

ANALYZE OF PROCESSES AND METHODS INTENDED FOR ALTERNATIVE TO CRYPTOCURRENCY TRADING WITH MORE PROFIT IN E-COMMERCE

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Abstract- Countries that have not yet started dealing by the electronic commerce and establishing their electronic currencies and beginning trading by them, must start thinking seriously and work in planning for this project that has become a reality imposed on global trade, essentially in the field of currency trading, where this field is considered one of the most important the criteria adopted in the evaluation and classification of the countries, hence to encourage governments to realize a benefit to their people. We will work in this paper to clarify and simplify the broad lines and the most important points to focus on for a smooth transformation from the world of cash money to the world of money and electronic commerce without impacting the existing economically. That starts by the interpretation of the role of the state and the tasks entrusted to it and the enactment of laws, and explaining of the role of the financial institutions and banks to encourage their customers to trade by opening electronic accounts approved in global electronic commerce. On the other hand, we will work to summaries of how to encourage people to the individual Trading on the MetaTrader5 platform, and how to use the robot trader by creating algorithms suitable by the most traders, that mainly depend on the mathematical relationship to calculate the moving average trading price of the signal in the chart, and therefore the implying of this indicator in the automated trading, with that the trading process becomes faster and more accurate in making the decision.

Keywords: Stop Orders, E-commerce, Crypto Currencies, Indicator, Trading, Robot Trading, Automated Trading.

1. INTRODUCTION

News of the death of Cash money quickly turned from a story to certain events, especially after the emergence of many electronic currencies, which most traders preferred to deal in his trade with these new currencies, so that they invaded the world of finance and business in a super-short period of time, so even this does not stop Crawling and without affecting the current economies, especially in

countries with fragile economies, it became necessary after all this period that information science intervenes in order to contribute strongly to this development that will serve the whole of humanity by reducing vast differences between currencies and complex wages in converting them and eventually becoming a currency Unified among the rest of the world to simplify and facilitate the process of electronic commerce between countries.

The intervention of information science in the field of electronic commerce, especially in the slot of trading in electronic currencies to collect and store previous information through programming and placing it in trading platforms so that all traders beginners or professionals can resort to it at any moment and take advantage of it in automated trading, as previous studies have proven that the majority of signals are not Random but are cursed to the system of indicators [1]. Here, information science appears to determine the most appropriate indicator that helps in making the right decision. And due to the emotions of the manual traders, which makes him hesitate to choose the appropriate decision at the right time and accurately [2], the information sciences managed to develop an automatic trading system by integrating the automated trader in the MetaTrader5 platform, which helps in predicting and adopting right decisions quickly and without hesitation to follow the trading indicator which has been programmed using the MQL program via the MetaTrader Editor.

Through our research on many indicators, which exceeds 200 trends, we found many interest people talking about providing the best indicators as new approach, and we found in the chart them mainly depend on mathematical deviation relationships, in specific the following variance relationship:

$$\sigma^2 = \left(\frac{1}{n}\right) \cdot \sum_{i=1}^n (x_i - E(x_i))^2 \quad (1)$$

Standard deviation is a square root of variance:

$$\sigma = \sqrt{\left(\frac{1}{n}\right) \cdot \sum_{i=1}^n (x_i - E(x_i))^2} \quad (2)$$

Standard deviation is used in electronic trading to measure the spread or dispersion of an important part of the values around their mean. As there is an inextricable proportion between the standard deviation and the volume of trades.

So that $E(x)$ it is considered mathematically, the possible predictions of a random variable, and it is also considered the value that we would expect to find about the mean if the same random variable is repeated many times. $E(x)$ corresponds to a weighted average of the values that this variable can take.

Mathematical expectation $E(x)$ of a special random variable x is a metric arithmetical mean of the predicted values x_i of the variable x by their probability p_i :

$$E(x) = \sum_{i=1}^n p_i x_i \quad (3)$$

Analyzing data on the chart (Figure 1) imported from MetaTrader, requires great skills and high experience in the trading market, so it will be difficult for novice traders to make profits, which makes them to bust from the first attempt, whether they rely on their skill or through brokers who constitute the broker and competitor at the same time in the Forex market that is not governed by clear legal controls, which makes some traders vulnerable to fraud [3]. In these circumstances, it is will be difficult to preface to this insecure world.

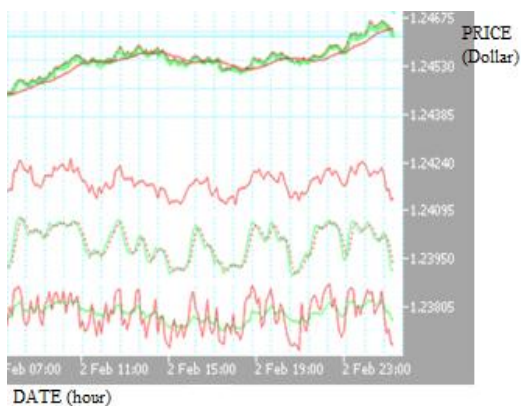


Figure 1. The interface of trading charts

Information from stock charts can be found in newspapers or on the Internet. The visual representation of a business's history is most perceptible. On the graph, we can read the company's past, up and down. Additionally, it is often reassuring to observe the action curve before deciding. Graphical representation is also the basis for technical analysis, a stock market decision method used by quantitative analysts to determine mathematical trends and indicators [4].

To limit losses is a good thing when trading, however, quickly think of placing stop orders, these are selling orders intended to protect against a fall in assets, be it stocks or other financial products you have in your portfolio. They make it possible to determine the maximum amount of loss that one is ready to suffer in the event of a scenario, contrary to that, anticipated. In whatever pay this type of order is called "trigger threshold order" [5], it is offered by all brokers and banks

in the market to their customers. We have listed some criteria that will help to decide:

- Stock volatility:

The more volatile the action, the further the stop will have to be moved away from the current price because the order would risk triggering too quickly. On a volatile asset, more flexible management of stop loss is required.

Investment horizon and Earning goal:

The longer the investment horizon or the higher gain objective, the more the stop will have to be distant because we will be playing on movements of large amplitudes. Thus, if we aim for a gain of 30% over 6 months, it will be unwise to place a stop at 2% loss, because on such a time horizon there is a good chance that the order will be triggered even when the goal could be achieved later.

Should also consider the expected gain, the difference between the desired gain and the maximum tolerated loss. Thus, will not place a stop order at 2% loss with a gain target of 1% because in this case our expectation would be negative (-2% + 1% = -1%). On the other hand, with a stop at -10% and a gain objective at + 30% our expectation of gain is important (-10% + 30% = 20%).

Resistances and Supports on value:

In order to best position stop orders, it is essential to carry out a graphical analysis of the value in order to determine the resistance and support levels. Thus, it will be wise to place a stop order below a significant support, because the break of the latter would mean a clear downward direction and the protection order would then greatly limit losses. By cons, it would be unwise to place the stop above the support, because the value would be likely to trigger it for example by coming to bear on the psychological threshold before bouncing.

By the process of the stop order, the capital committed becomes available again, and we can position ourselves on a new trade, perhaps more profitable. In addition, the automation of the process makes it possible to avoid any psychological fight delivered with oneself to accept the loss and cut the position with regret [6]. Stop orders are essential tools for winning on the stock market over the long term. They make it possible to develop trading strategies where you know in advance the maximum loss on each trade, and thus avoid letting your losses run unnecessarily, through frequent psychological trading on the stock market.

In this work, we will provide everything that individuals need to invest and trade professionally, whether it is a long-term investment or daily speculation in the capital market, be it currency or equity, whether using the volume profile, technical analysis in trading or speculation for professionals and even individuals, even those who have never entered the market or traded once, have not done selling or buying and don't even know what the candles mean in the trading chart.

We will get to know the right way to buy and sell and inconsistencies in the global stock exchanges, we will learn how to buy from below and how to sell from above, we will get to know most of the strategies available, plume profile, in addition to our work strategies to develop them through the use of trading techniques and indicators.

2. IMPLEMENTATION PROCESS & METHODS

We must not overlook the experience of Traders, but at some point, we will have to take the sink and use the database of technical traps to detect market opportunities to start without risks. In order to improve on certain topics and put knowledge into practice, we will implement in this part of our article all the possible methods to encourage investors to join the market of trading in crypto currencies in all safety [7], our starting point shown in (Figure 2).

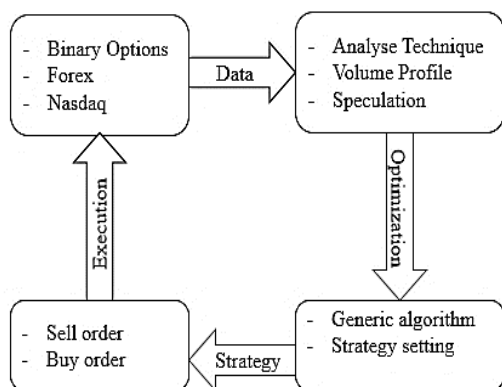


Figure 2. The Theme of the Experiment

The goal of any trader is to make profits regularly and however, very few people make money consistently as traders, so if there is a secret to trading it is to be at the heart of the person's ability to the following:

- To trade without fear or excessive confidence.
- To receive what the market offers him.
- To remain focused at the present time to seek opportunities
- To enter the area spontaneously

The market can do anything at any time, and this seems very clear especially for those who have experienced the market and witnessed volatile and strange price fluctuations. The problem is that we all tend to regard this market feature as a given in a way that causes to commit more fundamental errors repeatedly [8].

Instead of generating unrealistic expectations whose consequences are often psychological and emotional pain, there is in automated trading a robot trader to take advantage of all the opportunities the market can offer at any time [9]. And the fact that an automated trader is always ready is the point through which we will understand that the framework through which we look at information without robot trader is a framework that is limited to what is presented.

2.1. Motor Modeling

2.1.1. The Goals

Certainly, earning money is everyone's goal, executing a winning deal or even several winning deals does not require any skill at all, on the other hand, achieving consistent results and the ability to maintain it is what requires skill.

2.1.2. The Skills

The maintenance of profit and continuity is the result of an objective state of mind free from stress and worry, a situation in which we make ourselves ready to perceive and act on what the market offers us at any moment, the thing that the robot provides in automated trading.

2.1.3. The State

A carefree state that means trust, not excessive joy, when a trader is in a carefree mental state, will not feel any fear, hesitation, or being forced to do anything, because he has effectively eliminated the possibility of interpreting and translating market information as information threatened.

2.1.4. The Objectivity

Now these preferences or patterns they represent, on appear every period, which makes the market an endless stream of opportunities that can be entered or exited from, taking profits, stopping losses or adding or reducing part of the deal. In other words, from a market perspective, every second represents an opportunity for each of us traders to do something that serves our personal interest [10].

2.2. Define the Setting

2.2.1. Market Selection

Choosing an active market for stocks or futures contracts to trade in, if it has liquidity and if it is possible to bear the margin requirements so that many shares or futures contracts can be taken in a single transaction [11].

Choosing a number of market variables by which profits are determined, and these variables can be the trading system or the method that will be chosen, as it can be mathematical or depends on patterns in the price chart and it is better for the trader to design it himself.

2.2.2. Trading

The variables that will be chosen to determine the profits must be completely accurate, the system must be designed so that it does not require any personal decisions or any provisions as to whether profitability is available or not.

If the market is moving in a way that is consistent with the rigid variables present in the designed system, then the trader will have a deal to take, and if not, then there is no deal to take it [12]. No other external or random factors can enter the equation.

2.2.3. Stop Loss

The same conditions apply to exit the deal that does not succeed, i.e., the system must tell the trader exactly what the size of the risk he must pay in order to know whether the deal will succeed or not, there is always an ideal point at which the possibilities of success of the deal decrease to a large degree, especially with regard to the possibility Profit, so that it would be better at this point to come out with losses and clear the mind to continue working at the next profitability [13].

2.2.4. Time Frame

The trading system can be based on any appropriate time frame, but all entry and exit signals must be based on the same time frame. Trading on one of the time frames does not prevent the use of other time frames as a kind of filtering or filtering [14].

When choosing a method as profitability in determining support and resistances over a specific time frame. The rule says that the trader will take the trades in the direction of the main trend. To determine the direction of the main trend, what will happen in the daily frame? If the trend is bullish then the search will be only for a bounce downs and determines the support according to the profit in a specific time frame and from there the purchase is made. Conversely, if the trend is bearish on the daily, then the search is only for a rebound up and the resistance is determined only according to the profit in the same previous time frame and from there the sale is made [15].

2.2.5. Profits

When an automated trader does his or her best and is able to pay money to a trader at reasonable profit levels when the market provides these funds, every part of the deal is closed from a profit that will contribute to strengthening and strengthening the belief that the trader is a regular and stable winner. In the end, all numbers will improve when belief increases in your ability of the automated trader to have stable profits [16].

3. VOLUME PROFILE

For stock traders, looking at the trading volume are a natural step after looking at the price. It can reveal all kinds of useful information that you can't tell by looking at the price alone. For more details, the larger sizes of the volume sign indicate higher levels of interest and more participants. Just like momentum, it can help you see the power behind the price movement by looking at the volume columns [17]. Since the low volume of transactions generally indicates fewer participants, the levels of interest in the instrument in question are lower. Thus, a lower volume can reveal a weak price movement.

There are two basic definitions of bullish and bearish trading volume:

- Upside trade volume is when its increase by the rise in the price and its decrease is the declining in the price.
- Falling trading volume is when it's increases by decrease in the price and it's declining by the rise of price.

After the emergence of a general downtrend, major traders step in to buy as much currencies or stocks as possible, as the prices below appear to be attractive and there is no more to buy, so the level of price resistance has been removed from the market, then preparations for an upward trend begin [18].

Yet when a bull market appears, big traders step in to search for the largest possible sale of currencies or stocks that they bought from a lower profit-taking point, where they must do their part to resell, and this must be done without setting a low price in front of themselves [19].

If the sale is large until the prices have fallen to the downside, the sale will stop and the price will find a support level, giving the market makers and other traders a greater opportunity to sell at the next upside wave. Once the traders sell most of what they own, the bear market starts forming as it tends to decrease the value of currencies and stocks [20].

These areas, that resist the price, appear on a bearish trend day with a large trading volume and close the day at high points, therefore large traders should start buying to close at an altitude where:

If the close closes lower, we will wait for what happens next day.

If the next day is medium or bullish, this appears and confirms the purchase on the following day.

Trading volume is large. It must contain more buying quantity to sell the next day [21]. This procedure changes the direction of the price movement, or it may cause the price to move in a horizontal position away from the original bearish price trend.

4. RESULTS & DISCUSSIONS

After we studied all trading markets, Binary Option and Forex we found them unprofitable and negative results, on the contrary, we found the American market Nasdaq where the trading is on a daily basis, we get superior profit and amazing results, when buying bitcoin at 4,500 dollars and it is selling when reaches 9,000 dollars, we will get 100% profit. Through which we got acquainted with all the available strategies on technical analysis and volume profile, we reached the right way to buy and sell and we were able to develop a strategy using indicators and trading techniques. The (Figure 3) below summarizes what we came up with:

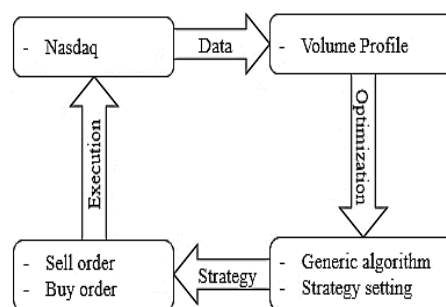


Figure 3. The result of the experiment

On the stock markets, after having an order book, operations are extremely fast, it will be impossible to control it by humans. That's why it's absolutely to use a trading algorithm. It is a technology that suck out the financial market through which we can import billions of dollars through a computer program.

We are going to give the most powerful indicator in the MetaTrader trading platform, there are the standard Fibonacci pivot points formula to calculate the different support and resistance levels:

$$R_1 = pp + ((High - Low) \times 0.382)$$

$$R_2 = pp + ((High - Low) \times 0.618)$$

$$R_3 = pp + ((High - Low) \times 1.000)$$

$$pp = (\text{High} + \text{Low} + \text{Medium})/3$$

$$S_1 = pp - ((\text{High} - \text{Low}) \times 0.382)$$

$$S_2 = pp - ((\text{High} - \text{Low}) \times 0.618)$$

$$S_3 = pp - ((\text{High} - \text{Low}) \times 1.000)$$

where, pp is the pivot point, R_1 is the first line of resistance, R_2 is the second line of resistance, R_3 is the third line of resistance, S_1 is the first line of the support, S_2 is the second line of the support and S_3 is the third line of the support.

It has become clear that the future of countries in the field of E-commerce begins with launching a platform for trading for all raw materials. In other words, countries can sell their raw materials in a 100% internal market. The way to anticipate after the movement in the financial market is a technical analysis that can be sold to newspapers or the media or is in fact general trading.

What we have in this study is to know where the big traders meet. In other ways, it is not what the market will do that counts, but what matters is what the trading algorithms will do, since today 90% of trading operations are generated by trading algorithms, there is a default indicator in the MetaTrader trading platform, one of the most powerful indicators in the world. we have traced this indicator and we will see what will do in (Figure 4) shows us the progress.



Figure 4. The Trading Indicator Result

- When the graph curve breaks the first level, there is more than 90% to go to the second level.
- When the market is going to break 61.8 with force, we will see 100 immediately and when the market will stay more than 2 hours between 61.8 and 100 then the market will probably go to 161.8.
- When the market will stay more than 4 hours above this resistance (from 161.8), then we can expect a big rise in market more than 261.8, in this case we must leave market immediately because after it will have a strong descent.

As already explained, most traders prefer to use the trend lines method, it is true that it has advantages, but our proposed method is the most powerful because with:

- There are no errors in the entry criteria
- Have a vision of all the support / resistance lines
- There are no emotions involved

Finally, it became clear that we were able to clarify that the way to anticipate the movement of the financial market and then we do a technical analysis. It has become

a traditional business, and it has become necessary to renew or rather find modern means and mechanisms in line with the market requirements for trading.

We have in this study is knowing where people get it and what matters is not what the market will do, which matters what the trading algorithms will do, then that today 90% of trading operations are generated by trading algorithms.

Lately, in the stock markets, after having the order book, the operations are extremely fast and it is no longer to wear human, so it is necessary to use a trading algorithm.

6. CONCLUSIONS

To overcome the legal problems posed by financial transactions in cryptocurrencies, and avoid their risks and protect the interests of the state and the interests of the consumer, achieving this goal is possible by setting a set of technical procedures and enacting legislative texts to keep pace with developments in this field.

In this context, we propose at the outset, to set up a system of licensing and registration that allows creation of platforms for trading in cryptocurrencies, while subjecting contracts that use it to monitoring by central bank or by a financial transactions processing unit.

In the legislative part, we suggest placing restraining textual texts on the secret practice of cryptocurrency exchange activity without observing the rules of registration and licensing, and amending the requirements related to combating money laundering, by making contracts that carry out cryptocurrency exchange activity within the list of persons subject to it, and obligating them with vigilance duties and declaring suspicion to Financial Information Processing Unit.

In the aspect related to the protection of state rights and consumer protection, this requires defining the tax framework to which activities related to cryptocurrencies are subject, and setting legal requirements to protect the consumer and dealers in these cryptocurrencies, which may expose them to fraud and deception.

REFERENCES

- [1] Kh. Abouloula, B. El Habil, S. Krit, "Money Management Limits to Trade by Robot Trader for Automatic Trading", International Journal of Engineering, Science and Mathematics, Vol. 7, Issue 3, pp. 195-206, March 2018.
- [2] Kh. Abouloula, B. El Habil, S. Krit, "Using a Robot Trader for Automatic Trading", International Conference on Engineering (MIS 2018), Altinbas University, Istanbul, Turkey, June 19-21, 2018.
- [3] J.J. Murphy, "Technical Analysis of Financial Markets: A Comprehensive Guide to Trading Methods and Applications (2nd Ed)", New York Inst. of Finance, New York, 1999.
- [4] A. Ghezlbash, F. Keynia, M. Mozaffari Legha, "A New Intelligent Method Based on Neural Network for Stock Price Index Prediction", International Journal on Technical and Physical Problems of Engineering (IJTPE), Issue 19, Vol. 6, No. 2, pp. 24-30, June 2014.

[5] N. Metawa, M. Elhoseny, A. Hassanien, K. Hassan, "Expert Systems in Finance: Smart Financial Applications in Big Data Environments", 1st Edition, Taylor and Francis, 2019.

[6] Kh. Muhammad, S. Khan, M. Elhoseny, S.H. Ahmed, S.W. Baik, "Efficient Fire Detection for Uncertain Surveillance Environment", IEEE Transactions on Industrial Informatics, Issue 5, Vol. 15, pp. 3113-3122, 5 February 2010.

[7] M. Elhoseny, A.E. Hassanien, "Dynamic Wireless Sensor Networks: New Directions for Smart Technologies", Studies in Systems, Decision and Control, Springer, 2018.

[8] Kh. Abouloula, S. Krit, "Pattern to Build a Robust Trend Indicator for Automated Trading", Taylor and Francis, 10 May 2019.

[9] I. Ghazi, A. Abdollahi, "Cost-Based Unit Commitment Considering Demand-Side Resources with Harmony Search Algorithm", International Journal on Technical and Physical Problems of Engineering (IJTPE), Issue 26, Vol. 18, No. 1, pp. 7-16, March 2016.

[10] A.E. Hassanien, M. Elhoseny, "Cybersecurity and Secure Information Systems: Challenges and Solutions in Smart Environments", Advanced Sciences and Technologies for Security Applications, Springer, 2019.

[11] U.A. Muller, M.M. Dacorogna, R.B. Olsen, O.V. Pictet, M. Schworz, C. Morgengegg, "Statistical Study of Foreign Exchange Rates, Empirical Evidence of Price Change Law and Intraday Analysis", Journal of Banking and Finance, Vol. 14, Issue 6, 1990.

[12] A.A. Kirilenko, A.W. Lo, "Moore's Law versus Murphy's Law: Algorithmic Trading and its Discontents", Journal of Economic Perspectives, Vol. 27, No. 2, Spring 2013.

[13] S. Athey, "Beyond Prediction: Using Big Data for Policy Problems", Science, Vol. 355, Issue 6324, pp. 483-485, 3 February 2017.

[14] Ch. Lee, B. Mucklow, M. Ready, "Spreads, Depths, and Impact of Earnings Information: An Intraday Analysis", The Review of Financial Studies, Vol. 6, No. 2, pp. 345-374, 1993.

[15] J. Deng, S. Wu, K. Sun, "Comparison of RIP, OSPF and EIGRP Routing Protocols Based on OPNET", ENSC 427, Communication Networks, Spring 2014.

[16] J. Blumberg, "We Need to Shut Bitcoin and All Other Cryptocurrencies Down. Here's Why", March 2018, <https://www.forbes.com/sites/jasonbloomberg/2018/03/10/we-need-to-shut-bitcoin-and-all-other-cryptocurrencies-down-heres-why/#1dbed32b1bca>.

[17] R. Bollen, "The Legal Status of Online Currencies: Are Bitcoins the Future?", Journal of Banking and Finance Law and Practice, p. 38, 2013.

[18] FATF Report, "Virtual Currencies - Key Definitions and Potential AML/CFT Risks", June 2014, <http://www.fatf-gafi.org/Virtual-currency-key-definitions-and-potential-aml-cft-risks.pdf>.

[19] N.M. Kaplanov, "Nerdy Money: Bitcoin, the Private Digital Currency, and Case Against its Regulation", SSRN Electronic Journal, Vol. 25, No. 1, p. 46, 2012.

[20] R.M. Bratspies, "Cryptocurrencies and the Myth of the Trustless Transaction", p. 49, March 2018, <https://ssrn.com/abstract=3141605>.

[21] S. Olnes, J. Ubacht, M. Janssen, "Blockchain in Government: Benefits and Implications of Distributed Ledger Technology for Information Sharing", Gov. Inf. Q., Vol. 34, pp. 355-364, 2017.

BIOGRAPHIES



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