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Trading Volume and Stock Return: The Impact of Events in Pakistan on KSE 100 Indexes

Akysha Khan*, M.Shakil Ahmed**

Tthe purpose of my paper is to examine the relationship between aggregate stock market trading volume and daily stock returns during December 2007-October 2008 during which the events are happened in Pakistan. To study and evaluate the instability in the stock market due to the events & the dependency of fluctuations in stock returns due to the changes in trading volume. The hypothesis of this study states "There is impact of political events on trading volume and stock return". When consider different events that are happened in Pakistan from (December 2007-October 2008), the death of the benzir bhttoo, the election 2008, the bomb blasting on the marriot hotel Islamabad. In this paper, I consider the pre and post period of events (pre & post death period of benzir bhttoo, pre & post election 2008 period' the bomb blasting on the marriot hotel). The results show that stock returns moved too much due to change in the trading volume, the same results were found, changes occur in the value of correlation between the trading volume and stock return. The results show that due the nature of event the relation between the trading volume and the stock return fluctuate, from my study Iam concluded that the event effect the value of Pearson correlation and due to event the value is decrease from their pre event value.

Field of research: Finance

1. Introduction

Trading volume is basically the trading activity in financial markets is extensive and a number of measures of volume have been proposed and studied. Some studies of aggregate trading activity use the total number of shares traded as a measure of volume according to (Gallant, Rossi, and Tauchen, 1992).Stock **return** also known as **return on investment** (**ROI**), **rate of profit** or sometimes just **return**, is the ratio of money gained or lost (realized or unrealized) on an investment relative to the amount of money invested.

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*Akysha khan, Student BS (BA)-VI ,Department of Management Sciences, COMSATS Institute of Information Technology, 43600, Attock Campus, Pakistan ***,Emai : khan_akysha01@yahoo.com***
****Shakil ahmed,lecture*** of department of Management Sciences, COMSATS Institute of Information Technology, 43600, Attock Campus, Pakistan, Email: muhammad_shakil@comsats.edu.pk

The amount of money gained or lost may be referred to as interest, profit/loss, gain/loss, or net income/loss. The money invested may be referred to as the asset, capital, principal, or the cost basis of the investment. ROI is usually expressed as a percentage rather than a fraction (Ali ,1997). (Khalid Mustafa ,2002) study focusing that when events arise like in (Pakistan had nuclear test on May 28, 1998) it changes the correlation between the trading volume and stock return in KSE 100 index and the declining in trading volume from Rs16 million to Rs9 million due to which the stock return on also decrease. Due to arrival of new events it changes the volume traded and subsequently changes the stock price and returns according to (Jennings, Starks & Flemming,1981).The impact of information events on trading activity use individual turnover measure of
volume.(Bamber,1986,1987);(LakonishokandSmidt,1986),(Morse,1980),(Richardson, Sefcik, Thompson, 1986), (Stickel and Verrecchia,1994).Political events affected the stock price due to which the trading volume and the stock return are fluctuated (Nishat, M. and Mustafa, K., 2002). Result with the data from Dec 14, 1991 to Dec 31, 2001 is likely to be dominated in pre-nuclear test Period (Pakistan had nuclear test on May 28, 1998 that has significant impact on KSE-100 and it declines from 1040.19 to 789.15 and trading volume from Rs16 million to Rs9 million). (Ali, 1997) studied the relationship between stock return and trading volume in context of Karachi stock market's daily data for very small time period i.e. nine months data. He found that do to the happening of events the fluctuations in stock return occur. such, (McKenzie and Faff,2003) have shown that the conditional autocorrelation in stock returns is highly dependent on trading volume for individual stocks but not for the index, reflecting the fact that liquidity disparity for stocks has a significant impact at individual level but not at aggregate level.

The objective of this paper is to examine the relationship between aggregate stock market trading volume and daily stock returns during December 2007-October 2008 in which the events are happened in Pakistan. To give a substantial clue to the market practioners for minimizing risks will investing in stocks market and also give a clue that every events have different effect the on stock market which include the trading volume and stock return.

2. Literature Review

As such, the recent studies shown that, like according to (McKenzie and Faff,2003) , the condition correlation of stock returns is highly dependent on trading volume for individual stocks but not for the index, reflecting the fact that liquidity disparity for stocks has a significant impact at individual level but not at aggregate level. Regarding other few studies including Turkish stock market, (Guner and Onder,2002) have found out a significant relationship between

volatility and trading volume. Specifically, they have found out that even though higher volatility is associated with low volume stocks in general, for morning session, high volume stocks also exhibit high volatility stemming from the intensity of information-based trading for high volume stocks in stock market opening.

During early nineties the non-informational factors greater influence on stock market activity in Pakistan. These factors are including structured changes in stock market, constructing the stock price index, based on market capitalization.(Omran and Mckenzie, 2000) investigated the relation between volume of trade and conditional variance of trade and found the significant relation between timing of innovational outliers in returns and volume. Fluctuation in trading activity is not only explained by publicly available information but also by non-information trade due to events, It indicates that stock returns moved too much due to change in the fundamentals, trading volume, and changes in effective risk aversion of market participants (Nishat, M. and Mustafa, K, 2002). (Campbell, Grossman and Wang ,1993) examined the relationship between aggregate stock market trading volume and the correlation of daily stock return. They found that a stock price decline on high volume day is more likely than a Stock price decline on low volume day to be associated with an increase in the expected stock return.

(Viswanathan ,1993) report quite contradictory results specifying that high adverse selection costs and thus higher return volatility are found at times of the day with higher trading volume.(Sabri, 2004) has discovered that trading volume represent one of the main factors in predicting return volatility.(Mitchell, Mark L., and J. Harrold Mulhern,1994) the interaction between various traders leads to patterns in trading volume bid-ask spread, variability, and returns.(Lipson, 1994) argue that the size of trades or volume has a significant effect on return volatility.

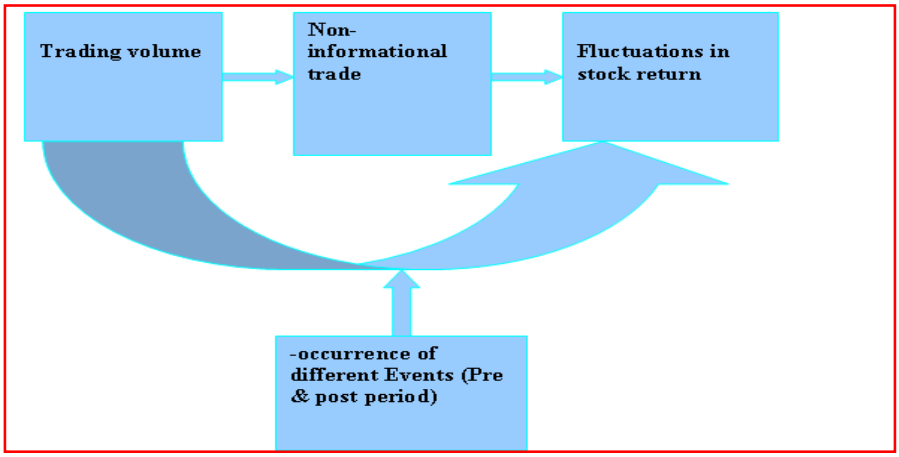
The basic logic to use the volume is that the trading activity has explanatory power in addition to past returns, and price changes accompanied by high volume tend to be reversed .the relationship between stock prices and trading volume in context of Karachi stock market's daily data for very small time period i.e. nine months data. He found that significance of non-informational trade in explaining the fluctuations in stock prices. (Ali,1997).Suggested by Morgan (1999), volume is regarded as a major risk factor contributing to the volatility of returns, particularly in less liquid and thin markets including emerging markets.
(Gunduz and Hatemi,2005) determined that there is a co integrating relationship between stock price changes and volume in stock market indicating a long term relationship between these variables resulting from the information based effect of volume on price changes as well as the encouraging impact of positive price changes on trading volume. Some theoretical papers suggest 'causality' between changes in volatility and volume, This is due to the arrival of new events (McMillian and Speight,2002).Stock market trading volume is extensive, but is mostly concerned with the relationship between volume and the volatility of stock

returns. Numerous papers have documented the fact that high stock market volume is associated with volatile returns (Jain and Joh, 1998 and Mulherin and Gerety, 1999). (Omran and Mckenzie ,2000) investigated the relation between volume of trade and conditional variance of trade and found the significant relation between timing of innovational outliers in returns and volume. Recent empirical studies have investigated the dynamic relationship between trading volumes and returns.

Due to inadequate regulatory and weak enforcement of rules, there has risen the problem like as insider trading and unchecked margin requirement trading. As a result these created the leverage (Nishat, 2001), which can easily forced investors in bankruptcy problem if the investors expectation about future prices are not realised. A number of mega projects in priority sectors (Government of Pakistan provided subsidies and special tax treatment to these sectors in 1990s ,Economic Survey of Pakistan, Ministry of Finance) like PTCL.

(Gunduz and Hatemi, 2005) determined that there is a co integrating relationship between stock price changes and volume in stock market indicating a long term relationship between these variables resulting from the information based effect of volume on price changes as well as the encouraging impact of positive price changes on trading volume.

2.1. Conceptual model:



The model of my study is as above and by considering this model iam developing the hypothesis statement, here the trading volume is independent variable and the stock return is the dependent variable. This model explain that as under,

- If events are occurring then the trading volume fluctuates and then non-information trade is happen and stock return is increases or decreases.

- If trading volume changes then stock return changes due to the happening of events.

And through this model and hypothesis statements help in analyzes the statement and explaining the results.

3.Methodology

The study used to tell the correlation between the trading volume and the stock return and the statistical techniques are used to analyze the data.

a) Instrument

Data is collected from **KSE 100 index**, the data was collected from the data provided by "business recorder" on the internet and from daily news paper business recorder in which i have studied the impact of events on the companies included in the **KSE 100 index.** I have used it re-examine the trading volume and fluctuations in the stock returns due to events occur in Pakistan. I have considered different events that are happened in Pakistan, the death of the benzir bhttoo, the election 2008, and the bomb blasting on the marriot hotel. And find the results what effect occur on the trading volume and the stock return whether their relation between them are positive or negative correlated before and after the events occur. The time period and events names are as under

event name	**date of event occur**	**pre event period**	**post event period**
death period of benzir bhttoo	27th dec 2007	12dec2007-26dec2007	31dec2007-10Jan2008
election 2008 period	18 Feb 2008	4Feb2008-15Feb2008	19Feb2008-29Feb2008
period of attack on the marriot hotel	20 Sep 2008	12Sep2008-19 sep2008	24Sep 2008-1Oct 2008

Different event show different values of correlation between the trading volume and stock return. In my study I consider the period of **8 days** before (means pre period of event occur).the event occur and **8 days** after (means post period of event occur), the event occur excluding the holidays.

b) Procedure and Statistical Methods

Obtain the data from the indexes of KSE -100 indexes from business recorder. The obtained data is analyzed through mini tab (version 11) software. Here I find the value of correlation before and after the events between the trading volumes and stock return, the statistical methods involved those of inferential statistics (Pearson Correlation)

4. Results

A Correlation between independent (trading volume) & dependent (stock return) Variables when the pre and post period of events occur

According to (Scheffe H; 14, 2001) Correlation is a measure of the statistical relationship between two comparable time series. For investors, these series may be two commodities, two stocks, a stock and an index or even a stock and a commodity. View the correlation coefficient, which lies between the ranges of (-1.00 to +1.00), as a positive or negative probability that the members of a market pair relate to each other.

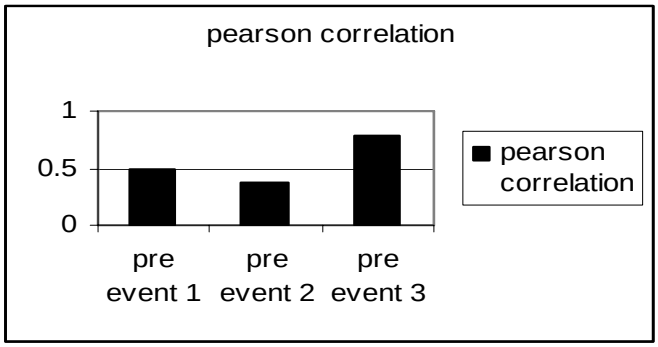
The graphs of pre and post events are as under

Per events:

The table shows the value of the Pearson correlation and regression, t-value-value and the pre numbers of events and the all the values are depend upon the pre events period and post events period.

Table 1 and graph

Pre events	Pearson correlation	p-value	t-value	Regression	R2
Event 1 (death period of benzir bhttoo)	0.488*	0.000	50.11	5.77	23.88%
Event 2(election 2008)	0.377*	0.000	33.2	5.4	14.21 %
Event 3(bomb blasting on Marriott hotel)	0.786*	0.00	60.11	20.1	61.77%



The per event 1 period ,death period of benzir bhttoo from (12dec2007-26dec2007)shows the value of Pearson correlation of (0.488) which mean that

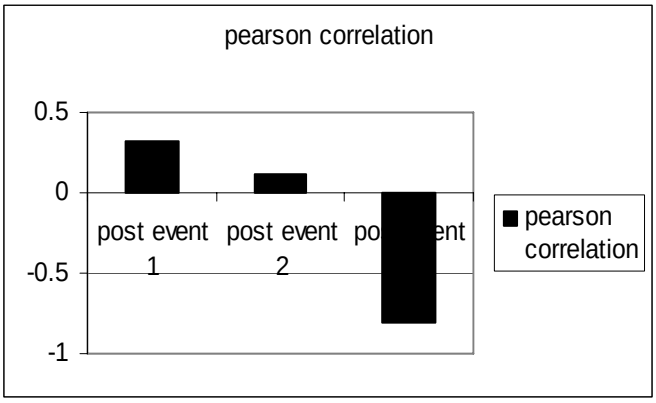
the trading volume and stock return are positively correlated in pre period Of happening of event and the value of regression of return associated with trading volume is 5.77 and t-value 50.11 and p-value 0.00s ,$\mathbf{R}^2$ which is the square of correlation value is 23.88% which shows that the trading volume and stock return have positive relation and have not so very much strong but have little bit strong relationship between them & the pre event 2 election 2008 period from (4Feb2008-15Feb2008) shows the value of Pearson correlation of (0.377), it mean that the relation is positive but less correlated to event 1and the value of regression of return associated with trading volume is 5.4 t-value 33.2 and p-value 0.00s ,$\mathbf{R}^2$ which is the square of correlation value is 14.21% which shows that the trading volume and stock return have positive relation mean as trading volume increase the stock return also increase and have not so very much strong but less strong relationship between them as compare to event 1 , & the pre event 3 period of bomb blasting on Marriott hotel from (12Sep 2008-19 sep2008) shows the value of Pearson correlation (0.786) 1and the value of regression of return associated with trading volume is 20.1 t-value 60.11 and p-value 0. ,$\mathbf{R}^2$ which is the square of correlation value is 61.77% which shows that the trading volume and stock return have positive relation mean as trading volume increase the stock return also increase and it mean that the relation is so much strong relation as compare to pre events(1,2) and positive correlated .

*(show that the trading volume and stock return are positive correlated)

** (show that the trading volume and stock return are negative correlated).

Table 2 & graph:

Post event	Pearson correlation	p-value	t-value	Regression	R2
Event 1(death period of benzir bhttoo)	0.322*	0.00s	32.5	4.35	10.36%
Event 2 election 2008)	0.112*	0.000	23.11	2.35	1.25%
Event 3(bomb blasting on Marriott hotel Islamabad)	-0.805**	0.000	10.9	.054	-64.5%



After that when the event is occur from the next day what is the condition of KSE 100 indexes shown by the above table 2, post Event 1 period death period of benzir bhttoo from (31dec 2007-10 Jan 2008) show the value of Pearson correlation of (0.332) and the value of regression of return associated with trading volume is 4.35 t-value 32.5 and p-value 0.00s ,$\mathbf{R}^2$ which is the square of correlation value is 10.36% which show that from compare with the pre event 1 correlation value, happening of events effect the relation and the value of correlation become less and the value of $\mathbf{R}^2$ show that have weak relation between the trading volume and stock return as compare to their post event value but have positive relation in them mean that as trading volume increase the stock return also increases. . Post event 2 period of election 2008 from (19 Feb2008-29 Feb. 2008) the value of Pearson correlation is (0.112), which mean that as compare with per event value the event bring bad effect on market, the value of regression of return associated with trading volume is 2.35 t-value 23.11 and p-value 0.000, $\mathbf{R}^2$ which is the square of correlation value is 1.25% ,the value of correlation is positive correlation but it is decreases from it pre value of correlation value and have weak relation as compare to pre event election 2008 period. and the post event 3 period of bomb blasting on Marriott hotel Islamabad from (24 Sep 2008-1Oct 2008) value of correlation (-0.805) the value of regression of return associated with trading volume is 0.54 t-value 10.9 and p-value 0.000 ,$\mathbf{R}^2$ which is the square of correlation value is (-64.5%) mean that after the have very weak relation ship as trading volume increase so the stock return decrease , shows that the market go down and the trading volume and stock return are negative correlated mean the relation is negative as mean that so as trading volume increase mean like the share holder or share taker sell the stock so as trading volume increase the stock return decrease the stock prices goes down and the investor get low return by selling them. the variation between the Pre-event periods and Post-event periods are the hypothesized statement of political events having an impact on the stock returns and trading volume as events are happen so trading volume is effected and the stock return is depend upon the trading volume so it is also fluctuated. the result of these event show that all event Shave some bad reaction on the stock market so the market is fluctuate as in event 1 & 2 have less effect but event 3 have shown lot

of effect in that time the correlation become negative because have the investor face more risk .

5. Conlusion And Recommendation

A study will determine the relationship between trading volume and fluctuations in stock returns of KSE 100-INDEX due to events and after analysis we draw the conclusion that events significantly affect the trading volume and stock returns of KSE 100-INDEX. Study indicates that due to events changes in the trading volume occurs through which fluctuations in the stock returns take place. The results show that It shows that due to the arrival of event the relationship between trading volume and stock return is affected .The results also indicate that stock market moved too much due to change in the fundamentals, aggregate expected returns, and changes ineffective risk aversion of market participants due to the nature of event the relation between the trading volume and the stock return fluctuate, from my study Iam concluded that the event effect the value of Pearson correlation and due to event the value is decrease from their pre event value. And the fluctuations in the value of correlation can not be reducing because the happening of events can not be stop. The positive and negative value of the correlation depend on the nature of the event happened, if the happening of bad events are stop like the bomb blasting on Marriott hotel Islamabad and other so the value of correlation between the trading volume and stock return become positive. On the basis of this study it can be recommended that further studies can be conducted plus further scope of research lies in this study as well where the intensity of impact of the stated political event can further explained.

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