Impact of Analysts' Recommendations on Stock Prices: Evidence from the Karachi Stock Exchange

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Abstract

This study analyzes the impact of analysts' recommendations on stock prices in the Karachi Stock Exchange (KSE*)* using the *Morning Shout*, a report published daily by *Khadim Ali Shah Bukhari Securities Ltd (KASB)* which includes buy and sale recommendations about different stocks. Using event study methodology, a sample period of 2 years and 277 recommendations were analyzed. Market model is used to estimate abnormal returns for stocks around the recommendation dates. Results of the study indicate that analysts' recommendations do create positive abnormal returns for investors and these abnormal returns are the result of the information content. Results show that stocks earned on average 0.41% abnormal return on the day of publication of recommendations and continued to earn abnormal returns till the 10^{th} day of publication of recommendations. Further analysis shows that there is a possibility of information leakage prior to the publication of recommendations, as these securities earned positive abnormal returns prior to the publication of *Morning Shout*.

Chap 1: Introduction

1.1 Introduction and background of the study

This research analyzes the impact of analysts' recommendations on stock prices appearing in a daily published article "morning shout" by a leading brokerage house and research firm KASB. Researchers have been investigating the phenomenon whether stock prices are impacted by analysts' recommendations or not. Cowles (1933) initially analyzed analysts' performance and he concluded that analysts' recommendations have no impact on stock prices. Since then many researchers have presented theories to rationalize the existence of analysts' recommendation, whereas empirical researchers have found mixed support for these theories. A group of researchers are of the view that recommendations do impact stock prices. Davies and Canes (1978), Groth et, al; (1979), Black (1973), Copeland and Mayers(1981), and Givoly and Lakonishok(1979) concluded that analysts' recommendations do create value for the investors. These researches concluded that increase in price of shares is the result of either price pressure or information content present in the recommendations of analysts. Schlumpf, Schmid, & Zimmermann (2008) concluded that increase in the price of securities was mainly to the price pressure created by the analysts in the market and abnormal returns were reversed within the 15 days of the announcement. On the other hand Barber and Loeffler (1993) concluded that increase in prices were result of both price pressure and information content available in the recommendation.

This research attempts to investigate the impact of analysts' recommendations on the stocks listed at the KSE. Also the aim is to check the market efficiency of stock market. According to SECP, all the information should be publicly available to the investors, and no one should gain abnormal profits from inside information. If this is the case then there should be no additional information in the analysts' recommendations. Still, if analysts' recommendations generate abnormal returns, it will be of interest to see what particular information these reports contain which challenges the market efficiency and thus able to gain abnormal returns. Two potential hypotheses are investigated in this study; the price pressure hypothesis and the information hypothesis. Price pressure hypothesis implies that stock prices increase because of temporary buying by the naïve investors stimulated by the recommendations of the analysts. Information hypothesis argues that abnormal returns are due to useful information about the underlying security in the recommendations which results in the price adjustment of stock prices

1.2 Objectives of the study

Objectives of the study are:
1. To examine whether analysts' recommendations have impact on share prices
2. To know whether there is any leakage of the information before the analysts' recommendations are published
3. To know whether prices revert back to their old level after the initial price pressure

1.3 Contribution of the study

This study is first of its kind in Pakistan. It will help investors to know whether to follow analyst recommendations blindly or not. This would also help naïve investors to decide what consequences they can face, if they blindly trust analysts' reports and how efficient their market is in terms of availability of information. This study tries to figure out whether the so-called analysts generally serve the interest of big investors or the interest of small naïve investors by looking for evidence of information leakages before recommendations.

1.4 Limitations of the study

This study is limited to the sample of firms listed at the KSE over the period Jan 2006 to March 2008. Second, this study uses only the recommendations of *KASB* as record of analysts' reports of other brokerage houses is not easily available.

1.5 Scheme of the report

The scheme of the report is as follows. Chapter 1 discusses the introduction of the report, which is about the general overview of the report. Chapter 2 presents the literature review, which discusses different theories about the topic under consideration and work done in the past by different researchers. Chapter 3 discusses the methodology of study, giving information about the model used and sample in the study. Chapter 4 presents analysis of the results of the regression model. Chapter 5 concludes the report, which summarizes the overall report and also gives direction to future research.

Chapter 2: Literature Review

2.1 Historical perspective

Many studies have investigated the impact of analysts' recommendations on stock prices. One can say that they are more aware than a naïve investor operating in the market. Keeping in view their expertise, naïve investors follow analysts' recommendations. On the empirical front, results are mixed. Cowles (1933) was the first to analyze the performance of analysts' recommendations; he concluded that analysts' recommendations do not create any value for the investors. Colker (1963) concluded that recommendations earn no abnormal returns for the investors. Diefenback (1972) and Logue and Tuttle (1973) concluded the same results. On the other hand, several researchers have concluded that analysts' recommendations do create particular value for the investors. Cheney (1969) reported abnormal returns on the securities recommended by analysts and brokerage houses. Davies and Canes (1978), Groth, Lewellen, Schlarbaum, & Ronald (1979), Black (1973), Copeland and Mayers (1981), and Givoly and Lakonishok (1979) concluded that analysts' recommendations do create value for the investors. Bjerring, Lakonishok, &Vermaelen (1983) concluded that recommended securities performed better than all other stocks traded in the market. Schlumpf et, al; (2008) found significant positive abnormal results in the stocks recommended by analysts on the day of publication of analysts' report. Barber and Loeffler(1993) demonstrate a 4% 2-day abnormal return, Metcalf and Malkiel(1994) report a 3% 1-day announcement effect and Wright (1994) documented 4.59% 2-day abnormal return following the announcement. Price movement in a share is mainly because of two reasons i.e. the news regarding share might contain information or it is just because of temporary buying pressure built by a recommendation in the particular stock.

2.2 The price pressure hypothesis

It predicts that analysts' recommendations result in temporary buying pressure created by investors in the recommended securities. The buying pressure can lead to abnormal returns for a temporary period, but its effect should revert back in few days. Researchers provided evidence that increase in share prices is the result of price pressure. Liang (1999) took data of 417 companies covering the period of July 1989-November 1995; he concluded that there were significant positive abnormal returns for two days in

the stocks after the recommendation announcements, which were reversed within 15 days after the publication. Schlumpf, et al;(2008)analyzed 1460 stock listed at Swiss stock exchange, recommendations published in *Finanz and Wirtschaft (FuW),* Switzerland's major financial newspaper. They concluded that abnormal returns were mainly due to price pressure, and most of them experienced mean reversal. Liang (1999) used a sample data of 417 stocks, comprising 216 analyst recommended securities and 201 generally selected securities, published in dartboard column of Wall Street Journal from the period January 1990 to November 1994. Following the event study methodology, he used market model to analyze the data. Results suggested 3.5% abnormal returns for the analyst recommended securities within the two days after publication, but the abnormal returns were reverted within next twelve days, which supports the price pressure hypothesis.

2.3 The information hypothesis

Information hypothesis asserts that experts possess inside information and their recommendations release the relevant information, causing a revaluation of security prices, and create permanent price changes. Barber and Loeffler (1993) investigated analysts' recommendations published in the Dartboard column the Wall Street Journal . Their sample contained 189 stocks, in which 95 were analysts' recommended securities and 94 were generally selected securities. They concluded that price movements were the result of both the information content available in the recommendation and price pressure created by the analysts 'recommendations. Recommended stocks experienced 4% of access returns two days after the publications, which were partially reversed within the 25 days of recommendations, which supports price pressure hypothesis. However, returns were not reversed completely, which was evidence that analysts' recommendations contained new information which resulted in revaluation of securities.

Hemang and Prem (1995) analyzed the impact of recommendations on share prices made by prominent managers at Barron's annual round table. Time period for sample study was from 1968 to 1991. The sample consists of 1751 recommendations, of which 1599 were buy recommendations and 152 were sell recommendations. They concluded that stocks which were recommended for buy earned an abnormal return of 1.91% over the period of fourteen days from the day of recommendation to the day of publication, which clearly shows that recommended stocks outperformed the normal stocks by earning a higher return. Kent (1996) examined the recommendations from 14 major brokerage houses of USA. He examined the ability of analysts to influence stock prices. He analyzed that brokerage firms spend millions of dollars on obtaining information about stocks so the brokerage houses must be rewarded for their research, which might be excess returns for the investors on the stocks they analyze, thus gaining

reputation for themselves. He analyzed the price and volume change of the recommended stocks by examining a three day event window. The results confirmed that obtaining costly information gives additional reward to the brokerage houses in the form of additional returns and their recommendations do contain useful information. Thus results were consistent with information hypothesis, recommended stocks surged by 3% in the three days event window and 2.4% for the 1 month beginning after the 2 days of recommendations, thus consistent with the information hypothesis. Barber, et al; (2003) analyzed stock returns from period 1996 to 2001. They obtained data from *First Call Corporation* which obtains its data from hundreds of brokerage houses. Both the sell side and buy side recommendations were included in the analysis. They analyzed both non-technical and technical stocks. Results showed that analyst recommended stocks outperformed the market from 1996 to 1999 but this trend was reversed during 2000 and 2001. During 1996 to 1999 recommended stocks earned about 3.97% mean abnormal return whereas the same stocks earned a negative 7% mean return both in year 2000 and 2001. In contrast, the underperforming stocks outperformed the market in the same years by yielding a 16.7% and 9.3% return in year 2000 and 2001 respectively, which proved 2000 and 2001 worst years in the last 16 years for analysts. James, et al; (1983) analyzed recommendations of a Canadian brokerage house. Sample period was from September 1977 to February 1981, a total of 179 weeks of data. They compared US stocks and Canadian stocks by considering three groups of stocks, namely the speculative, the recommended and the representative groups. These groups were recommended by a Canadian brokerage house. In order to calculate parameters of the regression they used ordinary least square method and to calculate abnormal returns they used market model technique. Their research showed that recommended stocks earned abnormal returns (0.279%) per week. Their findings were uniform with the hypothesis that analyst recommendations have impact on the stock prices. Their research showed that Canadian stock exchange outperformed the US market during the test period i.e. Toronto stock exchange earned a return of 24.3% and S&P index earning a just of 9.7%. Ronald, et al; (1998) analyzed the spinoff announcements in conjunction with the analysts earning forecast of those companies. Sample period was from 1979 to 1993 comprising of a set of 72 firms for which complete and accurate data was available. Market model technique was used to analyze abnormal returns. Market model parameters were estimated using data 170 days prior to 20 days prior of the information. Results showed that analysts revised their short term estimates for the spinoff firms but their long term estimation remained the same and spinoff stocks did show abnormal returns. Hemang et, al ;(2000) analyzed the performance of *all star analysts* recommended stocks. Sample contained 1158 buy recommendations made by the analysts during 1993 to 1998. *All star analysts* are the top 5 performers in each industry selected by a research company *Zacks Investment research of Chicago* and *Wall Street Journal (WSJ)* on the basis of their recommended stocks performance. Each year top 5 analysts are selected from each industry and included in *all star analyst* list; then they are asked for their recommendations about the companies in the industry and those recommendations are then published in *WSJ*. Researchers analyzed these recommendations published by *WSJ* in *all star analysts* list. Results showed that stocks recommended by those analysts who focus on one industry outperformed those stocks that focus on multi industries.

Goff D. et, al; (2008) investigated the impact of changes in analysts' recommendations after the approval of Regulation Fair Disclosure. 210 firms were selected, and total of 3932 recommendations for these firms were analyzed. Results suggested that analysts' recommendations do add value in the investment of clients and recommendations does contain information as well.

On the basis of above discussion we can formulate three hypotheses.

2.4 Hypothesis

H_0 : Analysts' recommendations have no impact on stock prices

H_{a1}: Analysts' recommendations have positive impact on stock prices due to information content

H_{a2}: Analysts' recommendations have positive impact on stock prices due to price pressure

Chapter 3: Methodology

The methodology used in this research is event study methodology. Event study methodology is used to assess the impact of a particular event on the value of the firm. Basic idea for event study methodology in this research is to find out the abnormal returns incurred due to a analysts' recommendations. Empirically, there is a wide range use of event studies to analyze the impact of mergers and acquisitions, earning announcements, equity issues and corporate reorganization firm value.

3.1 Data sources and sample

In order to investigate the hypotheses, 277 recommendations were taken for analysis purpose. These were the securities recommended during a period starting from January 2006 to March 2008. Sample is based on the rationale prescribed by previous studies. Barber& Loeffler (1993) took a sample period of two years (1988-90). These recommendations are taken from a brokerage house (KASB), licensed by SECP. KASB gives its recommendations in an article (Morning shout) at the beginning of each trading day. KASB covers 75% (approximately) of the companies listed at Karachi Stock Exchange. Securities with only buy recommendations are selected and sell recommendations were not taken. Reason for not selecting sell recommendations is that short selling is banned in KSE, and analysts' are reluctant in giving sell recommendations. Prices of 161 days for each recommended security are then taken to analyze their daily returns and to calculate parameters for market model. To estimate parameters of the market model, share prices data and market index data are collected for a total of 141 days prior to the recommendation data and even window for each security. An even window of 10 days before and 10 days after the recommendation data is used for the calculation of abnormal returns. Thus, a total of 44597 observations are included in sample data i.e. 277 recommendations × 161 days prices. Return on KSE Index is taken as a proxy for return on market portfolio.

3.2 The Model

Famous market model technique is used to analyze the abnormal returns. The parameters of the market model are estimated over a period that extends from 141 days

prior to 11 days prior to the publication day and abnormal returns were calculated for the 21 days centered around the publication day *t=0*. Return on KSE 100 INDEX is taken as proxy for return on market portfolio. T-test statistics are calculated for abnormal returns for event window which comprises of 21 days centered around publication (event) day to check the statistical significance of the results. Abnormal returns are calculated as actual returns less expected returns. Market model is used to calculate expected returns.

$$R_{it} = \propto_i + \beta_i R_{mt} \quad \textbf{(1)}$$

By modifying equation (1) we can get abnormal returns

$$AR_{it} = R_{it} - \propto_i - \beta_i R_{mt} \quad \textbf{(2)}$$

Where AR_{it} is abnormal returns on security *i* at time *t*

R_{it} Is return on security *i* at time *t*

$$\propto_i = \overline{R_{it}} - \beta_i \overline{R_{mt}} \quad \textbf{(3)}$$

Whereas $\propto_i$ the return in excess of estimated return by the parameters of market model on a given security. If there is no abnormal return, both L.H.S and R.H.S of eq (3) should be equal

$$\beta_i = \frac{cov(R_{it}: R_{mt})}{Var R_{mt}} \quad (4)$$

Whereas β_i is the tendency of security *i's* return in respond to the changes in market return.

Chapter 4: Analysis

Simple t-test is applied to check the statistical significance of abnormal returns around the announcement dates. In this regard, an event window of 21 days abnormal returns for 277 recommended securities is used. . Results suggest that analysts-recommended securities earn abnormal returns and recommendations do contain information content. There is also an evidence of information leakage before the publication of recommendations. In order to investigate whether these abnormal profits are due to price pressure created by analysts' recommendations or recommendation really contains information, results can be analyzed further.

Results reported in Table 1 shows that on days t-9, t-6, t-5, t-3, t-1, t 0, t+2, t+4, t+5 and t+8 the recommended securities earned positive abnormal returns that are statistically significantly different from zero at different significance levels of 1%,5% and 10 %. On day t-9 (nine days) before the publication day, recommended securities earned an average 0.33% abnormal return which is statistically significant at 1% significance level. On day t-6 (six days before the publication date) recommended securities earned an average positive abnormal average return of 0.15% which is significant at 10% significance level. Similarly, don day t-5 these securities yielded an average abnormal return of 0.165% significant at 10% level. On day t-3 the recommended securities earned an average positive abnormal return of 0.13% at 10% significance level.

Table 4.1 Average Abnormal returns in recommended securities listed in *KSE* published in *Morning Shout,* daily article by *KASB*

	Test Value = 0					
					95% Confidence Interval abnormal return of value of the Difference	
	T	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
t-10	.570	276	.569	.0005	-.0013	.0025
t-9	3.252***	276	.001	.0033	.0013	.0052
t-8	.434	276	.665	.0004	-.0016	.0026
t-7	.229	276	.819	.0003	-.0027	.0034
t-6	1.514*	276	.131	.0015	-.0004	.0034
t-5	1.671*	276	.096	.0016	-.0002	.0035
t-4	1.174	276	.242	.0011	-.0007	.0031
t-3	1.299*	276	.195	.0013	-.0006	.0033
t-2	.513	276	.608	.0005	-.0015	.0026
t-1	4.262***	276	.000	.0044	.0024	.0065
t 0	3.322***	276	.001	.0041	.0017	.0066
t 1	.211	276	.833	.0003	-.0028	.0035
t 2	1.367*	276	.173	.0014	-.0006	.0034
t 3	-.106	276	.916	-.0001	-.0033	.0029
t 4	2.041**	276	.042	.0019	.00007	.0039
t 5	3.393***	276	.001	.0031	.0013	.0049
t 6	-.596	276	.551	-.0008	-.0035	.0018
t 7	-.866	276	.387	-.0011	-.0037	.0014
t 8	1.718*	276	.087	.0019	-.0002	.0042
t 9	1.232	276	.219	.0012	-.0007	.0033
t 10	.425	276	.671	.0008	-.0031	.0048

Abnormal returns are calculated as actual returns minus expected returns calculated using market model

, ** & indicates 10%, 5% & 1% significance level**

Further, one day before the publication date (i.e. day t-1) these securities yielded an average of 0.44% positive abnormal return at significant at 1% level. On the publication day securities earned a positive abnormal average return of 0.41% at a highly significant level of 1%. Two days after publication day these stocks earned average abnormal return of 0.14%, at 10% significance level. On day 4 after publication the abnormal average return is 0.19%, at 5% significance level. 5th day after the publications these stocks recorded a positive abnormal average return of 0.31%, at 1% significance level. On day 8th after publication day, average abnormal return is 0.19%, significant at 10% level.

Table 4.2 Statistically significant post announcement Cumulative abnormal returns (CAR) of recommended securities in KSE

		CAR
t 0	0.0041	0.41%
t 2	0.0014	0.55%
t 4	0.0019	0.74%
t 5	0.0031	1.05%
t 8	0.0019	1.24%

CAR of securities is calculated after the publication of recommendation reports to investigate the information and price pressure hypothesis

Results shown in Table 4.2 are consistent with hypotheses that analysts' recommendations have positive impact on stock prices, because recommended stocks earned significant abnormal returns. Securities earned on average positive 1.24% CAR after the announcement of recommendations. As these stocks kept on earning positive abnormal returns and were not reversed within ten days after publication day, we can conclude that these abnormal returns are due to information contained in the recommendation which resulted in the price adjustment in these stock prices. Results suggests that stocks earn abnormal returns after each passing day, which indicates that there must be valuable information in the recommendation, due to which prices have sustained a substantial increase even after the 10 days of recommendations.

Table 4.3 Statistically significant pre announcement Cumulative abnormal returns (CAR) of recommended securities in KSE

	AR	CAR
t-9	0.0033	0.33%
t-6	0.0015	0.48%
t-5	0.0016	0.64%
t-3	0.0013	0.77%
t-1	0.0044	1.21%

CAR is calculated by summing up prior days abnormal returns. Pre event statistically significant abnormal returns are added to check the evidence for information leakage prior to the publication of analysts' reports

Looking at the results in T table 4.3, an evidence of information leakage is also found. Results indicate that there are positive abnormal returns prior to the publication. CAR prior to the publication of recommendations are approximately on average 1.21%, which suggests that information about these recommendations is leaked out before it is published, and some investors are able to gain abnormal profit from this information, thus violating the spirit of market efficiency and exploiting the rules of Securities and Exchange Commission of Pakistan (SECP). Naïve investors, who follow analysts' recommendations blindly, should try to understand that analysts may sometime serve the interest of big investors and it can result in loss to them.

Chapter 5: Conclusion

5.1 Conclusion

This report analyzed 277 analysts' recommendation about stocks listed at the KSE during the period of Jan 2006 to March 2008. For this purpose recommendations from a well-reputed brokerage house *KASB* were taken. KASB publishes a daily report (*Morning Shout*) which contains buy, sell or hold recommendations about different securities. Purpose of this research is to investigate whether these recommended securities earn abnormal returns in the market. The report also investigated that if there are abnormal returns in these securities, then, are they caused by information content in the recommendations or they are due to artificial price pressure created by analysts in the market. Further, it was investigated whether there was any information leakage before the publication of recommended reports. Results suggested that analysts' recommendations do have positive impact on the share prices. These results are consistent with many prior studies, Cheney (1969), Davies and Canes (1978), Groth, et al; (1979), Black (1973), Copeland and Mayers (1981), and Givoly and Lakonishok (1979) who concluded that analysts' recommendations do create value for the investors. Further, the results showed that these abnormal returns were due to information content given that abnormal returns and were not reversed even after ten days of the publication of the recommendation reports. The results also provided an evidence of information leakages prior to the publication of analysts' reports. This was evident from the positive abnormal returns before the publication dates. . This may be due to the fact that the analysts leaked the information to the major investors in order to strengthen their business ties with them. This phenomenon may be investigated in a future research.

5.2 Suggestions for future research

This research can be further extended in many ways. Sample period can be extended to get a more comprehensive analysis. Data from only the KSE is analyzed in this research report and recommendations from only one brokerage house (KASB) are analyzed; further research can compare KSE with other South Asian markets. Further, recommendations of other brokerage houses can be included in the analysis. Results suggested that there is a possibility of information leakages; further studies can investigate these issues from other aspects to test the Pakistani stock market's efficiency and existence of insider trading.

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