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**PREDICTION OF STOCK MARKET MOVEMENT USING HISTOGRAM AND
DATA MINING**

Mr. Anand Ratilal Gyanbote, Prof. Rashmi Singh

* Computer Science & Engineering, SAM College of Engineering & Technology Bhopal, India

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ABSTRACT

The Moving Average Convergence Divergence (MACD) trading indicator is simple and has been widely used in financial markets to provide trading signals. The MACD-Histogram (MACDH) can be derived from MACD as a second-order trading signal of price actions. To reduce the lagging effects in MACD&MACDH, forecasted values are introduced in a hybrid trading signal, termed as the forecasted MACDH. A detailed trading simulation is performed for a single stock/commodity under a single long-short-MACD parameter of different timeframes of charts is taken into consideration to explain the experimental design.

In the Stock Market, Commodity Market, Forex Market all over the World this concept of Histograms can be applied. MACD Histogram is actually a value that can be positive or negative according that value a bar is plotted on the MACD Technical Indicator. This MACD Histogram gives the answer to what will be the movement of the market in future and according to that the investor or trader can take decision on Buy/Sell or Long/Short.

The Concept Data Mining is used to retrieve the data and values of previous and current Histograms. Data mining is a process used by companies to turn raw data into useful information. By using software to look for patterns in large batches of data, businesses can learn more about their customers and develop more effective marketing strategies as well as increase sales and decrease costs. Data mining depends on effective data collection

KEYWORDS: MACD,MACDH,Histogram,

INTRODUCTION

A "positive divergence" or "bullish divergence" occurs when the price makes a new low but the MACD does not confirm with a new low of its own. A "negative divergence" or "bearish divergence" occurs when the price makes a new high but the MACD does not confirm with a new high of its own. A divergence with respect to price may occur on the MACD line and/or the MACD Histogram

Gerald Appel [1] referred to bar graph plots of the basic MACD time series as "histogram". In Appel's Histogram the height of the bar corresponds to the MACD value for a particular point in time. The difference between the MACD and its Signal line is often plotted as a bar chart and called a "histogram". In practice, if the First Histogram is plotted above the zero line in larger timeframe of candlestick chart the buy signal is generated and in comparison of the two consecutive histograms is plotted of same height then exit signal is generated. conversely when the first histogram plotted below the zero line Short Sell Signal is generated and in comparison of the two consecutive histograms are plotted of same height then Cover the Short Signal is Generated.

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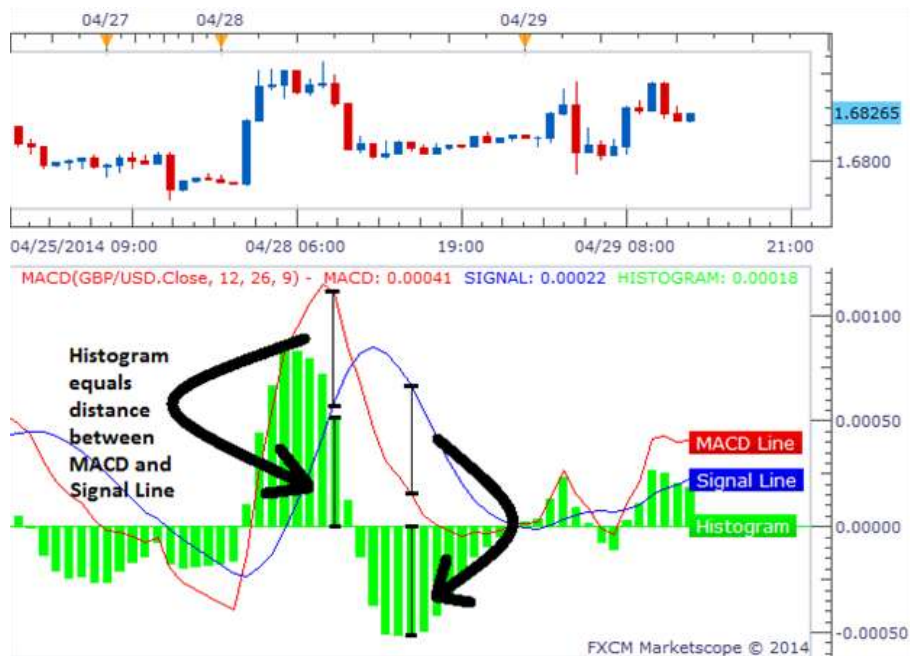
MATERIALS AND METHODS

MACD's Histogram Construction

The green histogram or “bar chart” included in the background of the MACD displays the difference between the MACD and Signal line. When the MACD is above the Signal line, the bar is positive. When the MACD is below the Signal line, the bar is negative. The actual height of the bar is the difference between the MACD and signal line itself.

MACD comes with the MACD-Histogram, but the MACD-Histogram can be shown as a stand alone indicator. This makes it much easier to identify divergences and crossovers. The MACD-Histogram can be set as an indicator above, below or behind the price plot of the underlying security. The histogram covers a lot of chart space so it is often best to place it above or below the main window. It is possible to show MACD without the histogram in the main window. Choose MACD as an indicator and change the signal line number from 9 to 1 (9,26,1). This will remove the signal line and the histogram. The signal line can be added separately by clicking the advanced indicator options and adding a 9-day EMA

Figure:



MACD Histogram with Green Bars



MACD Histogram with Green and Red Bars



RESULTS AND DISCUSSION

The MACD indicator is a useful addition to any stock trading strategy. It is a good measure of momentum, trend direction and can also be a good guide to the relative strength of the market, indicating whether the market is overbought or oversold.

Formulae:

Calculation

MACD Line: (12-day EMA - 26-day EMA).....(1)
Signal Line: 9-day EMA of MACD Line.....(2)
MACD Histogram: MACD Line - Signal Line.....(3)

[13] The MACD Line is the 12-day Exponential Moving Average (EMA) less the 26-day EMA. Closing prices are used for these moving averages. A 9-day EMA of the MACD Line is plotted with the indicator to act as a signal line and identify turns. The MACD Histogram represents the difference between MACD and its 9-day EMA, the Signal line. The histogram is positive when the MACD Line is above its Signal line and negative when the MACD Line is below its Signal line.

The values of **12**, **26** and **9** are the typical setting used with the MACD, however other values can be substituted depending on your trading style and goals.

CONCLUSION

MACD calculates the absolute difference between two moving averages and not the percentage difference. MACD is calculated by subtracting one moving average from the other. As a security increases in price, the difference (both positive and negative) between the two moving averages is destined to grow. This makes it difficult to compare MACD levels over a long period of time, especially for stocks that have grown exponentially.

Looking at the current values of histogram along with the bars with comparison of the previous bars actual Buy/Sell and Short/Cover Signals are generated with 90% to 100% Accuracy. In the next paper i am going to discuss about different time frames of Charts and MACD Histograms and Actual Entry and Exit Signals with alert message.

ACKNOWLEDGEMENTS

In this paper the trading terminology according to the movement of stock market, the retail trader or investor make comfortable decisions on buying and selling the stocks

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