Williams'% R ability to test optimal investment decision-making

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Abstract

Williams% R is a simple dynamic indicator, but it is useful in terms of stock movement and is used to determine the sale and purchase cases of the financial asset, and to determine the possible points of the coup, and investors can make comprehensive expectations for future price movements based on past price movements and make trading decisions using technical analysis techniques, The research problem revolves around the ability of Williams% R to determine the points of oversold and overbought, The research aims to test the knowledge of the Williams% R indicator in determining the times of buying and selling and investment decision-making, And the daily historical data for the Metal Industries and Bicycles shares were used for the period from 1/1 / 2019-31 / 12/2019, and the research concluded that Williams% R helps the investors in the financial market to make the best investment decision.

Keywords: Technical Analysis, Technical Analysis Techniques, Timing, Investment Decision, Williams% R

المستخلص

Williams %R هو مؤشر ديناميكي بسيط ، لكنه مفيد من حيث حركة الأسهم ويستخدم لتحديد حالات بيع وشراء االموجود المالي ، وتحديد النقاط المحتملة للانقلاب ، ويمكن للمستثمرين وضع توقعات شاملة بشأن تحركات الأسعار المستقبلية بناءً على تحركات الأسعار السابقة واتخاذ قرارات التداول باستخدام تقنيات التحليل الفني ، وتدور مشكلة البحث حول قدرة Williams %R على تحديد نقاط ذروة البيع والشراء ، ويهدف البحث إلى اختبار معرفة مؤشر Williams %R في تحديد أوقات الشراء والبيع واتخاذ القرار الاستثماري ، واستخدمت البيانات التاريخية اليومية لأسهم الصناعات المعدنية والدراجات للفترة من 1/1 / 2019− 31 / 2019/12 ، وخلص البحث إلى أن Williams %Rيساعد المستثمرين في السوق المالية على اتخاذ أفضل قرار استثماري.

Introduction

Investment and capital accumulation play an essential role in a country's economic development. This importance is seen in capitalist countries. There is no doubt that the stock market is one of the best centres for attracting small capitals and operating them to develop companies. Investors in the stock market want to know the best time to trade to get the maximum return possible; this timing information can only be obtained if there is an awareness of the stock of capital in the future. This awareness requires predicting future tools. Technical analysis and smart systems are the most common prediction methods used in the financial field. The Williams% R index is a dynamic technical index, which determines whether the market is overbought / bought, as it helps traders read and understand charts, and then determines the future direction of stock prices in the financial market and thus measures the change in them. Hence, the research focused on knowing the effectiveness and role of technical analysis using the Williams% R indicator in making the investment decision and the correct timing.

Research Methodology

Research problem

The technical analysis is based on anticipating the future development of the prices of financial assets based on an analysis of past results, so the primary task for any trader is to identify the profitable technical indicators and use them with the financial aid to invest in the immediate research problem crystallizes in the possibility of technical analysis tools, especially the Williams% R indicator in determining points of oversold and overbought and the chance of making a sound investment decision, To take note of the aspects of the research topic and clarify the contents of the problem, the following questions were raised.

1- What are the implications of the stock market (stock exchange)?
2- Can investors rely on the outputs of technical analysis to make a sound investment decision?

Research hypothesis

Based on the above research methodology and precisely the research problem, an idea has been formulated that:

"The Williams% R is an appropriate tool for making investment decisions about buying and selling in the financial market."

Research importance

The importance of the research is embodied through clarification of the foundations of technical analysis and the most important strengths that help the investor to achieve alignment between the returns and risks of the investments he intends to enter into, as well as being an attempt to facilitate the decision-making process by the investor through its use of one of the technical analysis techniques that are appropriate to Its requirements reaching its goals and deciding on an investment

Research objective

The research aims mainly to shed light on the techniques of technical analysis used in the study of the movement and prices of shares and thus become a guide for dealers in the Iraqi market for securities, through testing the method that can be used to determine the claims or the appropriate sector to enter into investing,

The Research Sample And its Research Tools

The Metal Industries and Bicycles Company, one of the joint-stock companies listed in the Iraq Stock Exchange, was chosen for the period from (1/1/2019) _ (12/31/2019). Of the companies with the highest trading volume, this research relied on historical daily closing stock prices.

Research Methodology

The research relied on the inductive approach: in explaining and studying general and basic concepts related to the subject of the study, and in particular, was concerned with clarifying images related to indicators of technical analysis; it also depended on the analytical method: the technical analysis method was used by applying the Williams% R index to forecast future prices for stocks on the Iraq Stock Exchange

First: The Concept of Technical Analysis

Technical analysis is one of the most used tools in the financial markets. It spread more widely with technological progress in information technology and its integration with the world of finance and business technical analysis is defined as the process of predicting the future direction of prices or market indicators through studying the historical data (Zaid, 2015:104); the roots of technical analysis can be traced back to the nineteenth-century Japanese rice merchants and Dutch markets in 1700; however, they were adopted by Charles Dow, between 1900 and 1902 where he wrote 255 editorials in The Wall Street Journal, In his Dow theory, Dow mentioned that there are three

"movements" or "fluctuations" in the market Moreover, the market has three first movement trends, an accumulation phase when insiders want to buy shares, but trades are small about total equity, so the price is barely The second stage, the absorption stage, is affected when the public realizes the value of a share and the rapid price rise The third stage, the distribution stage, the investors begin to distribute (sell) their stakes in the markets (Ekman, 2017:5-6).

Second: - The philosophy of technical analysis

Technical analysis is based on several assumptions known as the philosophy of technical analysis, and are represented by the following points: (Fayhan, 2018:155)

1- The market value of the security is determined in light of the interaction of supply and demand forces.

2- Several factors control supply and demand, including rational and non-rational.

3-Prices move in specific directions and paths, and they tend to continue in the same order and not change it.

4-the change in the relationship of supply and demand leads to a change in the direction of prices, and we notice changes sooner or later in the movement of the market without the need to know the reasons for this

5-The market gives weight to each of the variables that govern the forces of supply and demand while ignoring small fluctuations

Third: - Technical indicators in the stock market

The technical analysis evaluates securities through an evaluation of previous stock prices and their volume resulting from market activity, based on chart patterns, technical indicators, and oscillators, as the technical analysts' exclusive use of historical prices and the size of the data is what separates them from the leading analysts (Drakopoulou, 2015:4)

The technical index is a series of data points derived by applying a formula to the price data of a security. Price data includes any combination of opening, rising, falling, or closing price over some time. The indicators perform three primary functions: alert, confirm, and forecast (Samant, 2015:1036). Technical analysis consists of a set of hands, oscillators, and chart patterns that aims to predict the financial presence and price movements through historical price information (Michniuk, 2017:6)

The expectations of the stock market and determining the direction is one of the important things that both financial professionals and researchers seek because almost everyone has a certain level of interest to be able to choose the right stocks and the right time to buy/sell stocks, and the most prominent indicators used in technical analysis can be included As follows:-

1-Moving Average Convergence Divergence (MACD)

It is a trend-tracking momentum indicator that shows the relationship between two moving average prices, calculated by subtracting the Asian Exponential Moving Average for 26 days from the EMA for 12 days. Then a nine-day EMA is drawn from the MACD, called the "signal line," on top of the MACD, and acts as a catalyst for buy and sell signals (Ivanoviski et al., 2017:108). The common technical strategy associated with this indicator states that the trader is willing to buy When the MACD values rise above the signal line and sell when the opposite situation occurs. According to the following mathematical formula: (Macedo, 2018:34).

MACD=26 EMA-12 EMA

2- Rate of change (ROC)

ROC measures the rate of change between the current price and the price for the number of days in the past, It helps in determining the exaggeration and excessive selling or buying of the financial asset, and it is also useful in determining the trend reversal, ROC values may be positive, negative or zero, according to the following mathematical formula

Change rate = last price/price of the number of days past.

3-Moving average

(MA) is one of the most widespread technical analysis tools and used by analysts as it is one of the methods used to pave and settle a specific time series. The main benefit of it is to get rid of strong vibrations that may exist in it due to occasional changes and periodic or seasonal fluctuations so that its general trend is evident. Up or down. What takes on the moving average is that it is a non-leader of the price but rather lagging behind it, and it informs us of the news after it has occurred. Prices are the basis for calculating the Average, and as a result of the price change, the average changes and most technical analysts use closing prices to calculate averages, but it can be calculated with other prices and moving averages are counted; reinforcement indicators are usually used after combining them with other technical indicators, and the periods usually used to calculate moving averages are 20 (30 days, 30 days, 50 days, 100 days), and the most important is 200 days) and the shorter the time range of the moving average, the greater the curve of the average curve, It has become more sensitive to price changes compared to the long period; generally, it is preferred to use moving averages when the market or stock concerned is in a strong up or downtrend and it is usually ineffective when the market or stock concerned is volatile, It will likely lead to misleading buying and selling signals if Used for volatile market or stock (Zaid, 2015: 106),

4-Stochastic indicator

The stochastic index is one of the indicators of the oscillation momentum set by George Lane. The idea of the indicator is based on the way of comparison to the current price with a specific price range for a certain period; the index tracks the momentum and not the price because the momentum changes its direction before the price changes, and thus gives a signal earlier than any other price After the index (Naved & Srivastava, 2015:925), this indicator is also used to determine the oversold / buy where this indicator consists of two lines: the k% line and the D% line, and they can be calculated through the following mathematical formula: - (Ekman, 2017,19),

$$\%K=[C-L14]/[H14-L14]*\%100$$

$$\%D=3SMA\%K$$

Where:-

C = Closing price for the current day.

H14 = Highest closing price in 14 days.

L14 = lowest closing price during the same period.

SMA = Simple Moving Average.

5-Relative strength Index

An indicator is based on comparing the rising strength with the downward strength for a specified period and converting the results into numbers that fluctuate (0-100). This indicator is significant for speculators because it depends on the calculation of the average closing prices that have risen, and divided them by the average closing prices that decreased for the same period and take the speculator for 14 days, while the investor takes costs for a more extended period (Naeem, Abdul-Ahad, 2019:184), and invented this indicator from Before Wells Wilde, it is an analytical tool that helps investors to form a correct mix of financial instruments to build an investment portfolio that reduces the risks to a minimum and increases the returns to fit the size of the risks (Bhargavi et al., 2017:8926), so the indicator is used to detect buying saturation and selling saturation (Naeem, Abdul-Ahad, 2019:184), and is calculated as follows: -

RSI=100-100/(1+RS)

Where RS is the sum of the average gains divided by the average losses .

RSI is overbought when over 70 levels and oversold when below 30. These traditional levels can also be adjusted to suit the demand for securities analysis better; an exaggerated increase to 80 or a decrease in oversold to 20 will reduce the number of readings for overbought and overbought (Pinakin & Manubhai, 2015:237), In general, the researcher sees that when the index crosses the 70 lines, it is considered a sell signal, while when the queue exceeds 30 indicates a buy signal.

6- Bollinger Bands

John Bollinger developed Bollinger Bands The indicator consists of three lines, the middle range is a simple Moving Average (generally 20 periods) of the typical price (TP), and the upper and lower ranges are standard deviations (generally 2) above and below the middle range (SMA), the ranges widen and narrow when volatility is The price is higher or lower respectively Bollinger Bands does not Generate buy or sell signals it is an indication of the conditions of overbought or oversold when the price is near the upper or lower band it indicates that there may be a trend reversal the middle band becomes the level of support or resistance, The upper and lower bands can also be interpreted as price targets When the price bounces from the lower bar and crosses the middle bar then the upper band becomes the price target (Vaiz & Ramaswami, 2016:211) Standard calculation for Bollinger tapes is done according

The following formula: -

UB=SMA+STDV(P1….Pn).

SMA=(P1+P2+P3….Pn).

LB=SMA-STDEV(P1….Pn).

The calculation of the upper and lower range is based on the standard deviation of the price in the period specified for the moving average (öztürk, 2015:18), and the contents are defined as price targets,

The researcher believes that the indicator is a directional indicator that does not give buy and sell signals correctly, so it is preferred to combine it with other hands to obtain more accurate signals.

7- Williams Index (% R)

Larry Williams developed the index It is very similar to RSI and Stochastic, so it should not be used in conjunction with them, It is used to determine the overbought and oversold levels, and the appropriate entry and exit points, The default settings for Williams% R is 14 periods that can be days, weeks, months, or a daily timeframe, The value of the indicator is moving in a range of (0-100) and costs less than - 80 means that the asset has been overly sold and its value may increase, and values greater than -20 mean that the investment was excessively purchased and that its value will likely decrease, And some technical analysts prefer to use% R with the settings to - 50 points up / down, instead of -80 / -20, and the index is calculated according to the following formula: - (Vaiz & Ramaswami, 2016:210-211)

%R= - (high P-CP/high P-Low P)*100

High P = The highest price reached by the stock during a specific period.

Low P = The lowest price was reached by the stock during the same period.

CP = Closing price for the current day.

The researcher believes that the only difference between% R and Stochastic is that% R has a scale upside down. In contrast, Stochastic has internal homogeneity, to show the indicator in this way upside down, places a symbol (-) before the Williams range values (for example, -30%). One must ignore a minus symbol when performing the analysis.

Analytical Side

The Role of Technical Analysis in Making The Decision to Buy And Sell in The Shares of Companies Under Study

The technical analysis index "Williams% R" index has been applied to the shares of the company under study based on the following limits: -

Study Sample: The Metal and Bicycle Industries Company.

The period of study: 2019-2019 / 12 / 2019-1 / 1/2019

- Charts of the shares of the company under study, using the EXCEL program.

First: - Calculating the value of the William% R index in the Metal Industries and Bicycles company

The EXCEL program was used to extract the values of the indicator% R, where historical closing prices for the shares of the Metal Industries and Bicycles company were obtained from the data published on the Iraq Stock Exchange, and the following formula was applied: -

% R = - (high P-CP / high P-Low P) * 100

The following table shows the results of applying the equation:

Table .1 Williams% R Index Va

%R	Date	%R	Date	%R	Date	%R	Date
-47.826	22/10/2019	-60	01/08/2019	-74.074	20/05/2019		06/03/2019
-56.522	23/10/2019	-60	04/08/2019	-62.963	21/05/2019		07/03/2019
-4.348	24/10/2019	-56.522	05/08/2019	-60	22/05/2019		11/03/2019
-13.043	27/10/2019	-43.478	06/08/2019	-58.333	23/05/2019		12/03/2019
-13.043	28/10/2019	-26.087	07/08/2019	-62.5	26/05/2019		14/03/2019
-26.667	29/10/2019	0	08/08/2019	-100	27/05/2019		17/03/2019
-7.143	31/10/2019	-12.5	18/08/2019	-66.667	28/05/2019		18/03/2019
-4.762	03/11/2019	-17.5	19/08/2019	-62.5	29/05/2019		19/03/2019
-23.81	04/11/2019	-15	20/08/2019	-87.5	30/05/2019		20/03/2019
-23.81	05/11/2019	-25	21/08/2019	-80	02/06/2019		24/03/2019
-23.81	06/11/2019	-25	22/08/2019	-100	03/06/2019		25/03/2019
-23.81	07/11/2019	-25	25/08/2019	-100	10/06/2019		26/03/2019
-23.81	10/11/2019	-37.143	26/08/2019	-88.235	11/06/2019		27/03/2019
-50	12/11/2019	-26.471	27/08/2019	-88.235	12/06/2019	-32.813	28/03/2019
-50	13/11/2019	-30	28/08/2019	-76.471	13/06/2019	-26.563	01/04/2019
-47.368	14/11/2019	-36.667	01/09/2019	0	16/06/2019	-34.884	03/04/2019
-33.333	17/11/2019	-30	02/09/2019	0	17/06/2019	-48.649	04/04/2019
-33.333	18/11/2019	-30	03/09/2019	-36.364	18/06/2019	-56.758	07/04/2019
-71.429	19/11/2019	-40	04/09/2019	-31.818	19/06/2019	-54.054	08/04/2019
-100	20/11/2019	-60	05/09/2019	-54.545	20/06/2019	-48	09/04/2019
-50	21/11/2019	0	08/09/2019	-45.455	23/06/2019	-70	10/04/2019
0	24/11/2019	0	09/09/2019	-59.091	24/06/2019	-52.941	11/04/2019
0	25/11/2019	0	11/09/2019	-34.375	25/06/2019	-58.824	14/04/2019
-14.286	26/11/2019	-32	19/09/2019	-34.375	26/06/2019	-85.714	15/04/2019
-28.571	27/11/2019	0	22/09/2019	-37.5	27/06/2019	-85.714	16/04/2019
-28.571	28/11/2019	0	23/09/2019	-40	02/07/2019	-88.235	18/04/2019
0	01/12/2019	0	24/09/2019	-40	04/07/2019	-76.471	21/04/2019
0	03/12/2019	-16.279	25/09/2019	-44.828	07/07/2019	-94.118	22/04/2019
-7.692	04/12/2019	-30.233	26/09/2019	-44.828	08/07/2019	-100	23/04/2019
-42.029	05/12/2019	-34.118	29/09/2019	-86.667	10/07/2019	-84.211	24/04/2019
-42.029	08/12/2019	-41.176	30/09/2019	-66.667	11/07/2019	-100	25/04/2019
-27.536	09/12/2019	-41.667	01/10/2019	-75	17/07/2019	-100	28/04/2019
-14.493	11/12/2019	-41.667	02/10/2019	-87.5	18/07/2019	-100	29/04/2019
-17.188	12/12/2019	-45.679	09/10/2019	-100	21/07/2019	-100	30/04/2019
-21.875	15/12/2019	-35.526	10/10/2019	-100	22/07/2019	-100	02/05/2019
-21.875	16/12/2019	-41.667	13/10/2019	-100	23/07/2019	-100	05/05/2019
-23.438	17/12/2019	-41.667	14/10/2019	-73.333	24/07/2019	-52.941	06/05/2019
-28.125	18/12/2019	-50	15/10/2019	-93.333	25/07/2019	-100	08/05/2019
-32.813	19/12/2019	-71.111	16/10/2019	-100	28/07/2019	-100	12/05/2019
-21.875	23/12/2019	-66.667	17/10/2019	-93.75	29/07/2019	-93.333	13/05/2019
-30.435	24/12/2019	-77.778	20/10/2019	-100	30/07/2019	-100	16/05/2019
-35.294	25/12/2019	-59.375	21/10/2019	-80	31/07/2019	-82.143	19/05/2019

Source: Prepared by researchers using releases from the Iraq Stock Exchange

The table above shows the values of the Williams% R index in the Metal and Bicycle Industries Company, and the graph of the indicator values is represented as below:

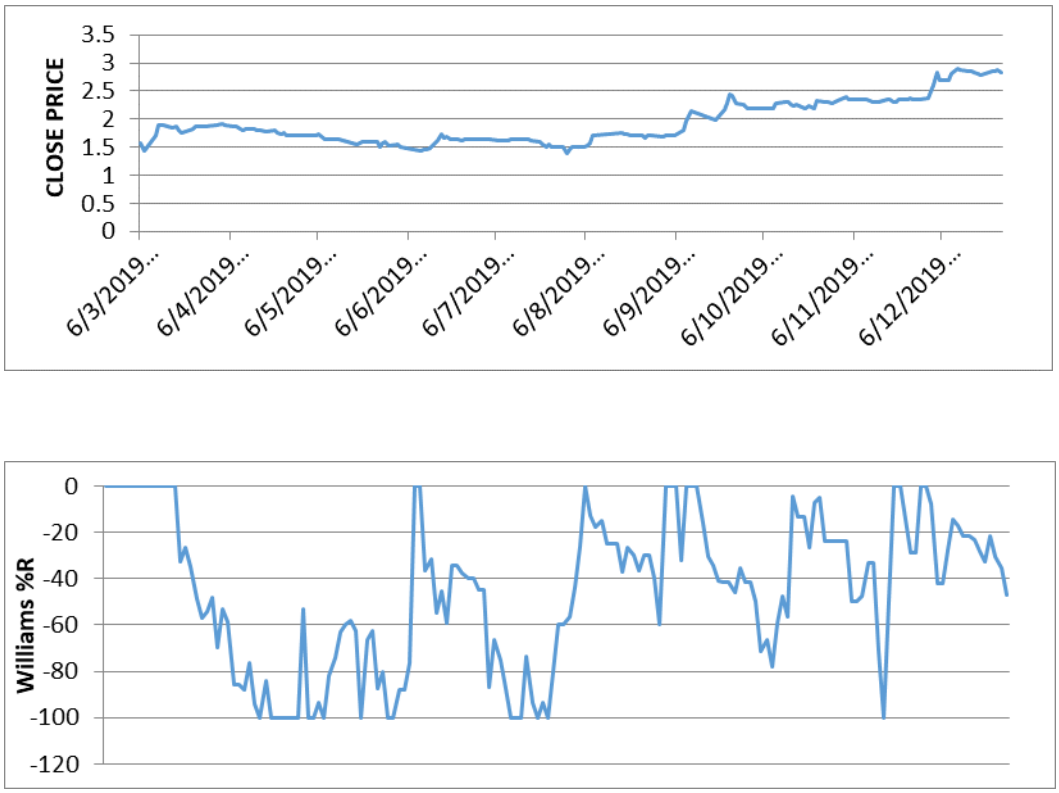

Figure 1.% R index for 1/1/2019-31-21-2019

Source: Prepared by researchers

Second: - Analysis of the Williams% R index

Figure (1) illustrates the emergence of several sells and buy signals, as follows: -

During the first half of the year 2019, successive buying signals appeared as a result of the value of the% R index reaching levels below 80% - but at various periods, the period from 15/4/2019 - 18/4/2019 indicated that the index decreased to levels that exceeded the% line 80- To show the generation of a purchase signal, the best of which was on 04/18/2019, where R% was at its lowest level during this period to equal to (-88.235) and at prices similar to (1.77), and the investor must seize the investment opportunity and complete the purchases before starting The price is to rise through a review of the price movement, it has already been observed that the price has increased after this date to reach(1,79)

Either the other signal appeared during the period 4/22/2019-5/5/2019 where the index again crossed the 80% line - to indicate the generation of a new buy signal, and this shows that the bulls are controlling the market, the trend is up, and the time is right to complete the purchase of this Prices will be facing up (in the event of an increase), because a rise in prices offsets every increase in demand; therefore, it is an early indication of buying and returning to price movements, it was found to be equal to)1.7(

The buying signals rolled, where the first signal was during the period 5/8/2019-19/5/2019 and the second was during the period 5/30/2019-12/06/2019 and the third was on 7/10/2019, where the index exceeded the value of 80% - Foreshadow the existence of a buy signal during these consecutive periods, as the best point in the first signal was on 19/5/2019 for% R to reach its highest level (-82.143) at a price level equal to (1.55), Either the second indication was the best buying point on 6/10/2019, where the value of the index was similar to (100-), and the price level is equivalent to (1.43), at this point, it is necessary to take advantage of the opportunity and start the

buying process before the price bounces and start to rise, and by reviewing the movement Prices It is noted that prices have already begun to rise after this date, As for the third signal, it has% R equal to (-86.66) and the price level is equal to)1.62(

Then the second half of the year 2019 started with buy signals as well. The signs were generated as a result of the index's decline to levels above 80% level - the first signal was during the period 7/17/2019 - 23/7/2019, where the prices ranged between (1.5-1.62), The best point-point of purchase was on 23/7/2019 when the index reached the level (-100), and the price level is high up to (1.5). Here it must begin to complete the buying operations and take advantage of the investment opportunity before the prices start to reflect on its current location and announce the start of a new cycle towards Height. The second indication was during the period 7/25/2019-31/7/2019, and prices ranged between (1.4-1.5), and the best point-point of purchase was formed on 7/30/2019 as a result of the value of R% reaching its highest level during this period to get (100-) The price level is equal to (1.4). Here, the buying operations are started before the price reverses from its current position, to announce a new cycle towards the rise.

Then it was observed that the value of the Williams Index increased to levels above 20% - indicating the generation of selling signals, as the first signal was during the period 18/8/2019-20/8/2019. Prices during this period ranged between (1.73-1.75) and thus was better point-point of sale on August 18, 2019, when the index reached its lowest level to equal (-12.5), and the price level is equivalent to (1.75). After that, another selling signal was recorded as a result of the rise in the index to its highest levels, as it reached (16.279) on 9/25/2019 at a price level equal to (2.41) indicating the presence of overbought and reaching the overbought and the sale must be made before the prices start to decrease and create a cycle New towards decline, and the third indication was during the period 10/24/2019-28/10/2019; hence, the best selling point was on 10/24/2019, as the index reached its highest levels during this period to call (4.348-) at a level of prices equal to(2.32)

During the last quarter of the year, successive selling signals appeared as a result of the increase in the value of the indicator% R to levels above 20% - to foreshadow the generation of a new selling signal, so the first signal was during the period from 10/31/2019 - 3/11/2019, where prices ranged Between (2.32-2.39), and the second signal was on 11/26/2019, and the value of% R reached (-14.286) at a price level equal to (2.36), either the third signal was on 4/12/2019, and the index reached its highest level Not equal to (7.692-) when the closing price is equal to (2.82), either the last signal was generated during the period 12/11 / 2019-12 / 12/2019 where the prices ranged between ;(2.89 – 2.88)

Third: - Proving the research hypothesis

By tracking the chart in Figure 1, several peaks and lows formed and the index reached levels below 80% - which is an indication of the presence of a buy signal, and the index also rises to levels below 20% - this means that there is a sell signal, and a take Buying and selling decisions according to the Williams% R index and this proves the validity of the research hypothesis that considers the Williams% R indicator an appropriate tool for determining the times of buying and selling and then making the right investment decision, as well as the historical arrow movement was followed through graphical representation and thus the indicator is considered a tool Important and appropriate to use and make the right investment decision to buy and sell stocks on the Iraq Stock Exchange;

Conclusions

1-Williams% R helps financial market investors make the best investment decision.

2- Williams% R is an essential and useful tool, despite its simplicity and ease in applying its model.

3-The ability of the Williams% R indicator to predict in advance the direction of stock prices and their future consequences .

4- several peaks and lows formed and the index reached levels below 80% - which is an indication of the presence of a buy signal, and the index also rises to levels below 20% - this means that there is a sell signal, and a take Buying and selling decisions according to the Williams% R index .

5- The signals generated were in the (%R) index Late and indicates the existence of the sale, The index must be integrated with other indicators that are commensurate with the requirements and preferences of the investor, And to be able to avoid harmful signals that can cause losses or low returns.

Recommendations

1-Paying more attention to the subject of technical analysis, academically and practically, as one of the vital topics, by providing research and studies that increase knowledge in this field.

2-In spite of the accuracy and clarity of the techniques used in technical analysis, whether they are complicated or straightforward installation, it is preferable to use more than one indicator and to be supported by graphs to increase accuracy and credibility in the results, as is the case in the hand used in the research in being an indicator is not ideal nor It can be used as a standalone indicator. It must be combined with another indicator to outweigh negative results.

3- The necessity of developing the informatics department in the financial market, so that it is the responsibility of conducting technical and fundamental analyses and providing customers in the financial market with evidence periodically and continuously in the short term with how much information is represented by the movement of the market and stock prices.

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