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TEST FINANCIAL MARKET EFFICIENCY USING THE PATH ANALYSIS MODULES – CARCHAN APPLIED STUDY IN IRAQ STOCK EXCHANGE

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Abstract:

The present study aims to investigate aims to test the efficiency of the Iraq Stock Exchange within the framework of the random walk model, and the market index (ISX60) was chosen to verify the extent of the reflection of historical information and data on the stock returns of companies listed on the stock market. This study was conducted using a sample consisting of (239) views of the daily closing index of the Iraqi stock market during the period from (2020\1\2) to (2021\3\31).Judging the existence of random yields as a test: GARCH model, the cumulative effect test by linear modeling.

The results of the statistical tests used in the study showed that the time series of stock returns in the Iraqi stock market follows a random walk model, which makes it difficult to predict its future movements based on the data of the previous period, and this shows us that the Iraqi stock market is efficient At the weak level.

1-Introduction:

The development of economic activity, to presence of need at large financial markets, said that the stock market is one of the most important investment fields that allow all investors to achieve profits, The potential impact of testing efficiency is thus the key driver of world output and welfare, and this requires the availability of adequate information on the stocks in which the market is asylum. In particular the prices of stock securities are destroyed from one time. The determination of the stock market value requires recognition of the returns and risk, and this estimate is based on the future prospects for this papers and the outcome of the expectations is being made available on the available information. The relationship between information and value market is the basis of financial efficiency. Where the overall market is the market where any of dealers can achieve unusual returns any returns over the average of return on market. Accordingly, efficient securities market can be described as the market that is in a constant balance, where stock prices are equally equal to their real value and randomly move without the possibility of controlling. The stock market cannot be considered as unless unchanged in stock prices are always reflected in the information available. When condition is achieved, market participants cannot achieve unusual returns, greater than those that can be obtained by retaining a ranking rarely from individual shared shares with similar risks. The market efficiency hypothesis is related to the concept of the random of the random of the randomly, which is supposed to have a series of prices where all subsequent price changes represent random deviations from previous prices. The very close price behavior of random walk is the result of necessary for market efficiency, But you cannot conclude that the market (really) is just as long as stock prices track only randomly. Three main formats The efficiency of financial market the efficiency of weak level, the seven-strong efficiency, and efficiency of strong level.

2-Methodology of the study and previous studies:

2-1: The study Problem:

efficiency Financial market indicates that no group of investors should be able to consistently find undervalued or overvalued securities using a pre-defined strategy. Where the literature of rational expectations indicates that there should be very little or no trading in individual stocks under these circumstances, as the efficiency of the financial market is one of the issues that have been raised and continues to raise a wide debate among the parties concerned, as it represents an incentive for investors to increase investment. In the market, the research problem lies in the extent to which it is possible to determine whether the Iraq Stock Exchange follows the random walk model or is it possible for investors to predict stock prices based on historical data for these prices, or in other words, is the Iraq Stock Exchange efficient Weak or not.

2-2: The importance of studying:

In spite of the widely acknowledged value of these concepts, So, The attempt to measure the impact of The Iraq Stock Exchange occupies an important position through which it can play a distinct role by collecting domestic and international savings and circulating them in investment projects that contribute to economic development, as the importance of testing the efficiency of the financial market within the framework of the random walk model is one of the most controversial issues that the stock market dealt with in view of Because it is related to the ability and speed of the market to reflect the necessary information for investors on stock prices, and thus, the ability of investors to achieve extraordinary returns. It is also an indicator of the development of the stock market by testing the efficiency of any market to find out the level of efficiency that this market enjoys, and the development of this level with the development of this market in terms of size, breadth and depth. Therefore, the importance of the study becomes evident by testing the efficiency of the Iraq Stock Exchange within the framework of the random walk model to compare the results of previous studies and to determine the developments that have occurred in the market, as well as using a new test for

the efficiency of the financial market, which is a method of path analysis that has not been used previously in previous studies.

2-3: Objectives of the study:

The researchers examined the significance whether the Iraq Stock Exchange is efficient at the weak level during the period (2020/1/2-2021/3/31). Therefore of this study is also to find out whether the stock returns follow the model Random traffic through use of daily data of returns of daily market closing index, and through use of statistical tests to examine market efficiency.

Accordingly, the objectives of the study can be defined as follows:
- Testing the efficiency of the financial market within the framework of the random walk model of the Iraq Stock Exchange.
- Determine if the stock market follows the random course or not.
- Determine if the market is heading towards increasing efficiency over time or not.

2-4: Hypotheses development:

The research hypotheses, which are developed based on both theoretical literature, and findings from prior empirical studies, are elaborated below
- The first main hypothesis: the time series of stock returns in the Iraq Stock Exchange follows the random walk model.
- The second main hypothesis: There is a statistically significant cumulative effect of stock returns in the time series.

3-Literature review

3-1: Efficient financial market:

One of the assumptions made by Fame is that markets are efficient if all information is included in prices. For example, paying analysts to look for opportunities and risks of some company is of no value because the market has already priced the company reflecting all available information. The second efficiency assumption is that efficient markets do not have any untapped gains from trade. Thus the assignment obtained from efficient markets cannot be improved by increasing utility of one agent without diminishing utility of the other agent (Hens&Rieger,2010:8).The basic idea is that stock prices accurately reflect available information, and respond quickly to new information as soon as it becomes available. Efficient market theory comes in three forms that correspond to different definitions of "available information". The weak version (of the random walk theory) says that prices reflect all information about historical prices. The near-strong formula says that prices reflect all of the information available to the public, and the strong formula asserts that prices reflect all of the information that can be obtained (Brealey et al, 2011:867).Capital market events indicate that the market values of stocks and bonds can fluctuate widely from year to year. Why does this happen? At least part of the answer is that prices change due to the arrival of new information, and investors are reassessing asset values based on that information. Market price behavior has been studied extensively. A question that has received special attention is whether prices adjust quickly and correctly as new information arrives. The market is said to be "efficient" if this is the case. To be more accurate, in an efficient capital market, current market prices fully reflect the information available. By this we mean that based on the available information, there is no reason to believe that the current price is too low or too high(Ross et al,2019:408).Some argue that the stock market is nothing but a form of legal gambling. They argue that stock prices move almost randomly and have no real connection with what is happening in the economy or with the financial results of the companies involved. In the eyes of people who hold this view, big volatility in the market is paid for like greed and fear rather than business fundamentals. The random behavior of stock prices is a sign that the stock market is processing information quickly and efficiently. In fact, economists argue that

a market that integrates all new information quickly and completely is an efficient market(Gitman&Joehnk,2014:331).The efficient markets hypothesis means that the securities will be priced fairly, based on future cash flows, taking into account all information available to investors (Berk et al, 2015:342).Information can be classified as historical, current, or forecast. Only current or historical information is confirmed in its effect on price. The more information is available, the better.

 More informed decisions are likely to be correct, company information is available both inside and outside the organization. It is evident that those within the organization will be better aware of business situation. They have access to sensitive information about future investment projects, contracts under negotiation, upcoming management changes, etc. Additional knowledge will vary according to a person's level of responsibility and their place in the organizational hierarchy (Pike&Neale,2009:34).

- **The financial market efficiency comes in three main forms:**
A.   **Weak Level Efficiency:** The weak level efficiency hypothesis asserts that stock prices in fact reflect all the information that can be obtained by examining market trading data such as price history, trade volume or short-term interest. This version of the hypothesis indicates that trend analysis is not possible (Bodie et al, 2013: 238).The weak figure shows that current asset prices reflect all information contained in past prices and trades. Practical Implication: Investors cannot outperform the market using only historical price and volume data (Brandimarte,2018:400).
B.   **Efficiency at near-strong level:** The near-strong form of EMH confirms that stock prices perfectly reflect all relevant information that investors can obtain from any public source. This means that investors cannot consistently achieve abnormally high returns using publicly available information such as annual reports and other required filings, analyst recommendations, product reviews, etc. To illustrate the idea, suppose you see that a particular company just posted its latest financial results online. I read the report and note that the company reported an unexpected increase in profits in the last quarter. Should you call your broker and buy some stocks? EMH's near-strong figure shows that by the time you download the annual report, read it and call your broker, the market price for the stock has already risen, reflecting the company's latest good news (Gitman&Joehnk,2014:333).
C.   **Efficiency at the strong level:** The third form of financial market efficiency is strong efficiency, according to which it is not possible to achieve high returns depending on any source of information, and even the internal parties of companies cannot benefit from the internal information that they obtain before it is available to the public, because the competition between these The periphery is pushing prices towards equilibrium, which makes it difficult to achieve high (abnormally) returns (Weston&Brigham,2010:571).The robust form of financial market efficiency demonstrates that current market prices reflect all relevant information - even if it is privately owned. The market price reflects the "real" or intrinsic value of a share based on the underlying future cash flows. The implications of such a level of market efficiency are clear: No one can consistently beat the market and earn extraordinary returns. Few would go so far as to say that stock markets are efficient at this level, although investors are often good at predicting what will happen(Pike&Neale,2009: 34).

3-2: Random walk:
The results of Louis Bache let's observation coincided with the results of Karl Pearson's study of random motion in statistics, published in (1905). In that study, Pearson described the random movement as a drunken person. You left it somewhere and want to find it, then you want to find it. You have to go and see it where you left it. This place is an unbiased estimate of where you may find

it at any time in the future. This is because the drunk usually walks adrift once here and there, turning around in a random movement. In the language of (Bachelet's) conclusions, if you enter into a contract at a specific price in the futures market, you want to guess the price at which the commodity will be traded on the date of execution of the contract, then the unbiased guess will be the price at which the deal was previously concluded (Lorie et al,1985:57).The concept of efficient capital markets stemmed from the discovery of an event by chance. In 1953, Maurice Kendall, a British statistician, presented a controversial paper to the Royal Statistical Society on the price behavior of stocks and commodities. Kendall expected to find regular price cycles, but was surprised that they seemed to not exist. Each series appeared to be "lost", as if the godfather of fortune pulled out a random number once a week and added it to the current price to determine the price for the next week. In other words, stock and commodity prices are starting to follow the random walk (Brealey et al,2011:314).Note that price behavior very close to a random walk is a necessary consequence of market efficiency, but you cannot infer that the market is (really) efficient just because stock prices follow an almost random walk. For example, the market will be inefficient if you can find prior knowledge based on some other external signal - for example, whether the sun is shining on a particular day - that will tell you whether the stock price will rise or fall the next day. In this case, stock prices will still follow a random path, but your signal will allow you to outperform EMH. The random walk only indicates that a known late price cannot give this signal (Welch,2009:355).The random flow indicates that the series of stock price movements are independent random variables, and therefore stock price movements in the future period cannot be predicted through past events (Mustafa, 2004: 310).The randomness of the price movement of securities indicates that historical fluctuations in price movement will not be repeated, which means that fluctuations in price movement are completely independent of their previous behavior(Okpara,2010: 57).

4-Research Methodology:

4-1: Data collection and sample study:
The present research focuses on collecting data consists of all the companies listed in the Iraqi stock market. An intentional sample was chosen, represented by the companies listed in the market index, consisting of (60) companies, to be study sample.

4-2: Measurement Instrument:
The prototype was developed by Brook and Burke (2003), who believe that the model is sufficient to detect any concentration of oscillations that may appear in the data. Or Lagged Variance, that is, any unexpected increase or decrease in returns during the current period will lead to an increase in expected volatility during the subsequent period. This model can be expressed by the following equation:

$$h_t = \omega + a\varepsilon^2_{t-1} + \beta h_{t-1}$$

Where h_t is the variance, ω is equal to V_L long-term variance rate, $a\varepsilon^2_{t-1}$ the shock from the previous period measured by the lag period of the residual square (the ARCH term), h_{t-1} the conditional variance of Last period, ω, β, a coefficients to be estimated as $\omega > 0$, $(\beta, a \geq 0)$.

This model considers that stable returns are of the weak degree if the sum of each of β and a is less than one, which express the continuity of volatility, while if the outcome is close to one, this indicates that the market is inefficient, meaning that there is a high continuity in the volatility cluster (Volatility Clustering) and impact of trauma do not disappear quickly.

4-3: Date analysis:

Most One important statistical methods in testing certain hypotheses for causal relationships between a group of variables is by measuring the direct and indirect effect of the independent variable on dependent variable with the mediation of three or more variables. What distinguishes it from other statistical methods is the lack of its mathematical operations. The researcher uses in the study to demonstrate the direct cumulative effect of the quadrants sequentially in the studied series, starting from linear modeling. As the researcher calculates the effect of first quarter in the second quarter, and then calculates the effect of the first quarter in the third quarter with the average of the second quarter to demonstrate the cumulative effect of the first and second quarter in the third, and then calculates the effect of the first quarter in the fourth with the average of the second and third quarters, and then calculates the cumulative effect of first quarter in the second The second is in the third and third in fourth, so if there is no cumulative effect between the quarters in chain, then this is an indication that the chain follows the random walking pattern and vice versa.

4-4: Previous studies:

Previous studies related to financial market efficiency testing:

The researcher was able to obtain many previous studies with aim of identifying the findings reached and to benefit from them to strengthen the theoretical side, and to interpret the results of the applied part. A set of studies were selected, the most important of which were the following:

1.7.1- Study Osayuwu (2012)	Study Title	Testing the Weak Form of Efficient Market Hypothesis in Nigerian Capital Market
	study sample	All securities traded on the Nigerian Stock Exchange Monthly Market Index returns from (2001-2010).
	Statistical methods	Sequential correlation test, data independence test, random price movement test.
	Objectives study	This study aims to test the weak form of the efficient market hypothesis in the Nigerian stock market.
	Results	The sequential correlation result shows that the correlation coefficients did not violate the two-parameter error test. Moreover, Box-Ljung statistic shows that none of the sequential correlation coefficients was significant and Box pierce Q statistics show that the overall significance of the series correlation test was weak while the distribution pattern result shows that stock price movements are nearly normal, hence Nigerian stock market Competent in the weak form.
1.7.2- Study Phan and Zhou (2014)	Study Title	Market efficiency in emerging stock markets
	study sample	Verify the hypothesis of random walking of weekly stock market returns Data are being collected for analysis from July 28, 2000 (1st trading session) to July 28,2013 (market's 13 years running).
	Statistical methods	Autocorrelation Test, Runs Test, and Contrast Ratio Test.
	Objectives study	Investors and researchers are increasingly interested in emerging stock markets. In this paper, we examine whether or not poorly shaped proficiency, which is relatively popular in emerging equity markets, applies to the Vietnamese stock market.
	Results	The poorly performing market hypothesis does not apply to the Vietnamese stock market.
1.7.3- Study	Study Title	TESTING RANDOM WALK HYPOTHESIS FOR ISTANBUL

Tas and Atac (2019)		STOCK EXCHANGE			
	study sample	Participation index through the two tests over a five-year period from 2013 to 2018.			
	Statistical methods	Dickey-Fuller test and Runs test			
	Objectives study	This study investigates the weak efficiency of the Istanbul Stock Exchange (ISE) market through the random walk hypothesis (RWH).			
	Results	Poor market efficiency is justified according to Dickie Fuller test, but not operation test. Whereas Dickie Fuller test results reject random runs in ISE, resulting in poor market efficiency being unjustified; The run-test failed to give specific results regarding market efficiency for the same data set and time period.			
1.7.4- Study Aggarwal (2019)	Study Title	Do bitcoins follow a random walk model?			
	study sample	Market efficiency of Bitcoin's daily returns is analyzed for the time frame (July 2010 through March 2018).			
	Statistical methods	Descriptive statistic test, serial correlation test, unit root test, GARCH test.			
	Objectives study	This study aims to contribute to the current literature examining bitcoin returns within the jurisdiction of financial assets.			
	Results	Strong evidence was found of a market inefficiency characterized by the absence of a random walk model. Market inefficiency is due to presence of asymmetric fluctuations in rallies. More studies are needed to examine the temporal dynamics of Bit coin's returns.			

5-Research Methodology:

Statistical analysis to test market efficiency:

5-1: The GARCH Model Test:
The CARCH test is considered one of the most accurate tests in indicating that the time series follows a random walk or not, as the researcher will test at this stage of the analysis the hypothesis that (the time series of returns follows the random traffic model) and will accept this hypothesis if the outcome of each of the transactions is smaller than The one, but if the outcome of the factors is very close to the correct one or more, then this is evidence that the variance has a high value, which confirms that the time series of returns does not follow the random walk model. The results of applying the (GARCH Test) test to the time series of returns as documented in Table (1) are as follows:

Table (1) Test results of Garch model

Alpha hard limit **A**	Marginal tendency(regression coefficient)β	The outcome of transactions	Researcher comment
0.227	0.480	0.707	The result of the coefficients less than the correct one accepts the hypothesis that (the time series of returns follows the random walk model).

Source: The researcher prepared according to E views v10 results

5-2: Cumulative effect testing by linear modeling:
- **Impact testing by linear modeling of stock returns in the months of January, February and March of (2020):**

Table (2) and Figure (1) indicate that according to the data of linear modeling and the results of path analysis mediated by the Amos program, there is no significant impact of the January share returns on the February 2020 stock returns, as the value of (P-Value) (0.265) which is not significant, especially since it is greater than the level of significance (0.05), while the value of the coefficient of determination is $R^2\%$ (0%), and there is no significant effect of the returns of the shares of January on the returns of the shares of the month of March through the returns of shares for the month of February of the year.(2020), as the value of (P-Value) was (0.800), which is not significant, especially since it is greater than the level of significance (0.05), while the value of the coefficient of determination $R^2\%$ (0%), and these results confirm that stock returns for the months (January and February And March) tracking random traffic, which makes it difficult to predict its future changes based on the data of the previous time period.

Table (2) Results of direct impact tests between January, February and March returns (2020)

Track	C.R.	P-Value	$R^2\%$	Explanation
January → February	1.114	0.265	0%	There is no
February → March	-0.254	0.800	0%	cumulative effect
→	Impact Index			
C.R.:The critical ratio is the parameter estimate divided by the standard error estimate				

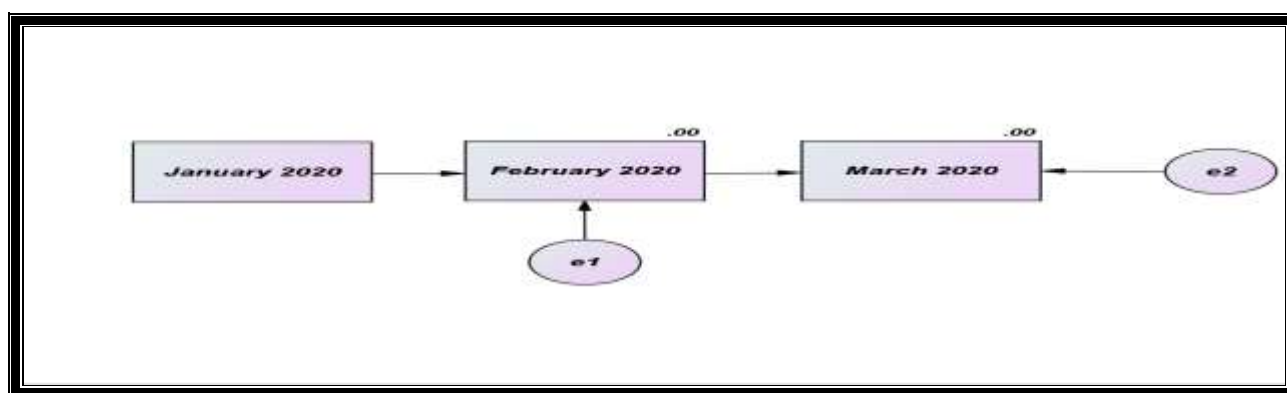**Researcher setup based on Amos V24 program data**

Figure (1) Results of linear modeling of influence relationship between (January - February - March) of 2020 according to data of program (Amos V24).

- **Impact testing by linear modeling of stock returns in April, May and June of 2020:**

Table (3) , Figure (2) indicate that according to data of linear modeling , the results of the path analysis mediated by Amos program, there is no significant impact of returns of the shares of the month of April on the returns of the shares of month of May of the year (2020), as the value of (P-Value) was (0.691) and it is not significant, especially since it is greater than the level of significance (0.05), while the value of the coefficient of determination is $R^2\%$ (1%), and there is no significant effect of the returns of the shares of the month of April on the returns of the shares of the month of June through the returns of the shares of the month of May of (2020) As the value of (P-Value) reached (0.415), which is not significant, especially since it is greater than the level of significance (0.05), while the value of the coefficient of determination $R^2\%$ (3%), and these results confirm that

stock returns for months (April, May, June) follow The random walk, which makes it difficult to
predict its future changes based on the data of the previous period.

Table (3) results of direct impact tests between April, May and June returns (2020)

Track		C.R.	P-Value	R^2%	Explanation
April ⟶	May	0.398	0.691	1%	There is no
May ⟶	June	0.816	0.415	3%	cumulative effect
⟶		Impact Index			
C.R.:The critical ratio is the parameter estimate divided by the standard error estimate					

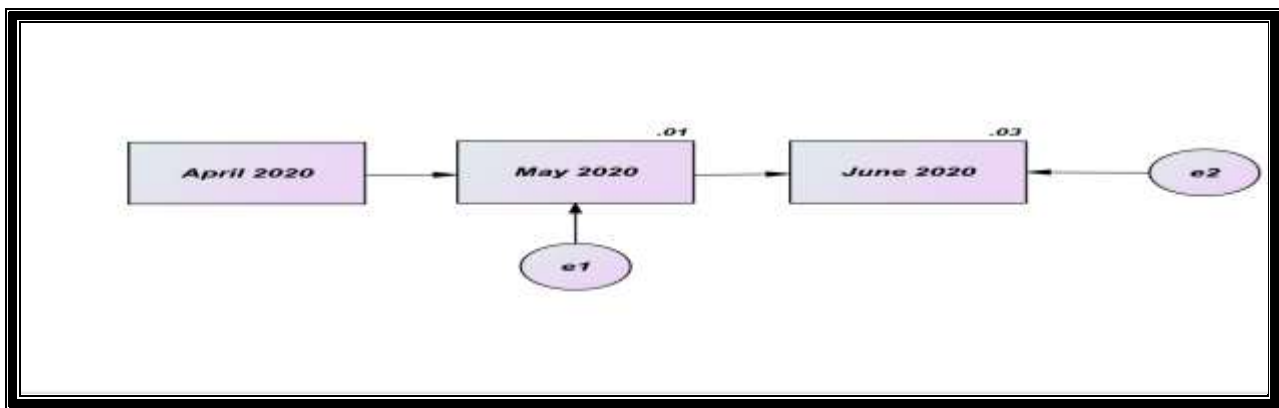**Researcher setup based on Amos V24 program data**

**Figure (2) Results of linear modeling of the influence relationship between (April - May - June)
of (2020) according to the data of program (Amos V24).**

- **Test the impact by linear modeling of stock returns in the months of July, August and
September of (2020):**

Table (4) and Figure (3) indicate that according to the data of linear modeling and the results of the
path analysis mediated by the Amos program, there is no significant effect of the returns of the
shares of the month of July on the returns of the shares of the month of August of the year (2020), as
the value of (P-Value) (0.920) It is not significant, especially as it is greater than the level of
significance (0.05), while the value of the coefficient of determination is R^2% (0%), and there is no
significant effect of the returns of the shares of the month of July on the returns of the shares of the
month of September through the returns of the shares of the month of August of the year (2020) As
the value of (P-Value) (0.729) is not significant, especially since it is greater than the level of
significance (0.05), while the value of the coefficient of determination R^2% (1%), and these results
confirm that the stock returns for the months (July, August and September) follow the course. This
makes it difficult to predict its future changes based on previous period data.

**Table (4) Results of direct impact tests between stock returns for July, August and September
(2020)**

Track		C.R.	P-Value	R^2%	Explanation
July ⟶	August	-1.00	0.920	0%	There is no
August ⟶ September		0.346	0.729	1%	cumulative effect
⟶		Impact Index			
C.R.: The critical ratio is the parameter estimate divided by the standard error estimate					

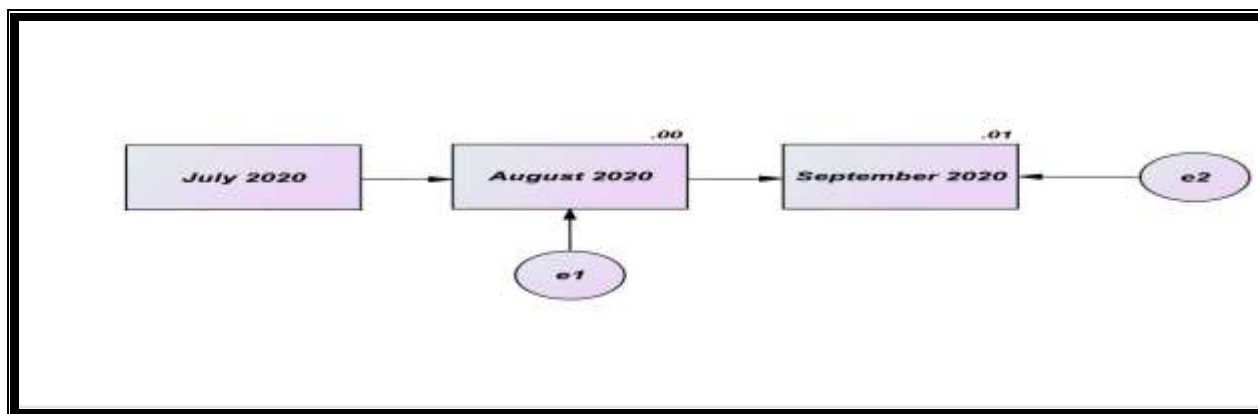**Researcher setup based on Amos V24 program data**

Figure (3) results of linear modeling of the influence relationship between (July - August - September) of (2020) according to the data of program (Amos V24).

- **Test the effect by linear modeling of stock returns in the months of October, November and December (2020):**

Table (5) , Figure (4) indicate that according data of linear modeling ,The results of path analysis mediated by the Amos program, there is no significant impact of the October's share returns on the November (2020) stock returns, as the value of (P-Value) (0.759), which is not significant, especially since it is greater than the level of significance (0.05), while the value of the coefficient of determination is $R^2\%$ (0%), and there is no significant effect of the returns of the shares of the month of October in the returns of shares for the month of December through the returns of shares for the month of November From the year (2020), when the value of (P-Value) was (0.294), which is not significant, especially since it is greater than the level of significance (0.05), while the value of the coefficient of determination $R^2\%$ (5%), and these results confirm that stock returns for the months (October And November and December) track random traffic, which makes it difficult to predict its future changes based on the data of the previous period.

Table (5) Results of direct impact tests of December returns on October, November and December returns (2020)

Track	C.R.	P-Value	$R^2\%$	Explanation
October ➝ November	0.307	0.759	0%	There is no
November➝December	1.050	0.294	5%	cumulative effect
➝ Impact Index				
C.R.: The critical ratio is the parameter estimate divided by the standard error estimate				

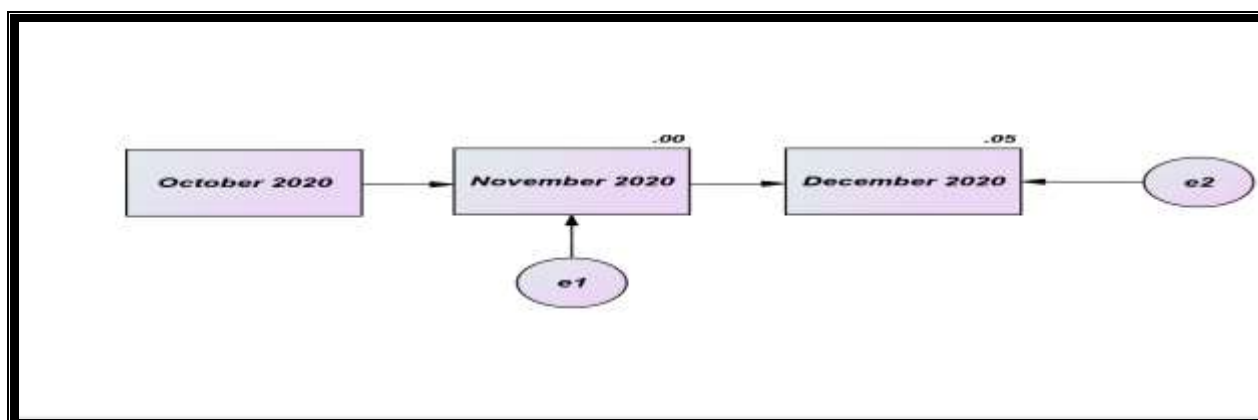**Researcher setup based on Amos V24 program data**

Figure (4) Results of linear modeling of influence relationship between (October, November and December) of 2020) according to the data of program (Amos V24).

- **Impact testing by linear modeling of stock returns in the months of January, February and March of the year (2021):**

According table (6) , figure (5), according to data of linear modeling and the results of path analysis mediated by the Amos program, the absence of any significant effect of the returns of the shares of January on returns of shares for the month of February of (2021) (as the value of (P-Value)(0.926) and it is not significant, especially since it is greater than the level of significance (0.05), while the value of the coefficient of determination is R^2% (0%), and there is no significant effect of the returns of the shares of January on the returns of the shares of the month of March through returns of the shares of the month of February of year (2020) as the value of (P-Value) (0.999) is not significant, especially since it is greater than the level of significance (0.05), while the value of the coefficient of determination R^2% (0%), and these results confirm that stock returns for the months (January, February and March) Tracking random traffic, which makes it difficult to predict its future changes based on previous period data.

Table (6) Results of tests of direct impact of January returns on February returns and a direct effect of February returns on March returns (2021)

Track	C.R.	P-Value	R^2%	Explanation
January → February	-0.093	0.926	0%	There is no
February → March	0.001	0.999	0%	cumulative effect
→ Impact Index				
C.R.: The critical ratio is the parameter estimate divided by the standard error estimate				

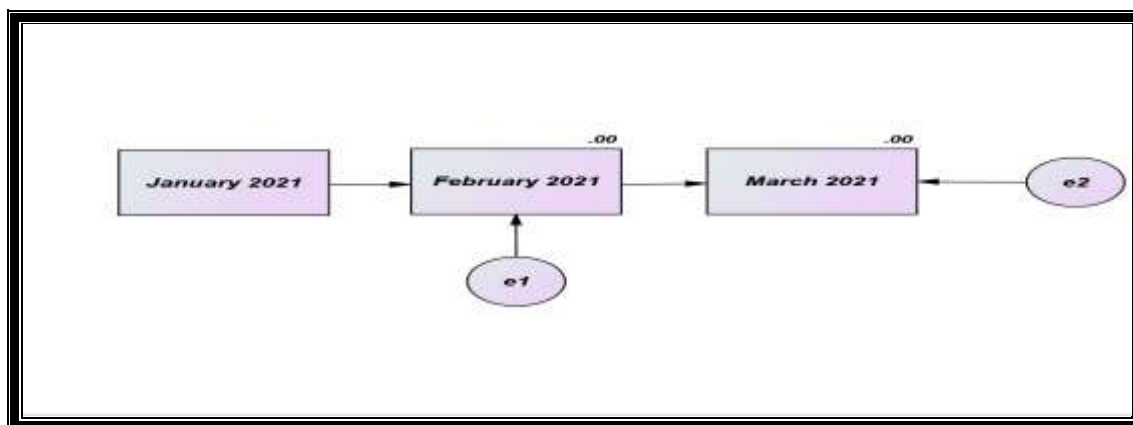**Researcher setup based on Amos V24 program data**

Figure (5) Results of linear modeling of influence relationship between (January - February - March) of the year (2021) according to data of program (Amos V24).

- **Testing effect by modeling the returns of quarters during the study period:**

In According Table (7) , Figure (6) ,Multiple regression analysis is used to test these two sets of hypotheses of linear modeling and results of path analysis mediated by the Amos program that there was no significant effect of stock returns for first quarter of (2020) on stock returns for the second quarter of same year, value of (P-Value) (0.290) which is not significant, especially as it is greater than the level of significance (0.05), while the value of the determination coefficient is R^2% (2%), and there is no significant effect of the stock returns for first quarter of the year (2020) on stock returns for the third quarter of (2020) Through the returns of the second quarter of the same year, as the value of (P-Value) (0.824) is not significant, especially since it is greater than the level of

significance (0.05), while value of the determination coefficient is R^2% (0%). The absence of any significant effect of stock returns for first quarter of (2020) on stock returns for the fourth quarter of the same year through stock returns for the second and third quarters of (2020)as the value of (P-Value) (0.423) is not significant, especially since it is greater From the level of significance (0.05), while , value of the coefficient of determination R^2% (1%), while , data of linear modeling and the results of path analysis mediated by the Amos program confirm that there is no A significant effect of stock returns for the first quarter of (2020) on stock returns for the first quarter of (2021) across stock returns for the second, third and fourth quarters of (2020) as the value of (P-Value) reached (0.194), which is not significant, especially since it is greater The level of significance was (0.05), while the value of the coefficient of determination R^2%was (3%). All of these results confirm that stock returns for the first, second, third and fourth quarters of (2020) and stock returns for the first quarter of (2021) follow random course of action, making it difficult to predict their future changes based on the data of previous period.

Table (7) results of direct impact tests between quarters returns

Track		C.R.	P-Value	R^2%	Explanation
first quarter 2020 ⟶	second quarter 2020	1.058	0.290	2%	There was no cumulative effect between the quarters
second quarter 2020⟶	third quarter 2020	-0.222	0.824	0%	
third quarter 2020 ⟶	fourth quarter 2020	0.801	0.423	1%	
fourth quarter 2020⟶	first quarter 2021	1.298	0.194	3%	
⟶	Impact Index				
C.R.: The critical ratio is the parameter estimate divided by the standard error estimate					

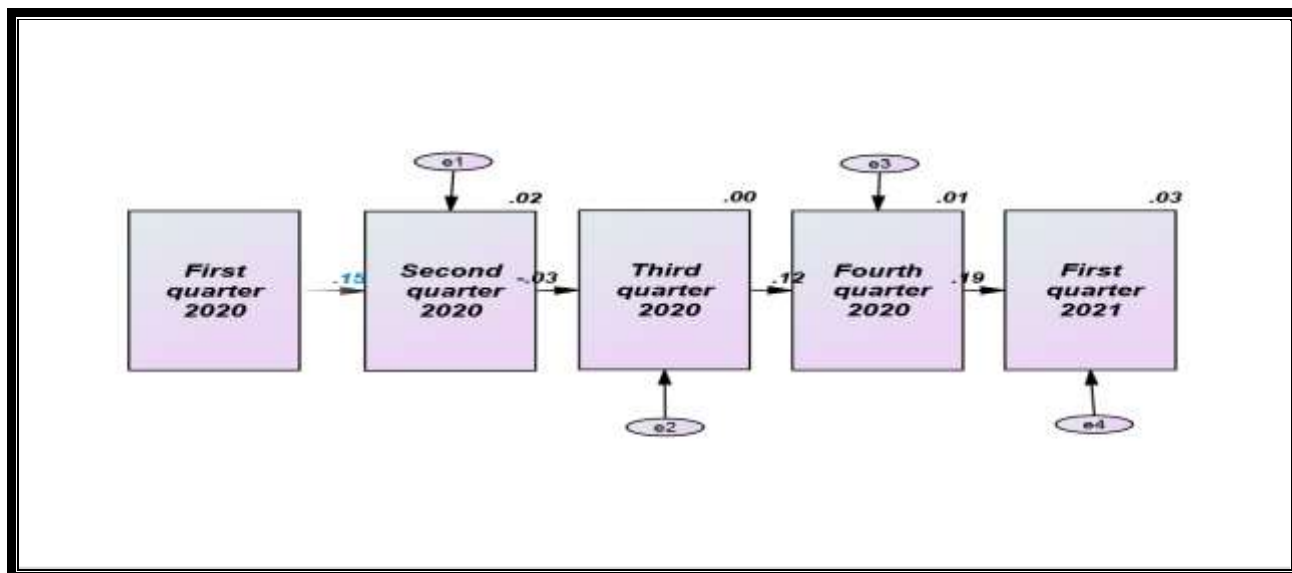**Researcher setup based on Amos V24 program data**

Figure (6) results of linear modeling of influential relationship, returns of quarters during the study period

6-Conclusions and Recommendations:

6-1: Conclusions:

The most important conclusions reached by the researcher based on the results of the study can be summarized as follows:

6-1: The time series of stock returns in the Iraq Stock Exchange follows the random walk model throughout the study period. We conclude from this that the future movements of stock prices in this market cannot be predicted based on historical data alone on the prices of shares traded in it.

6-2: The successive changes in the prices of shares traded on the Iraq Stock Exchange are random. This is consistent with the basic assumption of the random walk theory that stock prices move randomly in efficient markets. We conclude from the implication that the Iraq Stock Exchange is an efficient market in a weak form, to achieve the condition of randomness in the movement of stock prices.

6-3: All statistical tests used in the study (cumulative effect by path analysis, and the CARCH model) proved that the time series of stock returns in the Iraq Stock Exchange follows the random walk model throughout the study period, and therefore its future movements cannot be predicted based on historical data only. It is presented that the Iraqi market for securities is an efficient market at the weak level, based on the results of (two statistical tests) covered by the study.

6-4: The Iraq Stock Exchange Index was characterized by achieving successive losses for the greater part of the studied period of time. We conclude from this that the Iraq Stock Exchange has been significantly negatively affected by the consequences of the Corona pandemic, whose negative consequences extended to include most financial markets in the world.

6-5: The results of the study proved the high degree of risk per unit of return on investment in the shares of companies included in the Iraq Stock Exchange Index (ISX60). We conclude from this that the degree of investment risk in the market is high, which may lead to the reluctance of investors to invest in them in the future.

- The high degree of investment risk in the Iraqi market for securities is a result and a natural reflection of the nature of the difficult political and economic conditions that Iraq went through in the period of time discussed, which worsened due to the consequences of the Corona pandemic crisis, which led to an unprecedented decline in global oil prices, which is a source The only income for the Iraqi economy.
- **In addition to**, conceded reflected financial crises the high risk are in behavior of the share price thus, on the movement of direction of markets

6-2: Recommendations:

Based on the conclusions of the study, the following recommendations can be suggested:-

6-1: The researcher recommends the administration of Iraq Stock Exchange to intensify ,strengthen its efforts to reach the market to higher levels of efficiency, such as the semi-strong level, as this will encourage attracting more financial investments to the market in a way that supports the activity of the Iraqi economy.

6-2: For investors ,It is necessary in the Iraq Stock Exchange to abandon futile attempts to forecast stock prices based on historical data for stock prices alone, given that the Iraq market is efficient in its weak form, So new information about will have lead adjustment of securities prices Finance quickly With release of such new information, current stock prices will reflect as closely as possible , completely all available historical information

6-3: Because of importance great role of enhancing the efficiency of the financial market Activating the principles of governance So, enhancing them with companies listed on the Iraq Stock Exchange.

6-4: Diversification Important of investment financial instruments traded in Iraq Stock Exchange because of importance of this in raising efficiency of financial market .

6-5: Continuous updating of electronic trading systems in Iraqi market for securities, line with recent global developments in this field due to importance of this in speed of information delivery to investors and in a way that enhances efficiency of financial market.

6-5: Opening up the Iraqi market for securities at linking them to the Others financial markets up to the global level as much as possible benefit from their expertise as well as possibility of attracting more foreign investments.

6-6: Awareness Enhancing the savings investment of Iraqi individual and encouraging him to direct his savings towards investing in Iraq Stock Exchange Therfore ,the possibility of making use of media networks and channels

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