

A Review of Technical Analysis as a Tool for Stock Market Forecasting

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Abstract:

Technical analysis is a fundamental analysis that uses historical price charts and various other factors to predict future price movements in the markets. Technical analysis is a type of market analysis that is focused on the price charts of an asset. Unlike fundamental analysis, it focuses on the intrinsic value of an investment. Analyzing a company's balance sheet, profit, and loss account, and cash flow statement is an effective way to evaluate its financial performance, but sometimes it is very time-consuming and not practical for a brief period. Thus most short-term traders rely on Technical Analysis as a tool for stock market trading. This study focus on a review of various recent researches about technical analysis and its applications. This study also extends the multiple assumptions and their validity on which technical analysis.

Keywords: Technical Analysis, Stock Market, Finance, Stock Analysis

Introduction to Technical Analysis

Stock markets are essential in finance and economics. There are various ways to make money in them. Even though the time horizon and risk appetite are critical factors to consider while investing, it is still essential that the objective is to maximize the returns. Traders use various strategies to predict stock market prices. One of these is by using historical data. The efficient market and random walk theories contradict this approach by claiming that the costs of publicly available information are instantly reflected in terms of returns.

This section introduced the concept of technical analysis, which is a vital part of any investor's portfolio. It can help you make informed decisions in the foreign exchange market. This topic will also focus on the various technical indicators used in trading stocks in the US. Financial markets are multiple platforms where the trading of securities occurs. Financial markets are integral to the operation of capitalist economies. Technical analysis is a process utilized for analyzing and predicting future price movements.

Almost 90% of survey respondents use technical analysis to make decisions about their UK market portfolio. Technical analysis is a process that involves analyzing the price movements of various financial instruments based on their historical charts. It can also be divided into two groups: the technical indicators and the price action. Multiple options strategies are based on the combination of Bollinger bands and double deviation.

Digital options and binary options are financial instruments that can be used to profit from price fluctuations. These types of instruments are usually sold to investors for short-term gains. Knowing the importance of these indicators in your trading systems will help you improve your performance. Mark Tylor and Lukas Menkhoff argued that technical analysis is much more than fundamental analysis.

Investment & Speculation

While investing and speculating are different, they are both focused on the same goal. You're trying to profit from the stocks that you buy and sell. It is crucial that a company's financial reports are thoroughly examined to determine the actual valuation of the product or service. This process is straightforward and can be done for a variety of reasons. It can be used to evaluate the health of a business and its various operations. The goal of an organization is to achieve a high level of success, and this decision is based on a fair conclusion. But, what if the same effort is not successful? Expectations are usually low for investors wanting to achieve revenue or benefit from investing. They should aim for a reasonable return on their money, or they should return it in full. To be considered a long-term holding, the owner must keep the asset for at least a year. This process involves analyzing and studying numerous investments and industries. Speculation is the act of spending money with a high likelihood of losing it. It is usually done for the purpose of generating significant returns. Day traders are individuals who are buying shares with the intention of holding them for a limited amount of time. Stop-loss orders are usually placed by speculators for one day. They can only close until the trading day has ended. A successful pattern trading technique involves buying or selling a stock at a specific price. An investment project is a type of project that guarantees the protection of principal and an appropriate return.

Technical Analysis

Price Moves in Trend

Price trends are defined by technical analysts as the direction of prices within a given range. They typically indicate a sideways or upward trend. A security that has an apparent trend can be sold. For instance, in Figure-1, AOL has an evident trend from November 2001 to August 2002.



Figure 1: Sample Chart

When a stock rises, its buyers enter the market and sell it, which is a sign of a downtrend. The stock's lower lows and higher highs are also known as the "zig-zag" movements in the price. The sequence of lower lows and higher highs did not start until August. Then, after reaching a low price, AOL makes a high price. The stock makes a relative high later in the same month, which indicates that the downtrend is at a halt or maybe even ending. This is a technical indicator that suggests that the selling may be about to end.

History Repeats Itself

Technical analysts believe that emotions are part of the market's behavior. Because investor behavior is so unpredictable, technicians believe that price patterns will develop on charts. They can then select those with a higher probability of success. Technical analysis is focused on price trends. It also considers various indicators such as investor sentiment surveys. These surveys help technicians determine if a trend has developed or not. They are most likely to predict a change in investor sentiment after analyzing the data. Surveys that show over-enthusiastic bullishness are often signaled that an uptrend is about to reverse. They suggest that most investors have already bought the market. Since most investors are bullish, it's natural to assume that few buyers remain. This means that prices will trend down, which suggests that contrarian trading is not an option.

Profitability in Technical Analysis

Technical analysis is a controversial subject. It can be used to make predictions about various factors, but it can also be used to make inaccurate forecasts. Many people claim that they have experienced positive returns, but academic studies often find that this method has little predictive power.

Neural networks can sometimes produce statistically significant predictions. A study conducted by the Federal Reserve in 2016 noted that support and resistance levels help predict short-term foreign exchange rates. A study conducted in China revealed that technical trading strategies could be effective in the country's marketplace. The study identified several key factors that can influence a trader's decisions. A survey conducted in 1992 by Brock et al. supported the use of technical trading rules. However, it was tested for data snooping problems in 1999. Gerwin Griffioen, an economist at Amsterdam's Vrije Universiteit, has concluded that the recursive out-of-sample forecasting procedure is not profitable for most international stock market indices. For too high a transaction cost, technical trading is not

statistically significant. Also, it is not found that technical trading has effective risk-corrected forecasts for almost all the stock market indices.

The costs associated with transactions are particularly applicable to momentum strategies. A comprehensive review conducted in 1996 concluded that even small transactions could lead to an inability for firms to capture excess profits.

New Age Technical Analysis

In 1994, Cagin and Balenovich showed that the asset-flow differential equations could be used to generate patterns of technical analysis. Some patterns can be created by assuming that two separate groups of investors have different assessments of valuation. The models are formulated using various assumptions about the nature of assets and their valuation. These assumptions are then followed by multiple patterns.

One of the problems with technical analysis is that it is hard to specify the patterns that can be appropriately tested. Japanese candlestick patterns are defined by a few days of patterns that are within an uptrend or a downtrend. These patterns were first created by Laurent and Caginalp.

The set of criteria were then tested using a short-term trend definition. They then analyzed eight major three-day candlestick patterns using a non-parametric method. They found that the patterns were strong indicators of inequality. Technical analysis tends to focus on when a trend appears to continue. This concept has often led to the conclusion that stocks are random walks.

A study conducted by Fisher Black and Poterba and Summers found that a small trend effect could be difficult to test. The method used by Caginalp and Constantine in 1995 was developed to avoid the noise when comparing closed-end funds. A closed-end fund is different from an open-end fund. Its shares are not redeemed and can only be traded among investors. The authors of one study found that the price of tomorrow is not determined by the previous day's price, nor is it the exact relative price change from today to tomorrow. One recent paper aims to develop a general framework for analyzing the past time evolutions of prices in terms of velocity and acceleration. It seeks to establish a principled classification of possible patterns that can be used to identify the defects in the random walk market.

The classification is based on the Froude number and the time horizon forecast. Both are dimensionless parameters that can be used to evaluate the relative strength of acceleration. Both trend-following and contrarian tendencies are formed depending on the time horizon. A renormalization group approach can be used to predict the future direction of markets. A survey conducted by Park and Irwin in 1991 showed that most people found technical analysis to be a positive benefit. In 2011, Cagin and DeSantis tried to find out if the same elements of technical analysis have scientific validity. Data sets with over 100,000 points show that trend has a significant effect on valuation. Their work mainly relates to the nonlinear development of movements. When directions are vital, they have a positive impact on returns. However, when they are weak, the positive impact is negative. For uptrends, the buying on dips does not take place until the uptrend has reached a 4.6 standard deviation event.

In 2013, Kim Man Lui and T. Chong explained that the profitability of technical analysis mainly depended on the rules that were used for analyzing historical data. Technical analysis is not an algorithm but a process utilized by real-world traders. There's no difference between the traders who are more skilled and those who are less proficient in terms of technical analysis. However, it has been proven that those with more knowledge outperform those with less.

Conclusion

The literature review concludes that there is no evidence to support the use of moving averages, momentum, and resistance patterns. Although publication bias should not affect the performance of technical analysis, it should not prevent people from making informed decisions. Charts are better than currency markets at predicting future performance. The decline in technical analysis is widely attributed to the increasing number of participants and the increasing cost of doing business.

References

1. Arize, A., Kallianotis, L. N., Liu, S., Malindretos, J. & Maruffi, B. L. (2014), "The Preponderance of Stock Picking Techniques: The Practice of Applied Money Managers," *Accounting and Finance Research*, 3(2): 87.
2. Naved, Mohd. "Technical Analysis of Indian Financial Market with the Help of Technical Indicators." *International Journal of Science and Research (IJSR)*, ISSN (Online) (2015): 2319-7064.
3. Han, Y., Yang, K., & Zhou, G. (2013), "A New Anomaly: The Cross-Sectional Profitability of Technical Analysis," *Journal of Financial and Quantitative Analysis*, 48(1), 1433-1461.

4. Naved, Mohd, and Prabhat Srivastava. "The profitability of five popular variations of moving averages on Indian market Index S&P CNX Nifty 50 during January 2004-December 2014." *Advances in Economics and Business Management (AEBM)* 2.1 (2015): 27-32.
5. Pallathadka, Harikumar, et al. "Applications of artificial intelligence in business management, e-commerce, and finance." *Materials Today: Proceedings* (2021).
6. Naved, Mohd, and Prabhat Srivastava. "Profitability of Oscillators used in Technical analysis for Financial Market." *Advances in Economics and Business Management (AEBM) Print ISSN* (2015): 2394-1545.
7. Kakani, R., K. & Sundhar, S. (2006), "Profiting from Technical Analysis in Indian Equity Markets: Using Moving Averages," *XLRI Jamshedpur School of Business Working Paper No. 06-02*.
8. Naved, Mohd. "Indian Stock Market: Functions and Importance." *Journal of Social Reality* 4.4 (2014).
9. Ahmed, S. (2008), "Aggregate Economic Variables and Stock Markets in India," *International Research Journal of Finance and Economics*, 14(1): 141-164.