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Do Predictive Power of Fibonacci Retracements Help the Investor to Predict Future? A Study of Pakistan Stock Exchange

Rana Zafarullah Shaker*
M. Phil Scholar, School of Accounting and Finance, Faculty of Management Studies, University of Central Punjab, Lahore, Pakistan

Muzaffar Asad
Assistant Professor, School of Accounting and Finance, Faculty of Management Studies, University of Central Punjab, Lahore, Pakistan

Nabeeha Zulfiqar
M. Phil Scholar, School of Accounting and Finance, Faculty of Management Studies, University of Central Punjab, Lahore, Pakistan

Abstract

There are number of ways like Technical Analysis, Fundamental Analysis and The Efficient Market Hypothesis that helps to know the behaviour of investor which helps to predict future. In this study author used Fibonacci numbers/series analysis which consider for forecasting future stock prices trends. For the purpose of this study four listed companies are selected at random by convenience sampling from Cement Sector for the period of 1st quarter of 2017. Closing prices of open days of market are taken from Karachi Stocks and graphs are made. This study concluded that in four companies of cement sector, there were total 63 support levels out of which 17 (27%) and total 66 resistance level from which 24 (36%) were followed Fibonacci retracements. So the study findings accept the hypothesis that the trend reversals in Cement sector listed in PSX follow Fibonacci retracements to some extent. Analysis of this study showed that there is at least one strong support and one strong resistance in every company and some small resistant and support levels.

Keywords: Fibonacci retracements; Support; Resistance; Technical analysis; Forecasting.

1. Introduction

Every investor wants to get more return on his investments and to get each and every opportunity by mean of which he can get more return on his stock. So while making investments in any stock, investors want to make some predictions regarding their investments by analysing the trends of a particular stock that it would be profitable for them to making investment in a particular stock in future or not?. For this purpose there are many ways to analysis the behaviour of investors like Technical Analysis, Fundamental Analysis and The Efficient Market Hypothesis through which future predictions can be made while investing in any stock (Malkiel, 2005; Otake and Fallou, 2013)

Technical analysis indicates the previous stock price values by using the charts, graphs which shows to different trends and investors behaviour about the price fluctuations of financial instruments. In the period of 1981-1995, the stock prices strong and weak return indications were analysed by the mean of technical analysis generic programming to provide information regarding six exchange rates trends to investor for their future investments (Neely and Weller, 2003).

The one of another most common method about the stock price trends is Fundamental analysis which is a security that has been estimated by someone to acquire the dimension of the intrinsic value as well as by the analysis of several economic, quantitative and qualitative elements (Abarbenell and Bushee, 1997). In most of the situations, the macroeconomics elements generally reflect by the fundamental analysis. The some of the macroeconomic factors namely; economic, growth, consumer spending, industry conditions and inflation rates are being used as a mean of future stock price predicting in the stock market (McCurdy, 1998). So, the target of the fundamental analysis is come to know about the investment security either it is undervalued or overvalued and helps to the investor for making best suitable future investments safe for them (Griege, 1992).

The Fibonacci numbers is another significant analysis which also consider for forecasting future stock prices trends and the order of these numbers can be found by the mathematical formula such as f (n) = f (n- 1) +f (n-2) and numbers are 0,1,1,2,3,5,8,13,21,34,…..In this the following number can be calculated by adding the last two preceding numbers. These numbers(0,1,1,2,3,5,8,13,21,34,…..) are effectively calculated and provide direction about the stock price future variation. The Fibonacci numbers explain the golden ratio in this analysis that is the totality of the two number to the higher number as almost 1.61803 and shows as a ratio of two succeeding figures. The Fibonacci analysis procedure is useful for the estimation of support and resistance existence through the past trends of stock price. In this technique, the key highest and lower levels of stocks are known. So, it is charted by dividing the vertical distance into 23.6%, 38.2%, 50%, 61.8%and 100% (Kumar, 2014).

This is about to describe how the Fibonacci retracement is practiced to forecast the future. The analysis of fibonacci retracement is related to the study of identifying possible support and resistance points in the upcoming years that established on preceding price movements and reversals. The fibonacci retracements stages are likely

*Corresponding Author

supports and resistances. The price area below the current market where you will look for the possible stop of further drop is called support and resistance is a price area above the current market where you will look for the possible stop of further increment. Support and resistant level indication are more preferable by using the graphs and charts in stock and as well as in money market (Baroden, 2008). The support and resistance points relate with topmost and falling in depth (Kavajecz and White, 2004).

In past several studies were conducted to predict future for investors by using the technical analysis (Patel *et al.*, 2015; Zuo and Kita, 2012), log normal distribution (Kempen and Paape, 2016) and Fibonacci retracement (Ozturk *et al.*, 2016). Thus, the objective of this study is to observe upward and downward trends of stock prices by using the Fibonacci retracements analysis in Pakistani stock exchange so that an investor can know how to make his investment more profitable and to minimize risk for future investment. In Pakistan, there are three stock exchanges like Karachi Stock Exchange (KSE), Lahore Stock Exchange (LSE) and Islamabad Stock Exchange (ISE). All these stock exchanges are working under the umbrella of Pakistan Stock Exchange (PSX). However, for the mean of this study, four listed companies are selected at random from sector of cement. These companies are Attock Cement Pakistan Ltd, Lucky Cement Ltd, Maple Leaf Cement Factory Ltd and Pioneer Cement Ltd.

2. Literature Review

The objective of this study is to determine Fibonacci retracements in Pakistani stock market so that an investor can know how to make his investment more profitable. Therefore, a comprehensive literature has been conducted in order to determine Fibonacci retracements and technical analysis in Pakistani stock market.

The technical analysis was used to predict the future stock values by collected the historical data of stock values from exchange market and developed charts and graphs and trends of these values foreseeing future stock values result for investment purpose (Patel *et al.*, 2015; Zuo and Kita, 2012). Another past study has been conducted to predict the future indices price values of Indian stock market. The result of the study showed that the suitable time series (1,0,1) model has proved efficiently in the forecasting the future stock indices values of Indian stock market investment for the investors (Banerjee, 2014).

The measurable specialized indicators used to foresee the value varieties. A portion of the proposed strategies utilized delicate registering procedures as an estimating framework. It displayed that another specialized indicator in view of fluffy justification (Escobar *et al.*, 2013). The log normal distributed technical market trend studied by taking the sample data of technical trends. The study findings concluded that the log normal assumption more suitable as compare to the daily returns of stock prices for the future stock prediction and as well as taken anti cycling trading as an example in the study (Kempen and Paape, 2016).

A study used Fibonacci retracement to show that how this method could be proved more beneficial in the prediction of forex market by using the Fibonacci arcs, fan, expansion channel these represented the Fibonacci retracements and made accurate charts plotting (Gaucan, 2011). Another study concluded that Fibonacci ratios are more useful and had the best performance out of three techniques namely pivot points, moving averages and Fibonacci number (Loginov *et al.*, 2015). Fibonacci with the goal that when the swapping scale approaches the level of a portion of the instruments made by the Fibonacci succession, a difference in pattern can be normal and it can be a boost to exchange execution (Ozturk *et al.*, 2016).

Foreign exchange traders mostly use charts, graphs and indicators for their help with anyone of the most commonly used indicators like Fibonacci retracements, supports and resistances, moving averages and moving average convergence / divergence (Johansson and Nafar, 2017). Forecasting the profit of fiscal product is consider very uncertain job which based on subjectivity and expert's knowledge. It is confessed by the financial experts that the backtracking of support and resistance is needed when the estimation of support and resistance flop (Kumar, 2014).

Once Fibonacci retracements levels are established, the professional trader will use other techniques to confirm their predictions before taking a position. Therefore, the use of the Fibonacci sequence is based upon the idea that the market behaviour must be based upon its behaviour in the past. Thus, the objective of this study is to determine Fibonacci retracement in Pakistani stock market so that an investor can know how to make his investment more profitable.

3. Methodology

In this study four listed firms are selected at random by convenience sampling from Cement Sector for the period of 1st quarter of 2017. These firms are Attock Cement Pakistan Ltd, Lucky Cement Ltd, Pioneer Cement Ltd and Maple Leaf Cement Factory Ltd. For the purpose of Fibonacci retracements closing prices of open days of market are taken from Karachi Stocks and graphs are made. On x-axis days and on y-axis percentage from 0% to 100% is taken. Percentage lines are drawn as per following method;

- 61.8%, this relation generates by dividing a number in Fibonacci sequence by the number instantly following it in the sequence (55 / 89 = 61.8%).
- 38.2%, this relation generates by dividing a number in the Fibonacci sequence by the second number following it in the sequence (34 / 89 = 38.2%).
- 23.6%, this relation generates by dividing a number in the Fibonacci sequence by the third number following it in the sequence (21 / 89 = 23.6%).

Three other levels can also be calculated in retracement study. Although the following relations are not measured by numbers within the Fibonacci sequence, that are built on the Fibonacci number's relation above:

- 50%, this relation is estimated by getting the middle between 61.8 % and 38.2% (61.8 % + 38.2%)/2 = 50%
- 76.4%, this relation is estimated by getting the distance between from 38.2% and 23.6% (38.2% - 23.6%) = 14.6% and adding it to 61.8%
- 100%, this relation / level is estimated simply by finding where the pervious trend began.

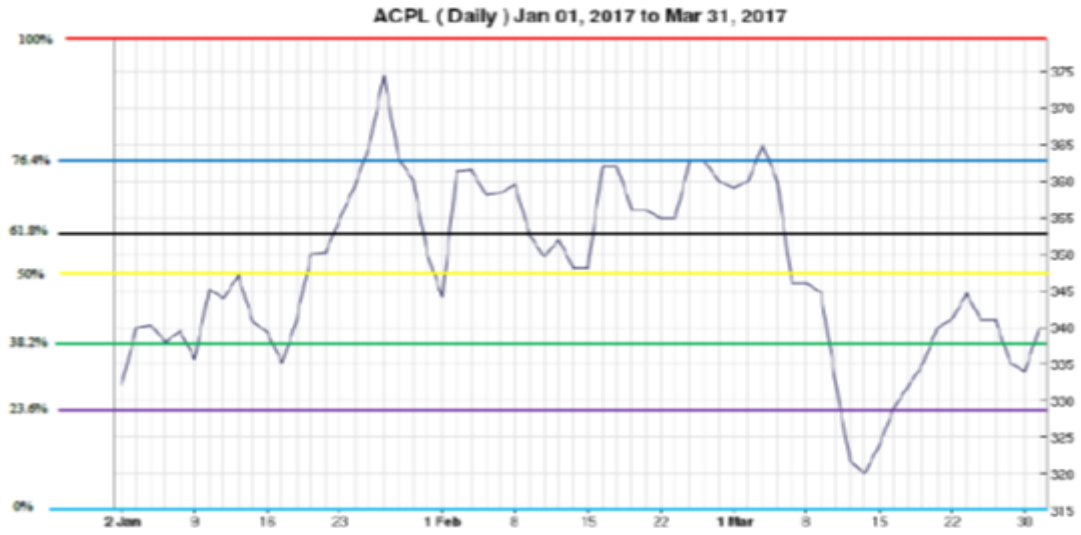
Determining these above Fibonacci retracement relations provides to investor with potential support and resistance that investor can use in his stock.

3.1. Research Hypothesis

H_1 = Trend reversals in PSX follow Fibonacci retracements.

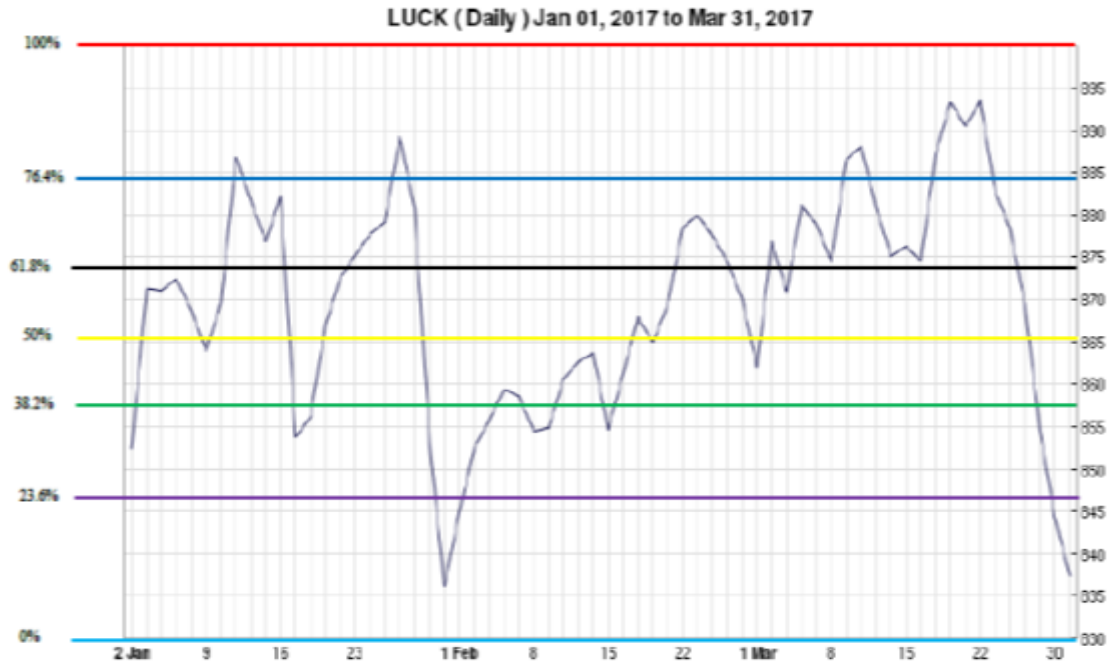
3.2. Analysis

Figure-1. Attock Cement Pakistan Ltd



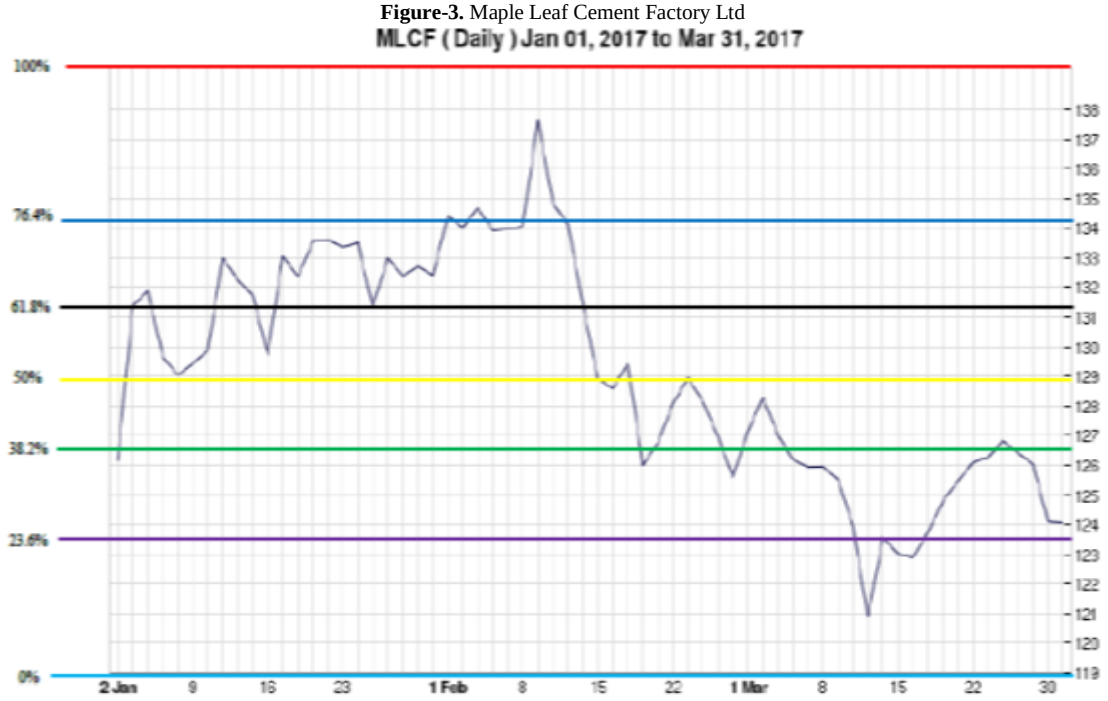
In figure 1, there are total eleven support levels and out of which only two followed Fibonacci retracement which is 18%. Total sixteen resistance levels are in ACPL from which six are followed which is 37% of total. There is a strong and clear resistance on Rs.364 which resists to increase price for four times and a clear support on Rs348 which gave a clear support to price once. Price on 2nd January was about Rs.331 and at that time a resistance was on Rs.338 which was broken on 3rd January and for next three days Rs.338 became support but that was broken on 9th January. After that price was gradually gone up and reached to about Rs.374.5 while breaking two resistances on Rs.354 and Rs.364. Then there were much fluctuations in price for couple of weeks and a strong and clear resistance was shown at about Rs.364.

Figure-2. Lucky Cement Ltd



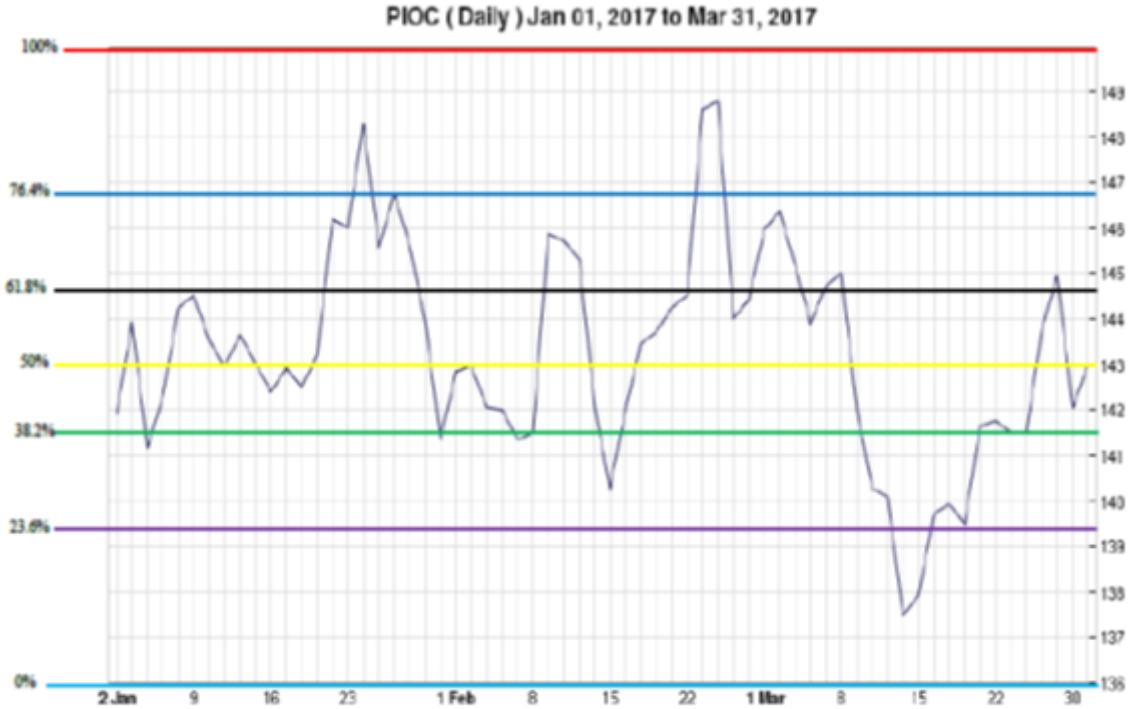
In figure 2, there are total twenty support levels and out of which five followed Fibonacci retracement which is 25%. Total twenty resistance levels are in LUCK from which four are followed which is 19% of total. There is a clear support on Rs.874 from which 3 time price tried to go down but could not and another support on Rs865 which strike 2 times but not any strong resistance level. Stock price on 2nd January was about Rs.853 and it went up on coming days but a medium resistance was shown at Rs.874 from which price remained below till 9th January but after that there was a breakout and prince gone up to Rs.886 in just 2 working days. In figure 2, then it flowed upward.

Figure-3. Maple Leaf Cement Factory Ltd



In figure 3, there are total twelve support levels and out of which only three followed Fibonacci retracement which is 25%. Total thirteen resistance levels are in MLCF from which seven are followed which is 54% of total. There is a clear support on Rs129 and another on Rs131 and a strong resistance level on Rs129 which stop price to go further up for 2 times. On 2nd January price was about Rs126.5 and in flowed upward in next coming days and reached about to Rs.132 but then there was clear support Rs.131.5 and resistance Rs.134.5 for couple of weeks. Then price fluctuated for next days but no clear support or resistance was shown till 31st March.

Figure-4. Pioneer Cement Ltd



In figure 4, there are total twenty support levels and out of which seven followed Fibonacci retracement which is 35%. Total sixteen resistance levels are in PIOC from which seven are followed which is 44% of total. A strong and clear support price was on Rs141.5 which support price to go further down for three times on different days and one clear resistance level on about Rs.143 and Rs.147 which stop price to go up for two to three times. On starting days there was clear support on Rs.141.5 and resistance on Rs145 which stop price till 19th January but then there was a breakout and price went up but in next coming days when price flowed down then again Rs.141.5 was a strong support which was touched for two times. In figure 4, there was a strong support of about Rs.141.5 and a strong resistance about Rs.144.5 till end of March.

4. Conclusion

The results of above figures show that in ACPL, there are total eleven supports and sixteen resistances levels out which two (18%) and six (37%) are followed respectively. In LUCK, there are total twenty support levels and out of which five followed Fibonacci retracement which is 25% and total twenty resistance levels from which four are followed which is 19% of total. In MLCF, there are total twelve support levels out of which only three followed Fibonacci retracement which is 25% and total thirteen resistance levels from which seven are followed which is 54% of total. In PIOC, there are total twenty support levels and out of which seven (35%) followed Fibonacci retracement and total sixteen resistance levels from which seven are followed which is 44% of total.

From the above data analysis, it is concluded that in above four companies of cement sector there were total 63 support levels out of which 17 (27%) and total 66 resistance level from which 24 (36%) were followed Fibonacci retracements. In every figure, there is at least one strong support and one strong resistance and some small supports and resistances which means that investor can predict future prices to some extent. So the study findings accept the hypothesis that the trend reversals in Cement sector listed in PSX follow Fibonacci retracements to some extent**.** By using Fibonacci retracements (support and resistance levels) investor can make his good investment decisions by selling on resistance and buying on support or holding for some period on the basis of prediction of support and resistance levels.

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