

ELLIOT WAVE AND THE EFFECTIVENESS OF ELLIOT WAVE FOR THE DSE INDICES

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Abstract

To invest in the market safely and profitably, the investors need to predict the market trend. With the help of past data they do technical analysis to forecast the future trend. For predicting the market, different tools have been evolved. Elliott's Wave, introduced by Ralph Nelson Elliott (1871-1948), is one of those, which is the cyclical quantification of investor psychology to predict the market swings. The wave principle assumes a liquid market and it reflects the psychological pattern of the participants. The wave pattern consists of five impulse and three corrective waves. In this paper we have tried to find out the effectiveness of the "Elliott Wave Principle" on the Dhaka Stock Exchange Indices.

Key words: Wave Principle, Technical analysis, Channeling technique, Time frame analysis

INTRODUCTION

Market investors and other related parties are required to predict the market for their survival and profit making. Predicting the trends of the market with the help of the past data is the primary issue of technical analysis (Pandian, 2001). Thus; different predicting tools have been evolved. No need to mention that when investors can predict the trend, they can make better investment decisions.

Elliott did his work mostly on the major market indices. In 1935, he published the book "The Wave Principle". His work identified the wave structure in the market as well as the power of it in analyzing market. Elliott theorized the wave that the waves were a collective expression of investor sentiment (The Basics of Elliott Wave Analysis, nd). Later, Robert Prechter and A. J. Frost did remarkable work on the wave principle and their book "The Elliott Wave Principle" (1987) is considered as the Bible in this part of the world. After the discovery of Elliott wave many works have been done to indicate its different issues. In this section the researcher would like to share some.

Many researchers tried to define Elliott wave in their terms. Most expressed about the group psychological behavior of man. Swannellin (2003) described the wave principle as a detailed description of how groups of people behave. However the wave is hard to shape and count as well. Like many things Elliott Wave theory can be simple or complex, it's up to you. The basic premise is that high volume, free markets (no Government intervention over the long haul) are subject to the individual investors' hopes (greed) and fears en masse. These emotional capitulations are reflected graphically at any point of any day by price. Portraying these swings in chart form provides a picture of the current market psychology. The acceptability of the theory is still acknowledged in the world financial market. There are no guarantees in the stock market, and stocks could certainly continue their decline without stopping, but the Wave Principle, so far, has been helpful in classifying the larger

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price structure and it may be worth heeding its signals at the moment, or at least be aware of what the principle might be signaling at the moment in the event that Mr. Elliott was correct in his observations, which appear to be still valid even in today's markets. (Elliott Wave: Where are We in the Wave Structure?, 2009). The Apple Inc (AAPL) offers the opportunity to observe the wave structure on its weekly chart from 2005 (Elliott Wave: Where are We in the Wave Structure?, 2009).

There are relationships between the Fibonacci and Elliott wave structures. The works also show these relationships. At every degree of stock market activity, a bull market subdivides into five waves and a bear market subdivides into three waves, giving us the 5-3 relationship that is the mathematical basis of the Elliott Wave Principle (The Elliott Wave Principle, nd).

To predict the market or next wave, there are some useful techniques present along with the wave structure. They are – Fibonacci ratios, time considerations and channeling.

The Fibonacci numbers or ratios are also key element for the prediction. "Occasionally, numbers in the Fibonacci sequence that coincide with dates for previous key market reversals can help in forecasting future ones" (The Basics of Elliott Wave Analysis, nd).

The Fibonacci ratios are handy tool to project the waves. Rinehart (2004) in his work showed the relationship of Fibonacci and Elliott wave.

Channeling is also a known technique to focus on the target of the next wave. Channels are parallel lines, which more or less contain the complete price movement of a wave. Analysts should draw them in advance to assist in determining wave targets and to provide clues to the future development of trends (Basic Tenets of the Elliott Wave Principle, nd).

The time consideration is another technique to predict the market. It is also related with Fibonacci sequences. The time consideration asserts that the wave which is to predict, will take the same time as the Fibonacci ratios suggest. For example if we take wave 5 on account we will see that it should take same time as wave 1 or related Fibonacci ratio (Basic Tenets of the Elliott Wave Principle, nd).

These all techniques and wave counts help the investors a lot. Most important to investors is that the wave principle often indicates in advance the relative magnitude of the next period of market progress or regress. However, the success depends greatly on identifying of the waves correctly. Living in harmony with those trends can make difference between success and failure in financial affairs. (Basic Tenets of the Elliott Wave Principle, nd). Robin Wilkin, Global Head of FX and Commodity Technical Strategy at JP Morgan Chase, says "the Elliott Wave principle... provides a probability framework as to when to enter a particular market and where to get out, whether for a profit or a loss" (Wilkin, R. nd.)

However, it is worth mentioning that the wave principle assumes a liquid market and it reflects the psychological pattern of the participants. The wave pattern consists of five impulse and three corrective waves. However, some arguments against this principle are also present (Elliott Wave Theory, nd). Thus the researcher wishes to find out the effectiveness of the "Elliott Wave Principle" on the Dhaka Stock Exchange Indices. To obtain the broad objective the following specific objectives are attained:

- To find out the Fibonacci ratios of the waves;
- To find out the time frame analysis;
- To find out the channels in the graph.

Materials and Methods

Research Type

The research is an exploratory research because it tried to explore the Elliott wave's effectiveness in DSE indices (Malhotra, 2008), (Zikmund, 2003).

Sampling Design and Size

The researcher is interested to look into all the DSE indices. However, the DSE all-share price index was excluded from the study because of the discontinuation of the data. Thus this research looked for Elliott wave in the indices of DSE-20, DSE General Index, DSE Month Ended General Index, and DSE Month Ended All Share Price Index.

Data Source

The main sources of data are the secondary sources like articles published in the World Wide Web, books, and different publications regarding the research topic. No primary data was used. The index data are collected from the DSE.

Data Analysis

Data were analyzed producing graphs of the indices through MS Excel (2007). After producing the graph the waves were labelled according to the wave rules of Elliott wave. Details of the rules and other issues are provided in the appendix part.

Measurement of Effectiveness

- The wave structure obtained was evaluated for the accuracy of the prediction of the trends.
- The Fibonacci ratios, Channels and Time Frame for the waves gave an instruction to get the picture of effectiveness.

Fibonacci is a proven approach for measure price movement relationships. For Elliott Wave theorists, it means Fibonacci numbers are tools to help guide us in our interpretation where we think price movements will go, based on human 'fear and greed' actions, reactions, or over-reactions factors, (Rinehart, 2004). The most common Fibonacci ratios used in the stock markets are:

1 - 1.618 - 2.618 - 4.23 - 6.85 (multiples)

0.14 - 0.25 - 0.38 - 0.5 & 0.618 (ratios)

Targets for the waves are given below using the Fibonacci ratios.

Wave 3 =

either 1.62 x length of Wave 1

or 2.62 x the length of Wave 1

or 4.25 x the length of Wave 1 (Rinehart, 2004)

Wave 4

Wave 4 is related to Wave 3.

Wave 4 is related to Wave 3 by the following standard ratios:

Wave 4 = either

24% of Wave 3, or

38% of Wave 3, or

50% of Wave 3, or

62% of Wave 3 (Rinehart, 2004)

Wave 5

Relationship #1- If Wave 3 is greater than 1.62, or extended, Wave 5 ratios are as follows:

Wave 5 either

= Wave 1, or

= 1.62 x Wave 1, or

= 2.62 x Wave 1 (Rinehart, 2004)

Relationship #2-- If Wave 3 is less than 1.62, Wave 5 ratios are as follows:

When Wave 3 is less than 1.62, Wave 5 will often overextend. The ratio of Wave 5 will be based on the entire length from the beginning of Wave 1 to the top of Wave 3.

Extended Wave 5 = either 0.62 x length beginning of Wave 1 to top of Wave 3) or

= length of beginning of Wave 1 to top of Wave 3) or

= 1.62 x length of beginning of Wave 1 to top of Wave 3) (Rinehart, 2004)

Channeling Technique

The channeling technique is a useful tool to predict the minimum target. The channel is the parallel line identifying the targets of the waves. To draw a target for a specific wave, one has to connect the start point of the previous wave with the start point of the previous wave of that previous wave. Then, a parallel line through the end point of the previous wave. For example target for wave 5 can be drawn like this—

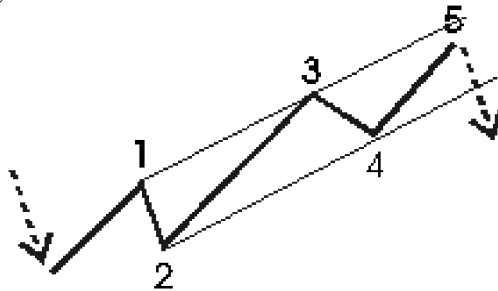


Figure 1: Channeling Technique

* Source: Channeling, (nd.)

Time Frame Analysis

The time consideration asserts that the wave which is to predict it will take the same time as the Fibonacci ratios suggest. For example if we take wave 5 on account we will see that it should take same time as wave 1 or related Fibonacci ratio (Basic Tenets of the Elliott Wave Principle, nd).

Elliott Wave: A Brief Introduction

Creeds of Elliott Wave

“The Elliott Wave shows that mass psychology swings from pessimism to optimism, and back again, in a natural sequence, creating specific measurable patterns” (Swannell, R., 2003). The basic tenets of the Elliott wave are given below.

The Five Wave:

In markets the price movements ultimately takes the form of five waves of a specific structure. Three are labeled as 1, 3 and 5, actually effect the directional movement. These waves are separated by two countertrend interruptions, which are labeled 2 and 4. The two interruptions are apparently a requisite for overall directional movement to occur (Basic Tenets of the Elliott Wave Principle, nd).

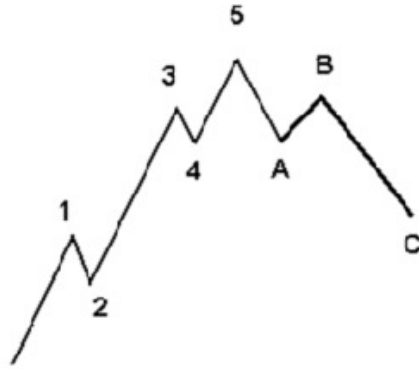


Figure 2: Basic Elliott Wave Pattern

Wave Mode: Two modes are—

- a. Impulse (can be both directional and interruptions)
- b. Corrective (only can be interruptions)

Wave Degree:

1. Grand super cycle: multi-century
2. Super cycle: multi-decade (about 40-70 years)
3. Cycle: one year to several years (or even several decades under an Elliott Extension)
4. Primary: a few months to a couple of years
5. Intermediate: weeks to months
6. Minor: weeks
7. Minute: days
8. Minuette: hours
9. Subminuette: minutes

Every Elliott Wave pattern is, in itself, the building block of a larger Elliott pattern, also known as the “next larger degree” (Swannell, R., 2003).

Results and Discussion

This section will delineate the formation and characteristics of the Elliott wave in the Dhaka Stock Exchange Indices. First, the researcher would like to give the delineation of DSE-20 index and the others will follow.

DSE-20 Index

The following depiction delineates the Elliott wave formation for the DSE-20 index for the time period of seven years and nine months started from January, 2001 and end at October, 2008.

The researcher found the basic characteristics of the DSE-20 index—

- Δ There are two bull and two bear trends here.
- Δ A **Cycle** is building in the market; first three waves (I, II and III) took form.
- Δ Four **Primary** waves representing the bulls and bears- are present.
- Δ Corrective pattern is difficult to identify.
- Δ Changes in the trends are sharp.
- Δ The truncation is present in here. That means, market gains new strength or weakness

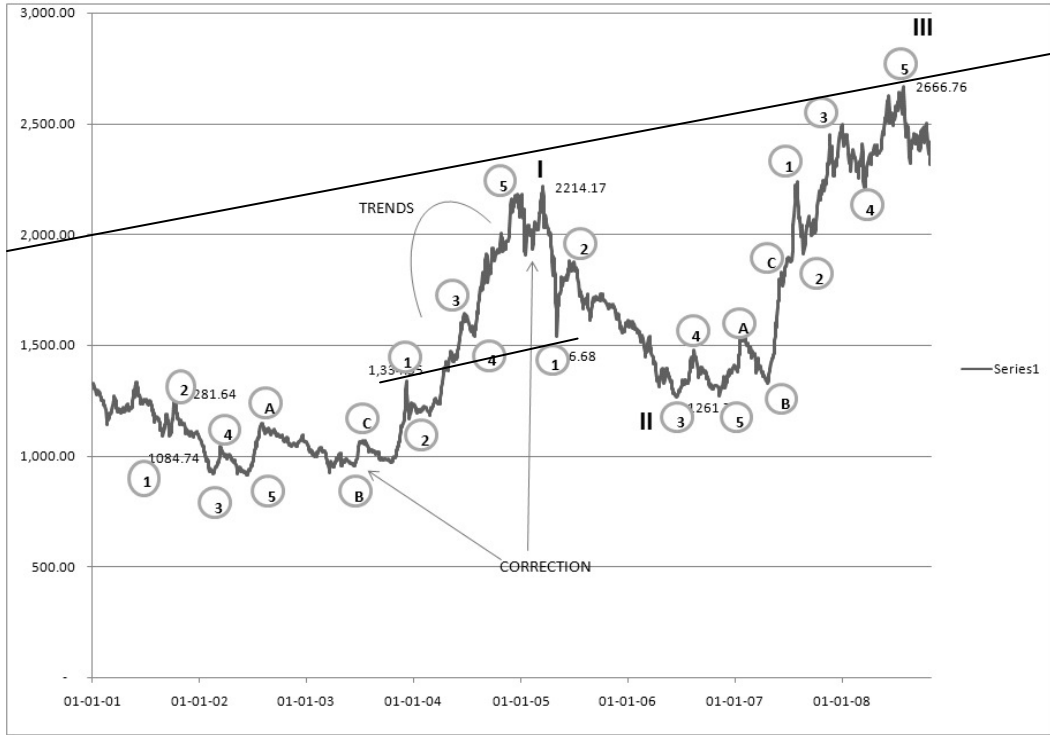


Figure 3: Elliott Wave in DSE-20

**Source: Authors' Calculation based on secondary data*

The other analyses of the waves revealed other essential characteristics.

Fibonacci Ratios

Detail methodology of calculating Fibonacci ratios of the waves in DSE-20 index are given in the appendix section. In this section the researcher would like to give a brief overview of the ratio analysis.

Table 1. DSE-20 Index-Fib. Ratio and Time Frame

	Wave No	Ratio	Days taken for Formation
Cycle	Wave 1		1009
	Wave 2	0.73	457
	Wave 3	1.08	773
Primary1 (Bear)	Wave 1		90
	Wave 2	0.80	39
	Wave 3	1.50	250
	Wave 4	0.35	49
	Wave 5	0.32	232
Primary2 (Bull)	Wave 1		53
	Wave 2	0.46	9
	Wave 3	1.30	187

	Wave 4	0.22	36
	Wave 5	0.95	146
Primary3 (Bear)	Wave 1		48
	Wave 2	0.50	43
	Wave 3	0.91	366
	Wave 4	0.34	224
	Wave 5	0.22	87
Primary4 (Bull)	Wave 1		56
	Wave 2	0.71	20
	Wave 3	1.27	135
	Wave 4	0.48	76
	Wave 5	0.63	132

Source: Authors' Calculation based on secondary data

When this result is checked with the Fibonacci ratio table, it is found that there is no exact match. However, there are close matches. This indicates, the Fibonacci ratios are not working as a perfect match to predict the market. Another important aspect is that, the entire fifth wave is shorter than the first wave. The entire third waves (except one of primary 3) are longer than the first wave but shorter than the predicted level by the Fibonacci ratio. The channel analysis of the Cycle found that it predicted the third wave not exactly as it is. But it predicted the minimum level. The third wave exceeded the minimum target for it.

The Prediction

Considering the graph of DSE-20 index it is understandable that the market has entered into a corrective phase. A and B wave has formed, C is on the way of formation. The targets of C are equal to length of wave A or $1.62 * A$ or $2.62 * A$. so, the target becomes, 2846.65 or 3061.23 or 3407.32.

DSE General Index

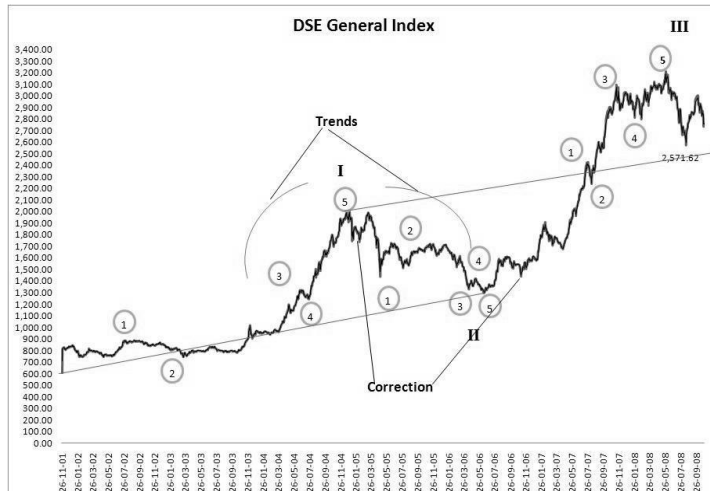


Figure 4: Elliott Wave in DSE General Index

Source: Authors' Calculation based on secondary data

The researcher found the basic characteristics of the DSE General Index waves—

- Δ Two bulls and one bear trends are present here and formed three primary waves.
- Δ Three waves of the Cycle are formed so far.
- Δ Corrective waves are not as difficult to identify clearly as in the DSE-20 index.
- Δ The first primary wave took the most time to form. Then, the time to form the waves gradually decreased.

Now let us check the Fibonacci ratios and time frame of this index.

Table 2: DSE General Index-Fib. Ratio and Time Frame

	Wave No	Ratio	Days taken for Formation
Cycle	Wave 1		1132
	Wave 2	0.51	530
	Wave 3	1.37	717
Primary1 (Bull)	Wave 1		283
	Wave 2	0.51	194
	Wave 3	2.06	466
	Wave 4	0.14	29
	Wave 5	2.71	160
Primary2 (Bear)	Wave 1		47
	Wave 2	0.53	43
	Wave 3	0.72	306
	Wave 4	0.19	10
	Wave 5	0.16	50
Primary3 (Bull)	Wave 1		99
	Wave 2	0.25	14
	Wave 3	1.14	98
	Wave 4	0.35	98
	Wave 5	0.29	97

Source: Authors' Calculation based on secondary data

When this result is checked with the Fibonacci ratio table, again it is found that there is no exact match. However, there are close matches. This indicates, the Fibonacci ratios are not working as a perfect match to predict the market. Another important aspect is that, the entire fifth wave (except the first one- it is an extension) is shorter than the first wave. All the third wave (except one of primary 2) are longer than the first wave but shorter than the predicted level by the Fibonacci ratio. The time frame analysis shows, wave 5 is almost equal to wave 1 in the last two wave formation. This conforms with the Elliott wave requirement. The channel analysis of the Cycle found that it predicted the third wave not exactly as it is. But it predicted the minimum level. The third wave exceeded far than the minimum target for it.

The Prediction

Considering the graph of DSE-20 index it is understandable that the market has entered into a corrective phase. A and B wave have formed, C is on the way of formation. The targets of C are equal to length of wave A or $1.62*A$ or $2.62*A$. so, the target becomes, 3637.64 or 4032.13 or 4668.40.

DSE Month Ended General Index

From the Figure5 following features can be found—

- Δ Five waves of the Cycle wave are formed. Correction is on the process.
- Δ Primary or other forms of waves can hardly be identified.
- Δ Wave I is the longest where wave three should have been.

When this result is checked with the Fibonacci ratio table, again it is found that there is no exact match. However, there is close match only for the wave 4. This indicates, the Fibonacci ratios are not good predictor in this case. The time frame analyses also do not show any conformity with the rules.

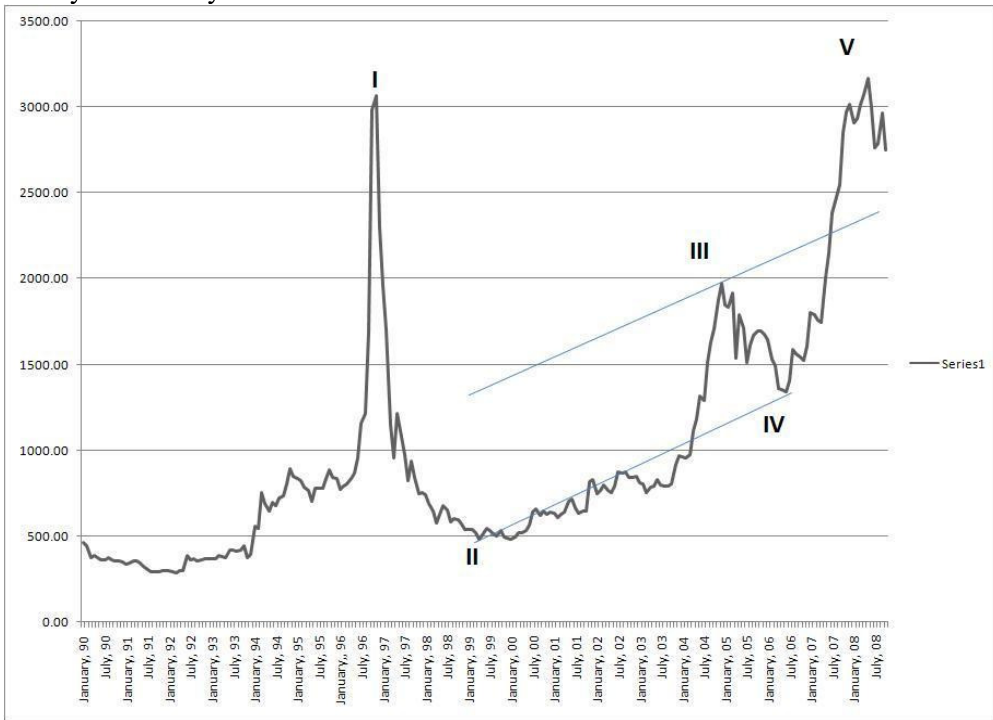


Figure 5: Elliott Wave in DSE Month Ended General Index

Source: Authors' Calculation based on secondary data

Table 3: DSE Month Ended General Index-Fib. Ratio and Time Frame

	Wave No	Ratio	Days taken for Formation
Super cycle	Wave 1		1706
	Wave 2	0.93	881
	Wave 3	0.54	2071
	Wave 4	0.42	547
	Wave 5	0.66	700

Source: Authors' Calculation based on secondary data

The channel analysis of the Cycle shows that third wave and fourth missed its target. But the wave 5 exceeded the target level.

The Prediction

Considering the graph of DSE Month Ended General Index it is understandable that the market has just entered into a corrective phase. The wave three is not extended, thus the lowest target for the correction wave A would be wave 4.

Following features are found from the figure 6:

- Δ Five waves of the Cycle wave are formed. Correction is on the process.
- Δ Primary or other forms of waves can hardly be identified.
- Δ Wave I is the longest

DSE Month Ended All Share Price Index

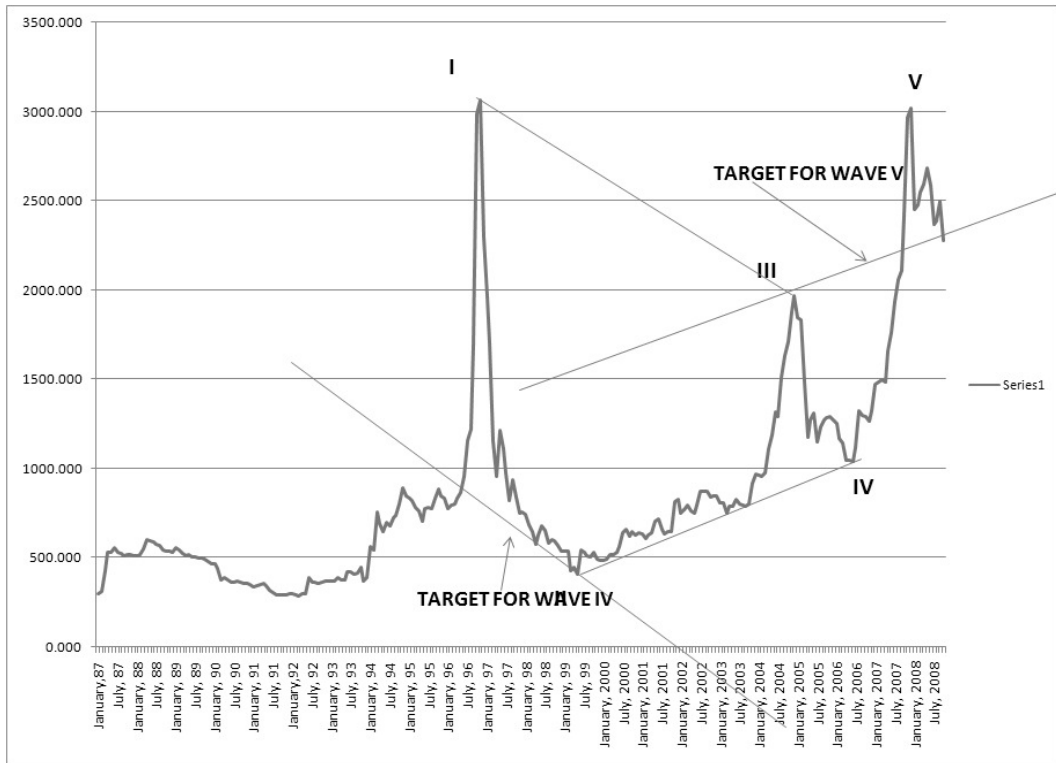


Figure 6: Elliott Wave in DSE Month Ended All Share Price Index
 Source: Authors' Calculation based on secondary data

Table 4: DSE Month Ended All Share Price Index-Fib. Ratio and Time Frame

	Wave No	Ratio	Days taken for Formation
Cycle	Wave 1		1706
	Wave 2	0.96	911
	Wave 3	0.56	2041
	Wave 4	0.60	547
	Wave 5	1.17	548

Source: Authors' Calculation based on secondary data

When this result is checked with the Fibonacci ratio table, again it is found that there is no exact match. However, there is close match only for the wave 4 and wave 5. This indicates, the Fibonacci ratios are not good predictor in this case. The time frame analyses also do not show any conformity with the rules.

The channel analysis of the Cycle shows that third and fourth wave missed its target. But the wave 5 exceeded the target level.

The Prediction

Considering the graph of DSE Month Ended General Index it is understandable that the market has just entered into a corrective phase. The wave three is not extended, thus the lowest target for the correction wave A would be wave 4.

The most important finding of this research is that the Elliott wave is functioning in DSE indices effectively only for the DSE General index. This shows that the market is not functioning according to the requirement of the Elliott Wave principles. One of the requirements was less intervention of the government. Other findings are listed below.

1. The Elliott wave is more suitable for predicting in the case of DSE General Index among the indices of the DSE.
2. The smaller parts of the waves are hard to identify. Specially, the corrective waves.
3. The Fibonacci ratios cannot predict the market exactly.
4. The market can be predicted for the trends not exact position.
5. Truncations often happen in the market. This indicates the market gains new strength or weakness in the fifth wave.
6. Rules of alternation are identifiable.

Conclusion

Through technical analysis, markets can be predicted to help investment decisions. However, it is important to have strong and efficient market to predict the market. In the case of DSE, the Elliott wave cannot predict the market in an exact position. But we can predict the minimum target or the trends. And, this can help our investors a lot for their survival. This research will help to identify effectiveness of Elliott Wave in DSE and also will help the investors to take their decision about investment by analyzing through Elliott waves.

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