

An evaluation of investors' behavior and sentiments during heavy fluctuation in stock index; A case study of Pakistan Stock Exchange

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ABSTRACT

The role of stock exchange is highly dynamic regarding the capital mobilization in Pakistan and contributes an important role in overall financial sector of economy. The chief purpose of this article is to analyze the behavior and sentiment of investors during the heavy fluctuation in Stock Index at Pakistan Stock Exchange (PSX). The sentiment indexes for stock exchange selected for this research are Total Market Capitalization, Total Listed Capital - Rs., KSE-100" Index, KSE-30" Index, KMI-30 Index, PSX-KMI All Shares Index, New Companies Listed during the year, Listed Capital of New Companies - Rs., New Debt Instruments Listed during the year, Listed Capital of New Debt Instruments - Rs., Average Daily Turnover - Shares in million, Average value of daily turnover - Rs And Average Daily Turnover (Future). The indicators are analyzed by Correlation Analysis. The results prove that investor sentiment has positive effect on market returns.

Keywords: Stock Exchange, Investor's sentiments, Fluctuation, Average value of daily turnover, Market capitalization

INTRODUCTION

The sentiment of investors refers to common belief, mood and performance expectation of market. It is considered as an emotional factor that might have a direct impact on decision making of investors. The sentiments are rather irrational and based on some noisy information that doesn't indicate the basic stock characteristics with limited experience of trading, skills or knowledge and might stimulate the investors for trading at illogical times or either led to under or overestimation of performance of stock (Neupane, Paudyal, & Thapa, 2014). On the basis of this logic, investors are affected by different irrational sentiments that can impose varied additional risk on different trading stocks. (Haroon & Jabeen, 2013) argued that if investor sentiments are influenced by a general market noisy signal for example rumor, simultaneously investors can under or over-react to performance of majority stock in future in market. In such situation, the sentiment factors might serve as a systematic factor that can lead to deviation from stock price from equilibrium levels in case of restricted arbitrage.

The theory of risk and return also entails that investors can obtain more returns in developing states as compared to developed states. A large number of investors are keen for diversification of investment in emerging economies for minimization of different risks. It is also observed that a stock price has direct effect on exchange rate and respective regulatory authorities might take effectual measures for the stabilization of stock market. Moreover, relationship of both markets is

useful for investors regarding the forecasting of one market by using the information of other market. (Li, Xie, Chen, Wang, & Deng, 2014) describes that increase in stock price leads to increase in exchange rate and rise in stock price is highly attractive for foreign investors and it results in increased demand of local currency and as an effect local currency appreciation also increases.

This research is intended on the empirical investigation of determination of relation between stock market vitality and exchange rate fluctuation in Pakistan in context of sentiments of investors during heavy fluctuation in stock index. In respective study, past data from the year 2012 to 2016 is selected and patterns and trends of stock market is determined for the achievement of research objectives. As the Pakistan stock exchange is perceived as the representative of economy of Pakistan, therefore this study is intended to realize how much movement of exchange rate and stock volatility are related to each other and as an effect investor as well as regulatory authorities are able to take effectual decisions. In theoretical context, these results of the research will add in current literature. Apart from theoretical consideration, the research study will also have practical implication in different regulatory authorities that can be helpful for effectual decision making and helpful for stabilization of stock market as well as appreciation of local company.

An oscillation in stock price is observed regarding the fluctuation in sentiments of investors, as their subjective believe with respect to fundamental value of asset that has affected the stock price. The change due to fall and rise in inventor's sentiment is highly asymmetrical as greater sentiment has stronger impact in comparison to low level of sentiments. It is also argued that a drop in stock market can collapse the confidence of consumer and lead to investor collapse. Thus, perhaps lead to further drop in stock market. The significance of the research project is that sentiment of investor has been vaguely analyzed as a crucial factor of stock price determination in Pakistan. Hence consideration of different behavioral perspectives would be helpful for better realization of different financial markets (Ashraf, Waris, & Saeed, 2014).

Aim of the study

The aim of this research paper is to investigate the sentiments of investors regarding the heavy fluctuation in stock index for Pakistan Stock exchange during the year 2012 to 2016. In this research paper, sentiment index is composed of relevant proxies of sentimental index affecting the vitality of stock market.

Research Question

To what extent, the fluctuations in stock market are affecting the sentiment of investors?

Research Delimitations

A large number of investor sentimental proxies can be used that might have effect on fluctuation in stock market. However, this research paper highlights only few predictors effecting the stock rate fluctuation. In addition, there can be varied explicit proxies of investors' sentiments that can be gained from survey with investors, however, in this paper only few implicit market sentimental indicators are selected, and it is our research limitation.

Significance of Research

The significance of this research study is to evaluate the effect of fluctuation in Pakistan Stock exchange on investor sentiments. The results will be helpful for investors by identifying most critical sentiments that play a vital role in fluctuation of returns of stock market and also the assessment will highlight the perseverance of such sentimental shocks.

Pakistan Stock Exchange

The Pakistan Stock Exchange, formerly known as the Karachi Stock Exchange (KSE), founded on September 18, 1947 (KSE Stocks, 2016). Since the time to the performance in the year 2002, the stock exchange was rewarded as the 'Best Performing Stock Market of the World'. It is observed through The News, (2016) that later on, in October 1970 and in October 1989, Lahore Stock Exchange and Islamabad Stock Exchange were also established respectively, played as the major constituents of Pakistan Stock Exchange. Regarding the listed companies in Pakistan Stock Exchange, the total number of companies listed in Karachi Stock Exchange is 660. In Lahore Stock Exchange, the total number of companies is 152, in which 81 are corporate, and 54 are individual. In Islamabad Stock Exchange, the number of listed companies reached to 519 companies. Hence, the performance of the overall Pakistan Stock Exchange is strong enough and is considered the best market within the entire Asian region. In January 2016, the Karachi stock exchange, Lahore Stock exchange and Islamabad stock exchange were merged and integrated as PSX. This integration has resulted in enhancement of capital market efficiency and supported the overall growth and also resulted in increase in liquidity and acted as a catalyst for increased saving and investment channeling.

LITERATURE REVIEW

According to (Cummins, Deeney, Dowling, & Smeaton, 2016) the operations of a stock market merely depends on the actions of its investors. However, (Bird, Choi, & Yeung, 2014) criticized that the investors take investment decisions on the basis of the performance of different companies, playing in the stock market. In this area, investors' sentiment is highly important so as to recognize the rising trends of the stock market. Investors determine the future trend of the stock market on the basis of the past trends and keep in view the other factors as well. Hence, during the times of heavy fluctuation in the stock index, investors' sentiment played a key role.

Cummins et al., (2016) defined market sentiment as the common prevailing approach of investors with respect to the expected development or fluctuation in a market. On the other hand, (Bird et al., 2014) also referred market sentiment as the investor attention, occurred due to suddenly increasing or decreasing trends of the market. However, (Yang, Goh, & Chiyachantana, 2016) stated that such an attitude of the investors is the result of a range of factors, including history of the price, economic factors, seasonal factors, local and international factors. Hence, the fluctuation in the market decides the success or failure of the investors and leads to ultimately raise or decline the market.

Stock Index

(Lee & Ryu, 2014) defined stock index or stock market index as measuring the value of a portion of the stock market. In this sense, computation of a stock index made possible from the prices of stocks particularly selected for the purpose. Hence, such a computation is known as weighted average. (Da, Engelberg, & Gao, 2015) stated that stock index identifies the path to investors as in which portion of the stock market, investment should be made.

Importance of Investors' Sentiment

Cummins et al., (2016) stated that investors' sentiment helps in financial purposes. On one hand, Bird, Choi & Yeung, (2014) stated that stock market moves in opposite to the highest levels of strong and weak sentiments. In this sense, strong change in the market occurs due to the extreme level of strong sentiment. Hence, strong sentiment welcomes and influence many investors to make coercive investment in the market. As a result of it, a downturn of the market would ensure in the long run. Conversely, (Yang et al., 2016) discussed an opposite position of the market in which the market faced a high level of weak sentiment. Besides, Lee et al., (2014) stated that market sentiment indicators help to find the tops and bottoms of the market. It could do through using the extreme level of investor sentiment as an overall indicator of the market contrarian. Hence, investors' sentiment leads to drive the market trend, decide the expected level of investment in the market. In this way, the increasing or decreasing trend of the market identify the path of the stock market. It would then cause to boost up the market position at the national or local scale or at the global scale.

Measurement of Investors' Sentiment

(Ali, Jan, & Jehanzeb, 2015) stated that there are several ways to measure investors' sentiment during the time of heavy fluctuation in stock index. On one hand, (Ozsoylev, Walden, Yavuz, & Bildik, 2014) focused on the survey strategy to identify the expected Return on Investment (RoI) gained by the investors. In this way, for instance, at the international level, there are several groups involved in conducting such survey to identify the future market trends, and percentage of short and fall of the market, such as CFA Institute, Barron's Readings of Investor Sentiment, or Franklin Templeton Global Investor Sentiment Survey. During the time of quick fluctuation in stock index, the survey is conducted usually on weekly basis. Through few simple questions in the survey, the expected direction of the market could easily be determined and help other investors. However, in the light of behavioral finance, Cummins et al., (2016) developed alternative models to better explain heavy fluctuation in stock index or stock prices. In this area, in association with (Bird et al.,

2014), it constructed a sentiment, identified twelve measures and test while kept in front the stock returns. In this area, (Yang et al., 2016) stated that the different levels of sentiment and the consequent changes have a direct relationship with concurrent market returns. However, Lee et al., (2014) criticized that the prediction about sentiment could not identify near-term stock returns of future. It is, therefore, investors' sentiment has to be looked closely, through survey or any alternative method, so as to best analyze the market in future.

According to (Da et al., 2015) in order to determine investors' sentiment during heavy fluctuation in stock index, it needs to determine the size of the stock market, its past trend of profitability (at least of five years), volatility of the market, and NYSE turnover. More than that, Cummins et al., (2016) stated that in order to recognize investors' sentiment, it needs to determine the average first-day return of IPOs as well as other measures to forecast stock portfolio returns. However, (Bird et al., 2014) examined several companies that are out of the reach of investors' sentiment. It particularly includes the companies that are newly developed, moved towards the growing age, and faced severe volatile situations or financial backups. Overall, it is difficult to determine investors' sentiment for the firms that used to not pay dividends, having low capitalization and generate low profitability. Hence, for all such companies, the 'Top-down' approach could use to improve the forecasting, and it can determine not only economic bubbles but the daily trends of stock prices as well. Consequently, such an index can predict different portfolios returns at the start of the year.

The Psychological - Overconfidence Theory

(Da et al., 2015) proposed The Psychological Overconfidence Theory, whereby the assumption is that investors tend to rely heavily on private information and used to ignore public information. The difference of public and private information has impacts on the stock market and bring fluctuation in the stock index. (Mian & Sankaraguruswamy, 2012) examined the impact of public and private information on investors' sentiment as it may bring shock in the trading volume. Schneider, (2014) stated that rely of the investors on the private information may bring equal-weighted stock prices. Hence, it could say that private information may bring over reaction in the stock prices and public information may cause under react of the prices. On the other hand, (Baker, Wurgler, & Yuan, 2012) stated that private information bring much earlier impact on stock index. In this way, such a market condition gives a blooming opportunity to the overconfident investors to trade more aggressively so as to gain as much as possible. Consequently, such investors who are confident about their investment made the ultimate high return gain through the market; yet, yield significantly less than the market average.

MATERIALS & METHODS

For this research study, the main source for collection of data is secondary resources. The information is gathered from different websites for related predictors such as Pakistan stock exchange and State bank of Pakistan. The sample size is based on 5 year period from 2013 to 2016. The sentiment indexes selected for this research are Total Market Capitalization, Total Listed Capital - Rs., KSE-100" Index, KSE-30" Index, KMI-30 Index, PSX-KMI All Shares Index, New Companies Listed during the year, Listed Capital of New Companies - Rs., New Debt Instruments

Listed during the year, Listed Capital of New Debt Instruments - Rs., Average Daily Turnover - Shares in million, Average value of daily turnover - Rs And Average Daily Turnover (Future)¹. These indicators are examined to analyze the investor sentiments in past five years. The indicators are analyzed by application of statistical test of correlation applied on SPSS software as well as graphical analysis.

Hypothesis Statement

H1: Total Listed Capital has significant relationship with total market capitalization in past five years

H2: KSE-100" Index Total Listed Capital has significant relationship with total market capitalization in past five years

H3: KSE-30" Index Total Listed Capital has significant relationship with total market capitalization in past five years

H4: KMI-30 Index Total Listed Capital has significant relationship with total market capitalization in past five years

H5: PSX-KMI All Shares Index Total Listed Capital has significant relationship with total market capitalization in past five years

H6: New Companies Listed during the year Total Listed Capital has significant relationship with total market capitalization in past five years

H7: Listed Capital of New Companies - Rs Total Listed Capital has significant relationship with total market capitalization in past five years

H8: New Debt Instruments Listed during the year Total Listed Capital has significant relationship with total market capitalization in past five years

H9: Listed Capital of New Debt Instruments - Rs Total Listed Capital has significant relationship with total market capitalization in past five years

H10: Average Daily Turnover - Shares in million Total Listed Capital has significant relationship with total market capitalization in past five years

H11: Average value of daily turnover -Total Listed Capital has significant relationship with total market capitalization in past five years

H12: Average Daily Turnover (Future) Total Listed Capital has significant relationship with total market capitalization in past five years.

RESULTS

The performance of PSX can be measured by different indices of stock specifically KSE-100 with 1000 points base. The below graph indicates the Index point of KSE100 from 2012 to 2015. The KSE index was decline due to financial crises in 2008. However, market was recovered after 2009 and after 2012; a sharp upward trend is observed. It also breaks the overall level of index with greater volatility as compared to past years. Moreover, in 2015, all resistance levels were

significantly broken and reach top highest index level of 35,456. However, due to terrorism and political challenges, the Pakistan stock exchange is failed to preserve their level and period demonstrates a greater volatility.

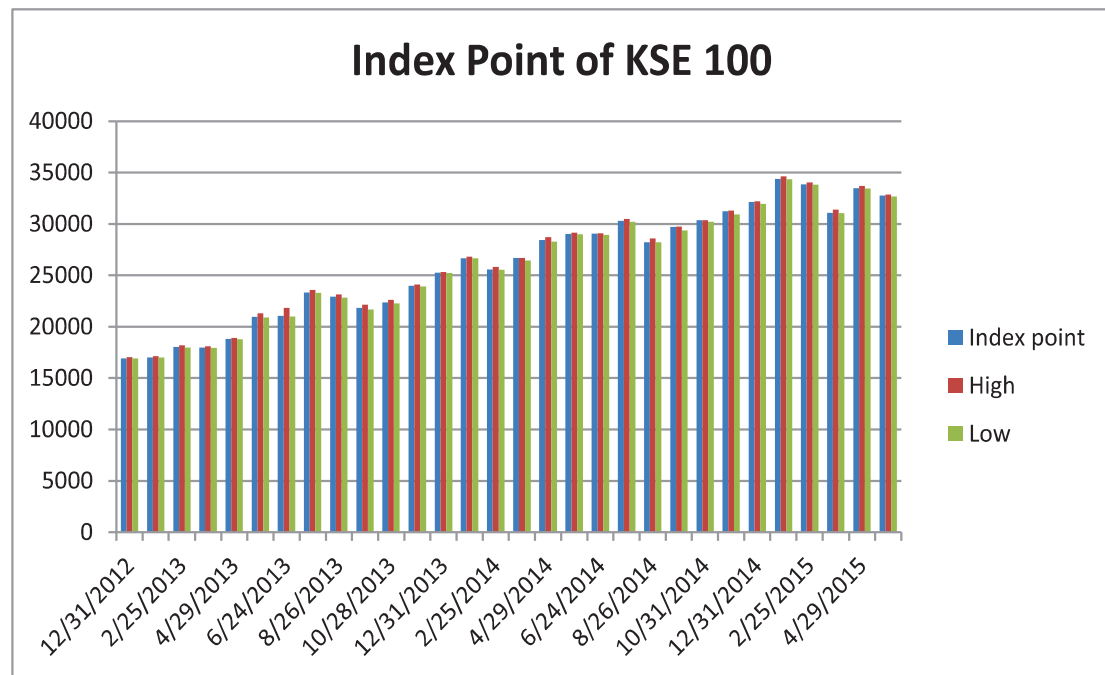


Figure 1: Index Point of KSE 100

The results indicate that sector growth is highly vulnerable to different trading activities and can be determined by the two important matrices average daily turnover and average daily traded value. The correlation results also confirmed by the fact that average daily turnover has improved after 2012 and during 2015 reaches up to 258.8million. On the other hand, the comparison of different index is also depicted in below chart that confirms that all indexes are following an increasing trend in past five years.

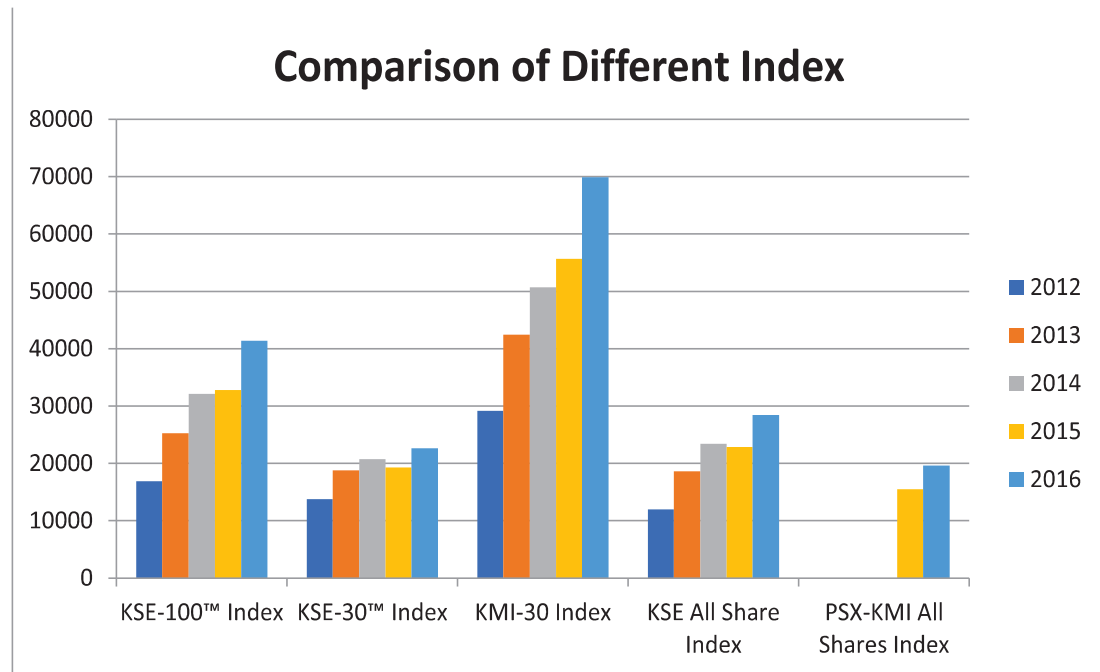


Figure 2: Comparison of Different Index

Correlation Analysis

The chief aim of correlation analysis is the identification of relationship as well as statistical significance between variables. The standard criterion for SPSS is that reject the null hypothesis if p value is less than 0.05. For this research project, market capitalization is selected as dependent variables and remaining predictors served as independent variables. The results of correlation test indicated that statistically significant variables are Total Listed Capital - Rs. KSE-100" Index, KSE-30" Index, KMI-30 Index, Average value of daily turnover - Rs. As well as Average Daily Turnover - Shares in million. Therefore, H1, H2, H3 H4, H10, H11 are accepted and found to have significant and positive effect on market capitalization as the indicators of investor sentiments. In addition, the strength of the association for all significant variables is found to be strong positive.

Table 2: Correlation Results

| Total Market Capitalization - Rs. | | |
|-----------------------------------|---------------------|-----------------|
| Correlation | Pearson Correlation | Sig. (2-tailed) |
| Total Listed Capital - Rs. | 0.945758276 | 0.015040721 |
| KSE-100" Index | 0.952990715 | 0.01214851 |
| KSE-30" Index | 0.994259806 | 0.000521614 |
| KMI-30 Index | 0.995218938 | 0.00039656 |
| PSX-KMI All Shares Index | 0.126252667 | 0.83967819 |

| | | |
|---|-------------|-------------|
| New Companies Listed during the year | 0.177398504 | 0.775319567 |
| Listed Capital of New Companies - Rs. | 0.676308783 | 0.210004909 |
| New Debt Instruments Listed during the year | 0.450989669 | 0.445889142 |
| Listed Capital of New Debt Instruments - Rs. | 0.773343861 | 0.12503713 |
| Average Daily Turnover - Shares in million | 0.892485914 | 0.04162949 |
| Average value of daily turnover - Rs. | 0.940168938 | 0.017409545 |
| Average Daily Turnover (Future) | 0.780042099 | 0.119665292 |

DISCUSSION

The market turnover of shares can reflect the investor sentiments as it reflects the market liquidity. The irrational investors are keener to add high liquidity in market if they have positive and optimistic attitude towards the market performance in future. In other words, it can be said that in case of high investor sentiments then irrational investors are more prone to trade that raises the liquidity of market and leads to induction of over valuation. At present time the index comprises of top 100 companies through market capitalization. The index components are weighted according to total market value and moves in alignment with the stock price movement and it is believed that stock with market capitalization that is greater free float would have a greater and profound effect on movement of index.

The above results indicated that performance of stock market of Pakistan is highly excellent that represent the 10% of total market capitalization of globe despite of lower trajectory growth and greater security and political risk. Nevertheless, the improvement in financial and political stability has resulted on revival of stock market of Pakistan. Moreover, government amnesty program is highly supportive for investors for pouring money in shares and leads to doubling of KSE average traded volume. The above results also confirmed that investors of Pakistan have positive outlook to invest in the Pakistan Stock exchange therefore it has demonstrated a positive and optimistic sentiments. However, it can also be inferred that in long term inflation and sentiments has significant impact on investor decision making.

CONCLUSIONS

The above analysis concludes that uncertainty is identified as a vital and positive factor in context of Pakistan that implies that greater returns are related with the high uncertainty of stocks. The trading volume of stock exchange entails the sentiment of investor about the specific stock that depicts the refrain, psychology and investors feeling. A positive and significant trading volume portrays that stocks that are highly traded turned out to be overvalued and lead to yielding of greater return. In essence, the current study verified the theory of noise trading in stock market of Pakistan. Based on aforementioned outcomes, it is concluded that in general investors of Pakistan possess optimistic outlook for investment in stock exchange, therefore depicts a positive sentiment. The fluctuation of sentiments is observed due to varied economic situation of country. The high inflation rate of Pakistan might have a negative influence on returns of stock exchange and still Pakistan stock exchange can thrive in this situation. This positive investor attitude in Pakistan reveals the importance of sentiment factors for the investment potential of country. It is concluded from the discussion above that market sentiment is the common prevailing approach of investors with respect to the expected fluctuation in a market. Stock index is about measuring the value of a portion of the stock market. Investors' sentiment helps in several financial purposes such as market sentiment indicators help to find the tops and bottoms of the market. In order to measure investors' sentiment during the time of heavy fluctuation in stock index, the survey strategy could use to identify the expected Return on Investment (ROI) gained by the investors. Hence, the Psychological Overconfidence Theory assumed that investors tend to rely heavily on private information and used to ignore public information. The outcomes also signify that in sentiment in long term perspective might have important role with optimistic outlook. The mixes outcomes also confirm that sentiment is an essential factor for decision making of investors in Pakistan.

RECOMMENDATIONS

This research study is intended to explore the stock exchange market of Pakistan that is highly criticized for its uncertain and unpredictable behavior. In future export of Pakistan can exceed the import and can shift the balance of payment towards positive direction and can provide an interesting topic for research. The future author can examine the importance of uncertainty, fundamental and sentiments of investors through time period splitting. Moreover, the proxies' difference can also be used for the investigation of effect of sentiment of investors regarding the stock returns. The regional country analysis can also be executed for the comparison of variable effect in varied stock markets. In addition, the effect of international sentiments can also be compared with local sentiment index in Pakistan. The other important macro-economic variables are not evaluated in this study and that are required to explore further in future to investigate their effect on progress of stock market.

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