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Using Kida Model To Predict Financial Failure An analytical study in sectors of Iraq Stock Exchange

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Abstract : The main purpose of this study is to use the Keda model to predict financial failure, in order to achieve the objective of the study, the Iraq Stock Exchange was chosen as an applied sample, and the study methodology depends on identifying a major problem that has been clarified through several questions centered on an important question, is it possible to use the Keida model to predict financial failure?, The study sample was also reflected in the sectors of the Iraq Stock Exchange. The banking sector by (6) banks, As the period of the study of companies was limited between (2017-2022), which indicates that the study period was five years, and in order to extract the results in light of the data withdrawn from the Iraq Stock Exchange study sample, the study resorted to using a set of important indicators in financial, administrative, and statistical analysis according to the (SPSS) program. V.23 & Excel.v.2010), Accordingly, the study reached a set of results, perhaps the most prominent of which represents a better diversity in the investment portfolio can be achieved by building a diversified portfolio of ordinary shares that belong to different sectors and have different risks and benefits, and the study also recommends that care must be taken to achieve the appropriate balance between investment risks and expected returns to achieve the best financial performance of the investment portfolio.

Keywords: Common stock, Financial failure, Kida model.

Introduction: Predicting financial failure from common stocks using the Kida model as a crucial resource in ensuring the improvement of companies' performance, given the nature of financial failure to take into account the various risks and rewards associated with different investment options when predicting financial failure, and to do so in a manner that is in line with the company's goals and objectives, when building a portfolio it is important to take into account the expected return of the portfolio, risk tolerance and liquidity needs. In general, companies with a longer investment horizon can afford investments with higher risk, short-term volatility and losses are likely to be gradually offset over a longer period of time, and it is also important to diversify investments across different asset classes, such as stocks, bonds, and real estate, to protect against the possibility of losses due to an unexpected market recession.

When it comes to predicting financial failure through common stocks using the Kida model, the Kida model is often described as the gold standard, as the Keida model is an effective strategy to avoid financial failure through smart investment in common stocks, as it is suggested that investors predict financial failure differently from stocks representing a mix of industries, including stocks from companies representing different regions and different sizes. This model also seeks to When predicting the financial failure of common stocks under the Keida model, investors should focus on investing in companies that provide stability and potential growth, and also requires consideration of corporate shares in sectors such as consumer commodities, healthcare, and technology due to their relative consistency and growth potential. In addition, investing in shares of companies located in different countries and of different sizes can provide more balance and protection in the event that A downturn occurs in the market, hence investors should also consider the liquidity of their investments. Highly liquid corporate stocks can also provide quick access to funds during the most volatile times.

Hence, study came to highlight the importance of using the Kida model to predict financial failure, to activate the role of the Keida model significantly requires the use of diversity in the financial sectors, as diversification helps to distribute risk and can provide a safety net in the event of unexpected fluctuations or contraction in the market, without diversification, the portfolio is more vulnerable to risks.

From the foregoing, study was divided into four main sections, the first section was devoted to the presentation of the scientific methodology of study, while the second section included the theoretical side of study, and the third section explained the practical side, and the fourth section presented the conclusions and recommendations reached by study.

PART ONE: THE SCIENTIFIC METHODOLOGY OF STUDY

First: The idea and problem of study

Using the Kida model to predict financial failure is an important part of achieving financial security, and therefore it is important to consider a variety of factors, such as company performance and financial failure, as corporate performance is a key indicator of investment success, and therefore companies that have consistently recorded strong financial results, as well as those that have grown in size and scope, are generally considered more reliable investments. Moreover, those companies that focus on strong customer service, innovation, and strategic partnerships tend to achieve better results in the long run.

Financial markets' neglect of forecasting models will lead to deficiencies in the stock valuation forecasting process, and investors can reduce the risk of investing in securities and increase the likelihood of achieving their investment goals when the investee index is good.

Companies that lack sufficient cash reserves, have poor management, or rely heavily on a single source of income are particularly at risk of financial failure.

Financial failure prediction models, including the Keda model, provided indicators in order to reduce risk and limit losses. It is therefore essential for investors to understand the different types of stocks and the risks associated with them before predicting a suitable financial failure. Moreover, investors should regularly monitor their portfolios to ensure that their investments remain on track and that their desired goals have been achieved. In addition, the portfolio must be adjusted regularly to ensure that it meets the needs of the investor. The problem of study resorts to the application of the Kida Model to detect the possibility of failure of companies, **and therefore the problem of study can be formulated in the question (Can the** Kida model be used to predict financial failure?).

From this question, a set of important sub-questions can be raised, namely:

1) Can the Kida Model determine the position of companies for the purpose of maximizing common stocks in emerging financial markets?

2) What are the steps to predict financial failure of common stocks?

3) What indicators can be tracked to improve companies' ability to predict financial failure under the Kida model?

4) Does the value of the Kida model differ between companies referred for liquidation and non-referred for liquidation?

Second: Objectives of study

When it comes to building an investment portfolio for common shares to avoid financial failure under the Kida Model, the company should assess the level of risk associated with such a move. As with any investment, there are no guarantees of success, and the possibility of losses is always present. Therefore, it is necessary to consider both short-term and long-term strategies to ensure that gains can be maximized while minimizing losses at the same time. Which requires careful selection of stocks that can provide stability and growth. A diversified equity portfolio has to include a variety of industries, such as technology, energy, transportation, and healthcare. Moreover, it is important to consider both large and small capital stocks, as well as a mix of value and growth stocks. This will help balance any potential market volatility, Hence, the objectives of study can be formulated according to the following:

1) Knowing the ability of companies in the Iraq Stock Exchange to use the Kida Model).

2) Determine the methods through which common shares can be maximized in the financial markets.

3) Measuring the impact of the Kida Model in predicting the financial failure to build an investment portfolio of common stocks.

4) Building an investment portfolio of common shares

Third: The importance of study

Common stocks are often volatile, and while they can generate significant returns, they can also lead to significant losses. Moreover, the Kida model does not take into account the risks involved in owning common shares. While it is true that diversifying your portfolio can help reduce risk, it is also true that a portfolio with too many different stocks can lead to losses in the event of a market crash..

The Keda model also represents one of the most important financial models in financial management, but the neglect of the financial markets for the importance of this model contributed to causing a deficiency in predicting common shares in the stock market, and not linking common shares in such markets with the peculiarities and basic indicators, as these topics did not receive much attention among the companies of Iraq as they represent the basis through which investment portfolios can be built, the seriousness of financial failure and its negative effects on the economies of countries The world and as a result of the presence of a number of companies that have failed financially in recent times and the continued attempt not to increase these companies in order not to harm the Iraqi economy.

Hence, the importance of the Keida model can be highlighted in that it is a method that contributes to the correction and diversity of the financial portfolio, which helps reduce risks and reduce losses in the event of disruption or failure of the labor market, and this importance can be summarized as follows:

1) The Kida Model is among the important financial models that have received high interest among researchers.

2) study derives its field importance through its contribution to vital aspects, including introducing the sample companies to the need to pay attention to the Kida Model in order to maximize their common shares to build an investment portfolio.
3) Proposing a set of results through which the performance of companies in the Iraqi stock market can be improved in order to give them more ability and support to compete with foreign companies.

Fourth: study hypotheses

These hypotheses were formulated based on understanding the nature of the problem as follows:
1. The first main hypothesis: The Keda model can predict the financial failure of companies studied in a stock market.
2. The second main hypothesis:
First: - (correlation hypothesis test)
(There is a statistically significant correlation between the investment portfolio of common shares and financial failure under the Kida model) and several sub-hypotheses branch out of it:
A_ The first sub-hypothesis: - There is a statistically significant correlation between the investment portfolio of common shares and financial failure under the KIDA model in the banking sector.
B_ The second sub-hypothesis: - There is a statistically significant correlation between the investment portfolio of common shares and financial failure under the KIDA model in the industrial sector.
H_ The third sub-hypothesis: - There is a statistically significant correlation between the investment portfolio of common shares and financial failure under the Kida model in the hotel sector.
G_ Fourth sub-hypothesis: - There is a statistically significant correlation between the investment portfolio of common shares and financial failure under the Kida model in the telecommunications sector.
C_ Fifth sub-hypothesis: - There is a statistically significant correlation between the investment portfolio of common shares and financial failure under the Kida model in the services sector.
D- There is a statistically significant correlation between the investment portfolio of common shares and financial failure under the KIDA model in the agricultural sector.
There is a statistically significant correlation between the investment portfolio of common shares and financial failure under the KIDA model in the investment sector.
3. The third main hypothesis: -
Second: - (study hypothesis test)
(There is a statistically significant effect of the investment portfolio of common shares in financial failure under the Kida model) and several sub-hypotheses branch out of it: -
a. The first sub-hypothesis: - There is a statistically significant effect of the investment portfolio of common shares on financial failure under the Kida model in the banking sector.
In. The second sub-hypothesis: - There is a statistically significant effect of the investment portfolio of common shares on financial failure under the Kida model in the industrial sector.
c. The third sub-hypothesis: - There is a statistically significant effect of the investment portfolio of common shares on financial failure under the Kida model in the hotel sector.
W. Fourth sub-hypothesis: There is a statistically significant effect of the investment portfolio of common shares on financial failure under the Kida model in the telecommunications sector.
C. Fifth sub-hypothesis: There is a statistically significant effect of the investment portfolio of common shares on financial failure under the Kida model in services.
Going to. Sixth sub-hypothesis: There is a statistically significant effect of the investment portfolio of common shares on financial failure under the KIDA model in the agricultural sector.
X. Sub-hypothesis VII: There is a statistically significant effect of the investment portfolio of common shares on financial failure under the KIDA model in the investment sector.

Fifth: Population and sample of study

The target population is determined in study before selecting the sample so that its vocabulary has the same characteristics and study population is determined in the light of what serves the objectives of study, and then decides how to choose the sample from it, and study population is represented in the banking sector, while study sample was represented in the banking sector by (6) banks.

PART TWO: THE THEORETICAL SIDE OF STUDY

First: Common Shares

1. The concept of common shares

Stock prices are affected by changes in interest rates, if we take the interest rate from the central bank as one of the tools of the monetary authority's policy and assume that the policy followed by this authority calls for raising or lowering the interest rate for the purpose of addressing a specific economic situation (such as inflation, for example),

this legal action will actually affect the liquidity of commercial banks up and down (Mamouri and supportive, 2015: 295).

The modern financial theory based on the idea of efficient financial markets indicates that the trading of securities can at any moment of time for the two parties (seller and buyer÷ at the same price, whatever the amount of trading, as this definition reflects the ideal situation for the liquidity of common shares in the efficient financial markets in which the immediate trading and a high level of speed to carry out trading in common shares in large quantities and without affecting stock prices (Saman, 2016:4). And between (Zheng, 2008: 2) that the liquidity of shares lies in its importance to investors in its reflection in all areas of work in the financial markets because it enables individual traders to meet the financial needs without incurring large losses for institutions, while causing poor liquidity abnormal returns and reduce trading volume and more risks, as it increases the cost of capital for companies as it can influence investor decisions because it is closely related to transaction costs because low transaction costs mean increased liquidity. And vice versa.

The share is the share provided by the partner in the company's capital, and the term share is called the instrument fixed in this right, and the share is a certificate that entitles its owner (its owner the right to own part of the company's property that issued the share, and the shares are transferable from one place to another, the share is based on ownership characterized by permanence, i.e. it does not have a specific maturity date as long as the company is continuous, but shareholders have the right to obtain net income This means that the holder of common shares may receive greater returns than bondholders (where bonds receive a fixed return) but the risks to the owners are greater as long as their rights are attached to the remaining income after the payment of the precedence obligations. On the other hand, there is no obligation to pay dividends law, as based on the opinion of the Board of Directors and after the approval of the General Assembly of shareholders 12, it is also defined as sukuk of equal value negotiable in securities (Sufyan et al., 2021: 11).

The issuance of common shares is one of the financing methods (Amiri,2016:166), and therefore the common shares represent a document of one nominal value that is left for public subscription and has the ability to trade and is indivisible by the bearer and does not deserve payment on a specific date, that is, it is eternal throughout the life of the project, and it is not committed to distributing fixed dividends, whether in terms of determining the value of profits or their maturity periods. Common shares represent the interests of the owners in the institution, and common shares are characterized by representing:

ü A permanent and stable source of financing for institutions, as its value may not be recovered from the institution.

ü The issuance of common shares does not constitute an obligation on the institution to pay specific amounts or set a maturity date for them.

ü The Corporation is not obliged to refund the value of the share on a specific date, which gives flexibility to the Corporation not to enter into specific obligations (Asma, 2015: 39-40).

Investing in common stock is one of the important areas of interest to investors. Companies try to raise money by encouraging others to own their shares that maximize their market values (Hamid& Yousif,2019:394; Jeon Gayoung,2016:1). Rahimi & Mahendra (2019:1) believes that the real return of common stock negatively correlates to expected and unexpected inflation. Da Dalt et al. (2018:1) believes that common stocks are associated with an imbalance in domestic (positive) individual demand.

2. Types of common shares

Stocks can be classified into several types that differ according to the criterion used (Rania and Khadija, 2021: 14):

a. In terms of form: According to this standard, shares can be classified into the following:

Bearer shares: They are shares similar to money, the owner of which is the person who owns them, meaning that ownership is transferred as soon as handling.

Nominal shares: They are shares bearing the name of their owner, and their ownership is transferred by registration in the company's books.

Shares for order: They are shares issued to the order of a specific person (or persons) that are traded by endorsement, without requiring prior approval from the issuing company.

In. According to the share paid by the shareholder: Based on this criterion, a distinction can be made between

Cash shares: They are shares that represent cash shares in the company's capital, the value of which is paid by the subscriber in cash and the share does not become negotiable by commercial means until after the company is finally established.

Real Shares: They are shares representing in-kind shares of the capital of the capital of the capital company, and are issued against real assets such as real estate, factory, shop or the company's assets, certified by the constituent assembly.

· **Shares or shares of incorporation**: They are shares issued by the company for the benefit of some persons in return for their efforts and rare services to complete the establishment of the company, which may be nominal shares or to

their holder, giving their owners the right to profits only without the right to participate in the management of the company or a share of its assets upon liquidation.

3. Types of valuation of common shares

The most important types of common stock values can be summarized in the following points (Hussein and Hafeza, 2011: 195-196; Hitchner, 2003:961):

a. Nominal value: It is a theoretical value of recording the paid-up capital account in accounting entries and has no economic value for investors

In. Book value: It represents the contributions of the owners of the organization shareholders against each share of the organization's shares and is measured by dividing the shareholders' equity by the number of common shares

c. Market value: It represents the trading price in the Malaya markets and is determined based on several forces, including the risk to which the organization is exposed, rumors, general economic conditions and the extent to which the organization achieves profits, so if the organization's profits rise, the demand for the organization's shares will increase and thus its price will rise more than the nominal and book value

W. Zero-sum value: It is the share of the liquidation value of the assets of the organization after paying the rights of all creditors and preferred shareholders

C. Real value: The common shares have a real value that differs from the value specified in the financial markets, that is, the real value differs from the actual market value of the share, and the reason for the difference is that the provisions used to develop the real value may not be the same as the provisions of the shareholders in the market itself, as it is the value based on the analysis of financial information about a particular entity.

Second: Financial Failure

1. Concept of financial failure

The word failure in Arabic means failure and failure to achieve the goals set in advance, and the failure of companies financially refers to the inability of the company to fulfill its obligations or failure to sell its products or provide its services and obtain an appropriate return (Al-Morshedy, 2018: 256; Llo Worvo,2019: 428 ; Ameri and Jabr,2018: 335; Al-Hamdani, 2018: 87). Thus, financial failure is one of the serious things that are exposed to financial activities in companies and the multiplicity of reasons for its occurrence, all of which are due to bankruptcy and liquidation, and represent a stage that the company is going through from the stages of financial decline until reaching financial liquidation, financial failure represents the current that occurs when the company's liabilities exceed its assets, and this means that the company has a negative value that makes its ability to pay obligations weaken completely (Al-Hamdani and Al-Qattan, 2013: 459).

Financial failure often develops through bankruptcy and financial default, which represents the company's inability to ensure that its obligations are paid at the present time and within the specified maturity time, and this results from an infringement of the value of current liabilities on the value of current assets (Sulub, 2014:174). It appears (Al-Helioi and Al-Sharif, 2017: 200) that financial failure is the inability of a company to pay its financial obligations when they are due. Financial failure represents the process in which the company has begun to walk the long road that ends with an event, which is financial hardship, and between (Shaheen and Matar, 2011: 852) that financial failure refers to the company's achievement of losses for two consecutive years or more during a certain period.

Financial failure is seen as the inability of a company to achieve an appropriate return that exceeds the cost of capital and therefore the company is at risk of being voluntarily liquidated or being compulsorily liquidated in favor of creditors legally (Jwaifel, 2019:16). Felt (Alhamdi et al., 2019:1321; Abdalgane, 2019:263) that financial failure represents the stage in which the company is unable to meet its short-term obligations when they mature, and in the subsequent period the company loses the ability to pay interest, loans and preferred dividends, leading it to liquidation. When current assets are greater than current liabilities but are unable to meet their financial obligations such as interest payments or loan installments (Pringle & Harris, 1984:632-633), financial failure represents the company's assumption of more debt combined with a decrease in its ability to generate revenue with insufficient cash flow from operations will lead the organization to liquidity problems leading to financial distress (Schmuck, 2013:28).

Financial failure is defined as a company's inability to pay its current obligations (Al-Khalili,2022:125), and therefore financial failure may lead to corporate bankruptcy or liquidation (Perinpanathan,2015:3; Aksoy& Boztosun,2020:237). Yaman&Korkmaz,2022:11) saw financial failure as a financial difficulty in meeting short-term obligations.

Asyikin et al. (2018:11) noted that financial failure expresses insolvency that distinguishes between cash flow and inventory base. Li et al., 2019:21 (Li et al.,2019:21) explained that financial failure is defined as a consecutive net loss of two years or more, and the likelihood of failure decreases with increases in the value of assets.

Third: Kida Model

It is one of the quantitative models of importance in predicting failure, as Kida applied his model to a sample consisting of 20 companies in the United States of America, half of which failed and the other half of which are non-

failure, and Kida used 20 financial ratios extracted from the financial statements, and after conducting a differentiation analysis, Kida 1980 reached five financial ratios that combine all aspects of operational performance in public shareholding companies, which can now be expected and predicted by financial failure two years before the failure occurs, where He presented it in the form of a discriminatory equation as follows (Kida, 1980) (Abdurrahim, 2021: 24):

K=1.042*X1+ 0.42*X2-0.461*X3 - 0.463*X4+ 0.271*X5

Whereas:

X1: Net profit after interest and tax/total assets

X2: Book value of equity / total liabilities

X3: Current Assets / Current Liabilities

X4: Sales / Total Assets

X5: Cash / Total Assets

The coefficients (1.042, 0.42, -0.461, -0.463, 0.271) refer to the weights of the function variables as they express the relative importance of each variable depending on what the companies in question use. A negative K value expresses a high probability of failure according to the Keida model, and this model has proven its ability to predict failure by up to 90% a year before the risk of bankruptcy (Renas, 2016 & Islam).

PART THREE: THE APPLIED ASPECT OF RESEARCH

First: - Analysis and discussion of the returns of common shares of banks and companies in study sample

1-Banking Sector

Table (1) shows the return of common shares of the banks in the research sample for the period (2017-2022), and Al-Ahli Bank has achieved the highest return respectively amounting to (0.35,0.29,0.23), which is a good indicator of the bank's stock activity during study years, and successively, Al-Ahli Bank is the best bank among the banks of study sample in terms of achieving return on shares.

Table 1 Banking Sector EPS

year	National Bank	Commercial Bank of Iraq	Mansour Bank	Bank of Baghdad	Middle East Bank	Gulf Bank
2017	-0.53	-0.51	-0.21	-0.49	-0.65	-0.61
2018	-0.66	-0.53	-0.37	-0.71	-0.87	-0.81
2019	-0.39	-0.54	-0.33	-0.62	-0.9	-0.86
2020	0.29	-0.31	-0.42	-0.38	-0.81	-0.81
2021	0.35	-0.37	-0.41	-0.19	-0.79	-0.82
2022	0.23	-0.38	-0.49	0.03	-0.8	-0.85

2- Industrial Sector

Table (2) shows the return of common shares of the industrial sector in study sample for the period (2017-2022), and the ethnic company for carpets and furnishings achieved the highest return, which is a good indicator of the company's stock activity during study years, and therefore the ethnic company for carpets and furnishings is the best company among the industrial sector companies in study sample in terms of achieving return on shares.

Table (2) Return of shares for the industrial sector

year	Iraqi Carton Industry	Canadian for the production of veterinary vaccines and medicines	Baghdad Soft Drinks	Al Mansour Pharmaceutical Industries	Al Raqiya Carpets & Furnishings
2017	-0.43	-0.24	1.68	-0.31	7.1
2018	-0.35	0.25	2.59	-0.36	6.98
2019	0.98	0.69	2.29	-0.05	7.85
2020	1	0.37	3.15	0.43	9
2021	-0.73	0.37	3.15	0.43	14
2022	0.05	0.56	3.3	1.84	9

3- Hotel Sector

Table (3) shows the return on common shares of the hotel sector in study for the period (2017-2022), and Babylon Hotel achieved the highest return during study years, which is a good indicator of the company's stock activity during study years, and therefore Babylon Hotel is the best hotel in the hotel sector in terms of achieving return on shares.

Table 3: Return on Shares for the Hotels Sector

year	Mansour Hotels	Ishtar Hotels	Babylon Hotel	Karbala Hotels

2017	10.89	11	36.5	0.08
2018	11	9	43.5	0
2019	12	9.5	74	-0.15
2020	8	9.5	76.6	-0.22
2021	8	9.5	76.6	-0.22
2022	9.5	8.2	79	-0.08

4-Telecommunications Sector

Table (4) shows the return of common shares for the telecommunications sector in study for the period (2017-2022), and Asiacell Company achieved the highest return during study years, which is a good indicator of the company's stock activity during study years, and therefore Asiacell is the best company in the telecommunications sector in terms of achieving return on shares.

Table 4: Return on Shares for Telecommunications Sector

year	Asia Cell Company	Al Khatim Telecom
2017	4.25	-1
2018	6.7	0
2019	7.65	3.8
2020	6.31	3.35
2021	6.49	1.35
2022	6.31	1.3

5- Services Sector

Table (5) shows the return of common shares for the services sector in study for the period (2017-2022), and Baghdad Iraq Company for Public Transport and Real Estate Investments has achieved the highest return during study years, which is a good indicator of the company's stock activity during study years, and therefore Baghdad Iraq Company for Public Transport and Real Estate Investments is the best company in the services sector in terms of achieving return on shares.

Table 5 Returns on Shares for the Hotels Sector

year	Al Mamoura Real Estate Investments	Elite General Contracting & Real Estate Investments	Baghdad Iraq Public Transport & Real Estate Investments
2017	0.9	-0.64	13.8
2018	0.86	-0.68	14.81
2019	0.76	-0.58	17.05
2020	2.07	-0.6	17.5
2021	2.07	-0.6	17.5
2022	1.5	-0.5	26.5

6- Agricultural sector

Table (6) shows the return of common shares for the agricultural sector in study sample for the period (2017-2022), and Al-Iraqiya Company for the production and marketing of agricultural products achieved the highest return during study years, which is a good indicator of the company's stock activity during study years, and therefore Al-Iraqiya Company for the production and marketing of agricultural products is the best company in the agricultural sector in terms of achieving return on shares.

Table 6 Dividend for the Agricultural Sector

year	Middle East Fish Production & Marketing	Iraqi for the production and marketing of meat and field crops	Iraqi for the production and marketing of agricultural products
2017	7.05	6.94	6.65
2018	8.15	3.99	7.8
2019	7.75	3.75	11.05
2020	8.56	3.6	11.65
2021	8.56	3.6	11.65
2022	7.25	3.5	17.5

7- Investment Sector

Table (7) shows the return of common shares for the investment sector in study for the period (2017-2022), and Al-Ameen Financial Investment Company achieved during the years (2017, 2018) the highest return during study years, which is a good indicator of the company's stock activity during study years, and therefore Al-Ameen Financial Investment Company is the best company in the investment sector in terms of achieving return on shares.

Table 7: Return on Shares for the Investment Sector

year	Al-Ameen Financial Investment	Al Zorah Financial Investment	Mesopotamia Financial Investments
2017	0.15	-0.64	0

2018	0.4	-0.68	-0.29
2019	-0.12	-0.67	-0.1
2020	-0.26	-0.67	-0.1
2021	-0.4	-0.8	-0.1
2022	-0.14	-0.38	-0.1

Source: Prepared by the researcher based on the outputs of the electronic calculator

Second: - Testing the (**KIDA) model for banks and companies of study sample for the period from (2017-2022)**

This section presents the values calculated according to the Kida Model for banks and companies in study sample for the period from (2017-2022), and the calculated values were presented at each bank and company, and the results were compared to all banks and companies, as follows:-

K=1.042*X1+ 0.42*X2-0.461*X3 - 0.463*X4+ 0.271*X5

Whereas,:-

X1 :-Net profit before interest and tax / Total Assets

X2 :-Book value of equity / total liabilities

X3 :-Current Assets / Current Liabilities

X4 :-Sales / Total Assets

X5:- Cash / Total Assets

From the foregoing, we note that the number of banks companies that achieved the Kida Model in terms of showing that there are no threats of financial failure and non-referral for liquidation has reached (8) companies and banks out of (24) companies and banks that were included in the sample of the company, and were not eligible for liquidation, while the results of the Kida model were not achieved when (16) companies out of (24) companies and banks, showed the existence of financial failure, i.e. (33%) were included in study sample. Thus, Table (8) shows the companies and banks through which it is possible to build an investment portfolio for common shares based on the Kida Model..

Table (8) Results of Kida Model on Banks and Companies Not Threatened with Financial Failure

Company Name	Kida	Results
Middle East Bank	0.077	Financially secure
National Company for Chemical and Plastic Industries	0.103	Financially secure
Canadian for the production of veterinary vaccines and medicines	0.069	Financially secure
Baghdad Soft Drinks	0.098	Financially secure
Al Khazir Road Construction Materials Company	0.199	Financially secure
Ethnic Company for Carpets and Furnishings	0.731	Financially secure
Asia Seal	0.100	Financially secure
Middle East Fish Production & Marketing	0.800	Financially secure
Iraqi for the production and marketing of agricultural products	1.212	Financially secure
Mesopotamia Financial Investments	0.006	Financially secure

Third: Building the investment portfolio in the Iraq Stock Exchange for the period (2017-2022)

1- Analysis of investment return and risk, standard deviation, variance and beta coefficient

$$SD = \sigma = \sqrt{\sigma^2}$$

$$\sigma^2 = \sum_{i=1}^{n} (R_i - \overline{R})^2 P_i$$

$$\beta i = \frac{Cov(Ri, RM)}{\sigma^2(RM)}$$

The results of Table (9) indicate that the company with the highest return among 24 companies and banks for the period (2017-2022), represented by the ethnic company for carpets and furnishings, whose return reached (8.988), which means a high pace of economic activity in the company, while the Middle East Bank has achieved the lowest return on shares, which amounted to (-0.803), and this indicates the downward movement of the bank's shares, while the standard deviation reached the highest deviation during the year (0.149399) and is represented by a road companyKhazir Construction Materials Compared to the standard deviation of the market of (0.082127)[1] This means a high total risk for the company, while the lowest standard deviation has reached its value (0.051095) which is

for Mesopotamia Financial Investments Company and compared to the standard deviation of the market of (0.082127), which indicates a low total risk for the company either, the beta coefficient has reached the highest value of the beta for the companies sample of study (1.510767) for the company by Al-Khazir Road for Construction Materials and this indicates However, the movement of stocks is more volatile than the movement of the market, while the lowest value of the beta coefficient amounted to (-0.08744) for Al-Kindi Company for the production of vaccines and veterinary medicines, and this indicates the inverse relationship between the stock and the market.

As for the variance of each company, it reached its highest value (0.012093) and represented by Al-Kindi for the production of vaccines and veterinary medicines, which is higher compared to the market variance (0.006202)[2] and this means that the variance in the movement of the stock not associated with the market movement is high, while the lowest variance has reached its value (0.002611) for Mesopotamia Financial Investments Company, which is lower compared to the market variation, which is (0.006202), and this means that the variance in the movement of the stock that is not associated with the market movement is low.

Table (10) Annual Market Rate of Return, Average, Variance, Standard Deviation and Variance for the Shares of the Companies Sample for the Period (2017-2022)

Company Name	**Icon**
Middle East Bank	BIME
National Company for Chemical and Plastic Industries	INCP
Canadian for the production of veterinary vaccines and medicines	IKLV
Baghdad Soft Drinks	IBSD
Al Khazir Road Construction Materials Company	IRMC
Ethnic Company for Carpets and Furnishings	IITC
Asia Cell Company	TASC
Middle East Fish Production & Marketing	AVE
Iraqi for the production and marketing of agricultural products	AIRP
Mesopotamia Financial Investments	NAME

Source: Prepared by the researcher based on the outputs of the program (Spss.v27))

2- Determine the return and risk of shares Trynor for shares

Stocks can be arranged according to the Trynor index (from high to low), which positively determines the percentage of the desire of the stock to enter the portfolio, and table (11) includes the rate of return achieved for each share and the beta coefficient resulting from dividing the common variance between stock returns and market returns on the variance with market returns, as well as the rate of return for the risk-free asset.

$$\frac{\overline{R_i} - R_F}{\beta_i}$$

Ri: Expected Earnings per Share I .

RF: Return onrisk-free assets .

Bi: Expected change in the rate of return on shares associated with the change in market return.

Table (11) Realized rate of return, beta coefficient, interest rate on treasury bills and trainor for companies study sample for the period (2017-2022)

Company Name	***Rf***	***Ri***	***B***	**Trynor**
Middle East Bank	6%	-0.803	0.855317	-0.873
National Company for Chemical and Plastic Industries	6%	0.087	-0.3372	0.265
Canadian for the production of veterinary vaccines and medicines	6%	0.333	-0.08744	1.019
Baghdad Soft Drinks	6%	2.693	-0.09651	3.315
Al Khazir Road Construction Materials Company	6%	0.33	1.510767	0.290
Ethnic Company for Carpets and Furnishings	6%	8.988	0.799437	8.913

Asia Cell Company	6%	6.285	0.340609	6.109
Middle East Fish Production & Marketing	6%	7.887	-0.45876	8.018
Iraqi for the production and marketing of agricultural products	6%	11.05	-0.35184	11.221
Mesopotamia Financial Investments	6%	-0.115	0.276194	-0.332

The dermis step includes the order of the highest stock order to the lowest as follows:-

Table (12) Realized rate of return, beta coefficient, interest rate on treasury bills and trainor for the companies of study sample for the period (2017-2022) after ranking them from highest to lowest

Company Name	***Rf***	***Ri***	***B***	**Treynor Index**
Middle East Bank	6%	2.693	-0.09651	3.315
National Company for Chemical and Plastic Industries	6%	1.887	-0.15812	2.266
Canadian for the production of veterinary vaccines and medicines	6%	2.285	0.340609	2.109
Baghdad Soft Drinks	6%	1.988	0.799437	1.913
Al Khazir Road Construction Materials Company	6%	1.05	-0.35184	1.221
Ethnic Company for Carpets and Furnishings	6%	0.333	-0.08744	1.019
Asia Cell Company	6%	0.33	1.510767	0.290
Middle East Fish Production & Marketing	6%	0.087	-0.3372	0.265
Iraqi for the production and marketing of agricultural products	6%	-0.115	0.276194	-0.332
Mesopotamia Financial Investments	6%	-0.803	0.855317	-0.873

Source: Prepared by the researcher based on the outputs of the electronic calculator

It is clear from Table (12) that the highest value for the Trynor index (11.221) is for the Middle East Bank and the lowest value for the Trynor index (-0.873) is for Mesopotamia Financial Investments Company.

3- Determining the rate of pieces and shares nominated for the investment portfolio

After calculating the Trynor index and arranging the shares positively, (CI) can be calculated according to the equation below, which is the basis adopted in determining the stocks eligible to enter the portfolio and the shares that are excluded and determining the optimal cut rate (c*) and the shares with the highest value Trynor are entered compared to * (Ci) and the exclusion of the lowest value stocks of the Trynor index compared to the CI and through the following table: -

$$C_i = \frac{\beta_{iP}\left(\overline{R}_P - R_F\right)}{\beta_i}$$

Whereas,

*IP*β: The expected change in the rate of return per share (i) associated with the change in the return of the investment portfolio.

: Expected return from the investment portfolio.

Table (13) Determining the rate of shares and shares nominated for the investment portfolio

Company Name	**Treynor Index**	**(Ri-Rf) B/Var**	**B^2/ Var**	**Σ(Ri-Rf)B/var**	**ΣB^2 /Var**	**Q2mΣ(Ri-Rf)B/Var**	**1+Q2mΣ B^2/Var**	**Ci**
Middle East Bank	3.315	1.638	0.618	1.638	0.618	0.009	1.003	0.008
National Company for Chemical and Plastic Industries	2.266	1.108	1.089	2.745	1.707	0.014	1.009	0.014
Canadian for the production of veterinary vaccines and	2.109	2.678	2.652	3.786	3.741	0.02	1.019	0.019

medicines								
Baghdad Soft Drinks	1.913	0.026	0.001848	0.057	0.004	0.619	1.042	0.594
Al Khazir Road Construction Materials Company	1.221	0.01	0.000724	0.036	0.003	0.39	1.028	0.38
Ethnic Company for Carpets and Furnishings	1.019	0.062	0.001174	0.062	0.001	0.675	1.013	0.667
Asia Cell Company	0.290	0.041	0.001462	0.05	0.002	0.547	1.019	0.537
Middle East Fish Production & Marketing	0.265	0.011	0.011	0.051	0.002	0.557	1.022	0.545
Iraqi for the production and marketing of agricultural products	-0.332	-1.35	1.772	-2.78	5.568	-0.01	1.029	-0.01
Mesopotamia Financial Investments	-0.873	-2.91	1.929	-4.26	3.701	-0.02	1.019	-0.02

Source: Prepared by the researcher based on the outputs of the electronic calculator

The results of Table (13) indicate that the shares nominated to enter the portfolio are the shares of companies with a Trynor rate higher than the cut-off rate (Ci) and that the optimal cut rate has reached (0.38) and the number of shares entering the portfolio in the investment is (6) companies only out of (10) shares represented, (Middle East Bank, National Company for Chemical and Plastic Industries, Al-Kindi for the production of vaccines and veterinary medicines, Baghdad for soft drinks, Al-Khazir Road Company for Construction Materials, Al-Raqiya Company for Carpets and Furnishings).

4- Determine the investment weight of each share in the investment portfolio

After we have identified the shares included in the investment portfolio, the next step is to determine the weight, and this requires calculating (Zi) according to the equations below in Table (14).

$$Z_i = \frac{\beta_i}{\sigma^2_{ei}}\left(\frac{\overline{R_i} - R_F}{\beta_i} - C^*\right)$$

Table (14) Investment weight per share in the investment portfolio

Company Name	**Treynor-c***	**Like**	**Wi**
Middle East Bank	3.307	-39.19	0.0772
National Company for Chemical and Plastic Industries	2.252	-42.01	0.0827
Canadian for the production of veterinary vaccines and medicines	2.09	-18.867	0.0371
Baghdad Soft Drinks	1.319	-23.29	0.0459
Al Khazir Road Construction Materials Company	0.841	-13.26	0.0261
Ethnic Company for Carpets and Furnishings	0.352	-1.638	0.0032
Asia Cell Company	-0.247	-54.46	0.1072
Middle East Fish Production & Marketing	-0.28	-4.4404	0.0087
Iraqi for the production and marketing of agricultural products	-0.322	-31.31	0.0617
Mesopotamia Financial Investments	-0.853	-279.4	0.5501

PART FOUR: CONCLUSIONS AND RECOMMENDATIONS

First: Conclusions

1. The results showed that the good use of the Keda model contributes to achieving financial growth by evaluating the expected returns and risks associated with investments, which means that the model helps in determining the appropriate levels of risk and return in the investment portfolio, thus achieving better financial performance and reducing the chances of financial failure.
2. The described Kida models allow the financial failure forecast manager quickly and easily.
3. The cut-off rate allows to determine whether or not the stock should enter in the prediction of financial failure.
4. The use of the technical tool of the weighted moving indicator is a more efficient portfolio than the simple moving indicator.
5. Sharp models are integrated, as they take into account everything related to predicting financial failure, whether in the portfolio itself through the return, deviation and expected return, or from comparison with other portfolios or comparison with the market portfolio and the use of the Sharp ratio.

Second: Recommendations

1. The need to look at the general economic conditions, market expectations, inflation, liquidity requirements and personal financial objectives of the investor when predicting financial failure and choosing the financial assets to be invested in.
2. The need for sectors to reduce the chances of financial failure, which they must ensure to achieve the appropriate balance between investment risks and expected returns from various financial assets.
3. It is necessary to review the causes of deviation and its dispersion during the period, because the weights that appeared for most companies in the two portfolios are the result of the standard deviation, and this makes investors more averse to investment.
4. Relying on models that are interested in briefing in measuring the investment portfolio from its various aspects.
5. To configure the forecast of financial failure and the separation of portfolios, it is necessary to test stocks according to the weighted moving indicator as one of the technical analysis tools.

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