & Darné, O. (2009). 'The

random walk hypothesis for Chinese stock markets: Evidence from variance ratio tests', *Economic Systems,* 33(2): 117–126.

- Chatuverdi, H.O. (2000). 'Empirical anomalies based on unexpected earnings: The Indian experience', *ICFAI University Journal of Accounting Research,* VI (1): 1–13.
- Dasilas, A., Lyroudi, K. & Ginoglou, D. (2008). 'Joint effects of interim dividend and earnings announcements in Greece', *Studies in Economic Finance,* 25(4): 212–232.
- Deshmukh, S., Fatemi, A. & Fooladi, I.J. (2008). 'Complexity of information and trading behavior: The case of dividend increase announcements', *Journal of Economic Psychology,* 29(1): 1–18.
- Dey, M.K. & Radhakrishna, B. 2008. 'Who profits from trading around earnings announcements? Evidence from TORQ data', *Journal of Asset Management,* 9(4): 300 308.
- Drew, M.E. Naughton, T. & Veeraragavan, M. 2005. 'Pricing of equities in China: Evidence from Shanghai Stock Exchange', *Managerial Finance,* 31(12): 46–57.
- Fama, E.F. & French, K.R. (1992). 'Cross-section of expected returns', *Journal of Finance, 47*(2): 427–465.
- Fama, E.F., Fisher, L., Jensen, M.C. & Roll, R. (1969). 'The adjustment of stock prices to the new information', *International Economic Review,* 10(1): 1–21.
- Galagedera, D.U.A. (2007). 'A review of asset pricing models', *Managerial Finance,* 33(10):821–832.
- Graham, M. & Uliana, E. (2001). 'Evidence of value-growth phenomenon on the Johannesburg Stock Exchange', *Investment Analysts Journal,* 53: 7–18.
- Hitchner, J. (2006). 'Cost of capital/Rates of return', In Hitchner, J. (ed.), *Financial Valuation: Application and Models* (2nd edition). New Jersey: John Wiley & Sons.
- Hussin, B.M., Ahmed, A.D. & Ying, T.C. (2010). 'Semi-strong form efficiency: Market reaction to dividend and earnings announcements in Malaysian stock exchange', *IUP Journal of Applied Finance,* 16(5): 36–60.
- Jarrett, J.E. & Kyper, E. (2006). 'Capital market efficiency and the predictability of daily returns', *Applied Economics,* 38(6): 631–636.
- Kim, J.H. & Shamsuddin, A. (2008). 'Are Asian stock markets efficient? Evidence from new multiple variance ratio tests', *Journal of Empirical Finance,* 15(3): 518–532.
- Kong, S. & Taghavi, M. (2006). 'The effect of annual earnings announcements on the Chinese Stock Markets', *International Advances in Economic Research,* 12: 318–326.
- Lim, K-P. (2009). 'Weak-form market efficiency and nonlinearity: Evidence from Middle East and African stock indices', *Applied Economics Letters*, 16(5): 519–522. Lim, K-P. & Brooks, R. 2009. 'Are Chinese stock markets efficient? Further evidence from a battery of nonlinearity tests', *Applied Financial Economics*, 19(2): 147–155.

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