

Nepal Stock Exchange Index Movement

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Abstract

Due to the features of the stock market and NEPSE index, predicting stock price movements is a challenging task. The nature of NEPSE index volatility makes it challenging for investors to booked profit from stocks. The main issues whether the trends and pattern can identify the movement of NEPSE Index or not? To address this problem, investors need to know accurate patterns of past index and make predictions about future price changes. In this study, The research design based on quantitative methods data has collected for 10 years NEPSE Index, used from January 2014 to December 2023 and technical trading tools such as Diagram and trend chartwere used to determine the movement of the NEPSE index. As a result, Bullish market start after completion of long pattern of sideways market and exist 13 to 14 month only and falling towards bearish trend the NEPSE index pattern provides buy signal in March and selling signal in July.while the trader can benefit from it in the very short term, but Past performance is no guarantee of future results.

Key Words: NEPSE, index, Technical Analysis, Price, Volatility

Introduction

The Nepal Stock Exchange index or market value-weighted indexis the benchmark index of the Nepal Stock Exchange (NEPSE). It indicates the fluctuation of total market capitalization of companies' transactions that listed in Nepal Stock Exchange. This means that the index value is based on the total market value of all the companies listed on the

Nepal Stock Exchange. The market capitalization of each company is calculated by multiplying the current market price of its shares by the total number of outstanding shares. The NEPSE index is then, calculated by summing up the market capitalization of all the companies and dividing it by a divisor that adjusts for any changes such as stock splits, bonus issues, or rights issues. This method gives more weight to companies with higher market capitalization, reflecting their larger impact on the overall market.

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The process of predicting the future price of a stock traded on an exchange is known as stock market trend forecasting. Technical analysis is a trading tool that uses data from trading activity, such as price movement and volume, to evaluate securities and predict their future movements. According to technical analysis assumptions, price movement and volume follow certain patterns over time (Vaiz&Ramaswam, 2016). Stock market forecasting is one of the toughest challenges that have plagued researchers and financial professionals for more than half a century. Technical analysis creates forecasts based on mathematical indicators based on stock prices.(Picasso, Merello, Ma, Oneto, & Cambria, 2019).

Technical analysis of the stock prices include the study of market price in an attempt to predict the future price movement. It is alternative theory of predicting the market price of share in stock market it is market-oriented theory based on force of demand and supply. The share price is reflected in the action of market especially past market rather than the intrinsic value of share. The analyses who analyze the security behavior of past movement to predict the future price of share, is known as technical analysis or technicians. Technical analysts focus most of their attention on the charts of security market price and on related summary statistics about security transactions.

The main objective of this study is to predict the trend and patterns of NEPSE movement using Technical Analysis. A specific objective of this study is to assess whether the

technical analysis can identify the movement of NEPSE Index or not? This study also support to examine the use of technical analysis in Nepal Stock Exchange Ltd.

Literature Review

Conceptual Review

Past behavior of stock market, which may be self-repeat in future is main slogan of technical analysis. Technicians recommend for short term on the basic of history for profitable investment. "Technical analysis is the study of stock exchange information as such. The word 'technical' implies a study of market itself and not of those external factors, which are reflecting in the market, relevant factors whatever they may be reduced to the volume of stock exchange transactions and the level of share prices; or more generally to the sum of the statistical information produced by the market. (Rosenfield,1975 p. 297). Statistical information is matter of technical analysis.

Technical Charts

Line Chart

Line chart are diagrams in which different prices both of specific day and across the days are plotted on the chart and afterward these are gotten together with the assistance of a line in the sequential request. A basic line showed the development of price and volume over a timeframe. These are most regularly used chart. Different developments like support, resistance, up-pattern, downtrend, and so forth can without much of a stretch be recognized in these.

Bar Diagrams

Bar graphs are outlines which give insights regarding the four price prevailing for a day for one specific share, for example most highest, least, opening and closing price of a day.

Candle Chart

In the candle chart a thick bar called a candle is attracted the diagram. The upper edge of the candle demonstrates excessive price and lower edge of the candle shows the low price of the day. Candle is left blank to show an upward movement during the day, whereas it is darkened when price have moved downside.

Tools for the analysis of predicting overall market trends:

Dow Theory

The Dow Theory is used to delineate trends in the market as a whole or individuals securities. According to Mr. Dow "The market is always considered as having three movements, all going at the same time. The first is the narrow movements from day to day. The second is the short swing, running from two weeks to a month or more, the third is the main movements covering at least 4 years in duration." According to Dow that share prices show three kinds of price movements all moving at the same time: daily movements Secondary movements and primary movements. Primary move last from a few months to many years and represent the broad underlying trend of the market. Secondary movements last from a few weeks to a few months and move counter to the primary trend. Daily movements can move with or against the primary trend and last a few hours to a few days, but usually not more than a week. They are explained as follows (Hamilton, 1929:114-120)

Empirical Studies

A sample of closing prices for the general index of the Amman Stock Exchanges was used as data for the study. The results show that technical analysis is able to predict price movements and provide profitable buy and sell recommendations (Abbad, Fardousi, & Abbad, 2014).

“Trend Analysis of Share Price in NEPSE's” concluded that most of the theories and assumptions of technical analysis matches with the Nepal’s stock market. Although mostly fundamental factors influence the share price in NEPSE but one cannot also ignore the past price and traded volume of the company. Investors were found that they were eager to learn and apply the technical tools. He also concluded on his study that three oscillators (i.e. MACD, ROC and RSI) are very helpful tools of technical analysis, which help in depicting the future market. (Karki ,2008)

Technical analysis helps investors observe the market using various clues that are useful for their research. Technical indicators allow analyzing the short-term price movement of stocks, show the turning point and help in price forecasting (Sagala, Saputri, Mahendra, & Budi, 2020).

Prediction of NEPSE Index Movement Using Technical Analysis. the Nepalese context and due to the global economic crisis and uncertain political environment, as a result, in a bearish market, the candlestick stick pattern produces mixed results while the trader can benefit from it in the very short term, but sometimes does not provide the right and appropriate movement.(Joshi, 2023).

Pandey (2007) in his article mentioned that while investing in IPO one should care to the overall political and economic indicators of the country as capital market behaves in direct proportionate to the eco-political situation of the country. He also added that market trend (bearish, bullish, trend reversal etc.), technical should be beneficial in short term investment (The Kathmandu Post, January 17).

Shrestha (2008), In his article stated that due to lack of institutional investors and mutual funds Nepal's share market is not able gain the trust of overall investors and potential investors. He recommended in the need of institutional investors, 58 transparency of all the listed companies, consultants and portfolio managers for the systematic development of stock market (Rajdhani Daily, April)

Predicting security prices and supporting investment decisions. This study shows how the trading signal generated by this indicator can be used to reduce market trading risk. This

study also examines which model is able to increase profitability by incorporating additional criteria to avoid erroneous trading signals. When buying and selling stocks, technical analysis is used to determine the right timing for entry and exit points. (Joshi, 2022).

The technical analysis is generally helpful in predicting future price movements. Technical analysis does not guarantee stock returns, but rather helps investors maximize gains or minimize losses by determining when to enter and exit a stock position (Fisal, 2017).

Methodology

The research design is based on quantitative methods. For this study, secondary data was collected from merolangani.com. Data from the Nepal Stock Exchange Ltd. is used for this analysis. NEPSE Index used from January 2014 to December 2023. The data analysis is based on the generated chart patterns of the Candles Stick technical indicator as well as bar diagram and line charts. In this research for the data analysis, Microsoft Excel Sheet is use

Results& Conclusion

Predicting stock price movements in the Nepal Stock Exchange (NEPSE) is complex due to its volatile nature. The NEPSE index, characterized by frequent fluctuations, poses challenges for investors trying to time the market for profit. The study conducted analyzes 10 years of NEPSE index data, from January 2014 to December 2023, using quantitative methods and technical tools like trend charts. It Shows the NEPSE index higher and lower price movements over the past decade, reflecting key peaks and troughs in the market.

Table 1

Higher Index

Y/M	Jan	Feb	march	april	may	june	july	Aug	sep	oct	nov	Dec	Max	Min
2014	843.4	831.86	811.04	823.24	866.57	945.82	1083.55	1056.43	946.6	935.01	921.3	916.74	1083.55	811.04
2015	988.07	991.44	988.77	952.03	909.82	966.59	1053.95	1200.92	1205.84	1183.48	1107.43	1151.38	1205.84	909.82
2016	1222.43	1291.81	1377.33	1464.91	1544.53	1724.59	1881.45	1845.41	1838.9	1819.88	1762.21	1600.49	1881.45	1222.43
2017	1482.85	1389.83	1610.62	1709.82	1662.38	1637.37	1652.69	1667.94	1566.5	1571.92	1537.67	1536.54	1709.82	1389.83
2018	1456.07	1424.95	1315.13	1438.49	1366.15	1282.75	1224.41	1210.32	1280.05	1249.93	1222.53	1216.27	1456.07	1210.32
2019	1195.54	1153.06	1163.26	1314.51	1321	1305.68	1284.07	1263.84	1194.77	1149.4	1145.57	1172.65	1321	1145.57
2020	1343.66	1632.18	1591.36	1321.3	1226.16	1260.76	1479.03	1484.99	1575.18	1647.46	1997.06	2087.28	2087.28	1226.16
2021	2441.85	2640.35	2619.03	2735.46	2827.93	3025.83	3094.95	3198.6	2980.79	2837.62	2848.84	2633.66	3198.6	2441.85
2022	2947.38	2891.33	2668.11	2513.41	2307.44	2130.71	2195.1	2196.25	1981.48	1874.87	1965.98	1983.95	2947.38	1874.87
2023	2211.76	2182.63	2002.7	1963.55	1959.12	2186.36	2227.16	2089.84	2029.78	1976.29	1894.53	2141.87	2227.16	1894.53
Max	2947.38	2891.33	2668.11	2735.46	2827.93	3025.83	3094.95	3198.6	2980.79	2837.62	2848.84	2633.66	3198.6	2633.66
Min	843.4	831.86	811.04	823.24	866.57	945.82	1053.95	1056.43	946.6	935.01	921.3	916.74	1083.55	811.04

Table 2

Lower Index

Y/M	Jan	Feb	march	april	may	june	july	Aug	sep	oct	nov	Dec	Max	Min
2014	776.9	769.51	754.99	795.93	830.71	869.18	956.6	921.86	875.56	910.35	844.06	846.41	956.6	754.99
2015	903.68	970.62	939.1	934.25	837.83	890.43	936.76	1029.92	1156.08	1084.37	1022.77	1062.78	1156.08	837.83
2016	1146.77	1238.02	1289.52	1351.54	1463.13	1483.14	1690.43	1675.91	1730.64	1751	1469.48	1407.53	1751	1146.77
2017	1309.7	1252.5	1316.8	1612.34	1594.43	1551.07	1541.28	1580.03	1493.2	1501.89	1460.73	1390.58	1612.34	1252.5
2018	1393.04	1345.99	1168.55	1192.96	1300.41	1194.8	1179.71	1180.63	1190.28	1214.36	1148.7	1120.84	1393.04	1120.84
2019	1160.59	1102.32	1100.58	1149.99	1277.68	1244.89	1242.04	1196.42	1123.84	1132.4	1110.08	1111.99	1277.68	1100.58
2020	1166.22	1319.99	1188.71	1192.2	1201.58	1188.71	1298.73	1381.38	1487.81	1556.8	1636.17	1932.11	1932.11	1166.22
2021	2165.5	2408.24	2389.19	2506.62	2618.57	2771.15	2801.13	2975.84	2615.4	2510.73	2628.37	2281.67	2975.84	2165.5
2022	2584.91	2610.58	2514.58	2320.51	2137.92	1848.28	1915.61	1973.38	1815.13	1844.14	1883.16	1855.06	2610.58	1815.13
2023	2046.26	2019.93	1888.29	1838.48	1818.31	1866.34	2049.44	1990.59	1932.45	1851.43	1826.23	1837.71	2049.44	1818.31
Max	2584.91	2610.58	2514.58	2506.62	2618.57	2771.15	2801.13	2975.84	2615.4	2510.73	2628.37	2281.67	2975.84	2281.67
Min	776.9	769.51	754.99	795.93	830.71	869.18	936.76	921.86	875.56	910.35	844.06	846.41	956.6	754.99

s shown above, Table 1 and 2 presented higher and lower index of stock market passed through several ups and down during this period. NEPSE index was 754.99 on 2014 march. The index after 28 month is at 1881.45 on July 2016 kissing new heights. This is a gain of 149.2% over 28 months. After that, the NEPSE declined from August 2016 to March 2019. The new lower index found after 30 months was 1100.58 on 2019 March. This is a loss of 41.5%. After that,NEPSE rose from 1100.58 to 3198.6 on 2021 August. It takes 28 months for next peak. Which consist gain of 190.63%.However,NEPSE index cross the previous bullish point on November 2020. It takes 10 months.

Table 3

Bull and Bear phase in the NEPSE from 2014 to 2023

Year	Max	Min
2014	1083.55	754.99
2015	1205.84	837.83
2016	1881.45	1146.77
2017	1709.82	1252.5
2018	1456.07	1120.84
2019	1321	1100.58
2020	2087.28	1166.22
2021	3198.6	2165.5
2022	2947.38	1815.13
2023	2227.16	1818.31

This table highlights the volatility of the NEPSE index, showing how the market has fluctuated between bullish and bearish trends, influenced by economic, political, and global factors. The highest index values typically followed significant market recovery periods, while the lowest values corresponded to bearish downturns, often linked to external shocks like the pandemic.

Diagram 1: Maximum and Minimum Index Comparison

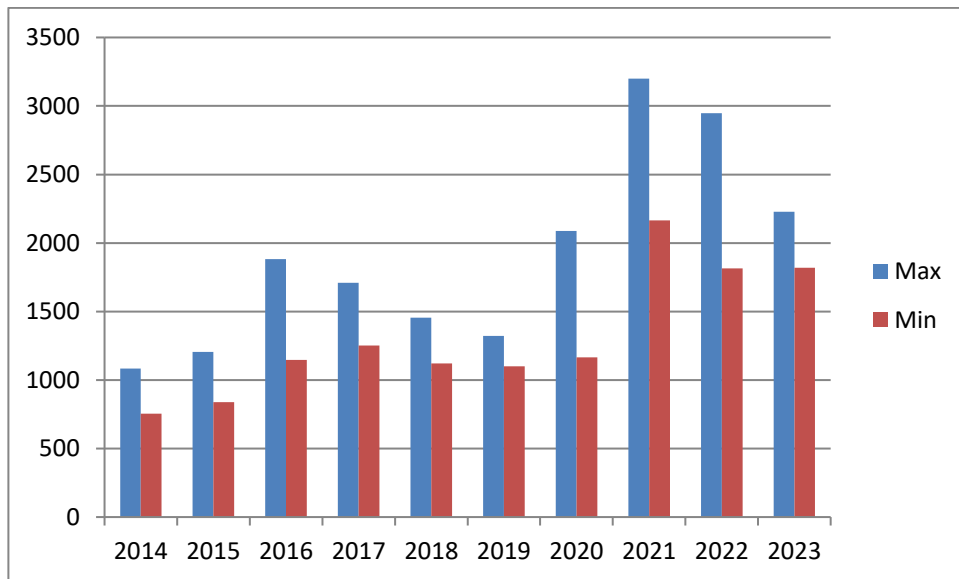
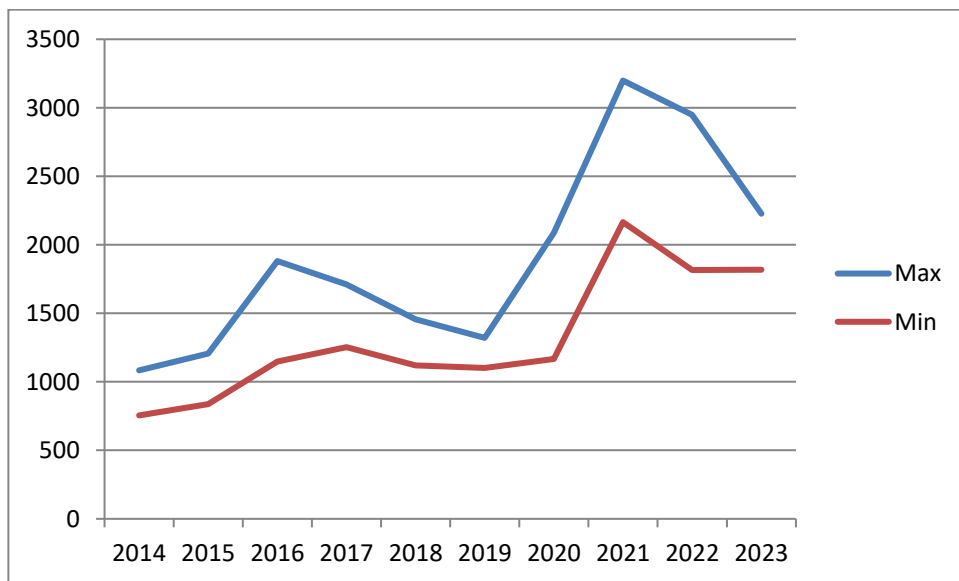


Chart 1: Maximum and Minimum of NEPSE Index over 10 years



As shown above, table 3, Diagram 1 and Chart 1 presented Maximum and minimum index of stock market passed through several ups and down during 2014 to 2023. Lower NEPSE index was 754.99 and Higher Index was 1083.55 on 2014. The index after 2014 both maximum and minimum line are slightly parallel up to mid 2015. It indicate sideways trend. After that, both lines are increasing up to mid2016and reaching new heights and start to falls. The NEPSEfrom 2016 to 2018 indicates bearish trend. After 2018 to mid 2020 sideways pattern arises andnew lower index was 1100.58 on 2019. By touching new lower point NEPSE index moved from 1100.58 on 2019 and reached all time peak of 3198.6 on 2021. NEPSE found next bullish point. The next major crash occurred from 2021 to 2022 where NEPSE continuously fall from 3198.6 to 1815.13 and is currently at the level 2227.16.

The NEPSE index has experienced multiple fluctuations between 2014 and 2023, marked by alternating periods of growth (bullish), decline (bearish), and stability (sideways trends). From March 2014 to July 2016, the NEPSE witnessed significant growth, rising by 149.2% to reach 1881.45, signaling a bullish trend. However, this was followed by a steep decline, with the index falling to 1100.58 by March 2019, a loss of 41.5%.

After this bearish phase, NEPSE rebounded, reaching an all-time high of 3198.6 by August 2021, representing a gain of 190.63%. Despite this growth, the market faced another decline from 2021 to 2022, dropping to 1815.13. Currently, the NEPSE is recovering at 2227.16, showing a blend of bearish and sideways trends since the peak. NEPSE passed through bearish and sideways patterns.

Major Findings

From this study, the major results are;

Interval	Duration	Patterns
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: 2014 January to 2015 June	18 month	sideways
2015 July to 2016 July	13 month	Bullish
2016 August to 2018 March	20 months	Bearish
2018 April to 2020 June	27 month	Sideways
2020 July to 2021 August	14 month	Bullish
2021 September to 2022 June	10 month	Bearish
2022 July to 2023 December	18 month	Sideways

Bullish Phases: The NEPSE index saw two significant bullish periods from March 2014 to July 2016 and from March 2019 to August 2021, with gains of 149.2% and 190.63%, respectively.

Bearish Phases: Major declines occurred from August 2016 to March 2019 and from August 2021 to June 2022, where the index lost 41.5% and 43.24%, respectively.

Sideways Patterns: The market exhibited sideways trends, especially from 2014 to mid-2015 and from mid-2018 to mid-2020, indicating periods of relative stability with no clear direction.

Current Trend: As of 2023, the NEPSE index is gradually recovering from its latest decline, fluctuating between bearish and sideways movements. The index is now at 2227.16.

Conclusions & Implication

The study found NEPSE in sideways, Bullish and Bearish trend. Mostly sideways pattern are existing in long run, normally 2 years. After end of sideways trend, bullish market start and it's movement exists normally 1 years, after that 1 to 2 years bearish market exist.

This finding predict new bullish arises after completion of sideways pattern. Although index movements or price prediction is one of the most difficult challenges in the stock market of Nepal. Technical analysis focuses on market action, specifically volume and price. When considering which stocks to buy or sell, investors should use the approach that must be comfortable for them. As with all investors must make own determination whether to invest in any particular security or securities is right for investors based on their investment objectives, risk tolerance, and financial situation. Past performance is no guarantee of future results.

It is useful to all the concerned body to identify the trend before banking investment decision. Investors and stock analysts should implement. This research is useful for brokerage house, regulation body and training institute to provide in-depth knowledge about the technical analysis.

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