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Building the proposed Fama and French Six-Factor Model FF6M-DLE by adding the indebtedness factor and its reflection on the fair value of common stock

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Abstract

The research aims to determine the required rate of return according to the Fama and French five-factor model, after strengthening it by adding the indebtedness factor to build the Fama and French six-factor model FF6M-DLE. The effect of the indebtedness factor on the company's profitability and the real value of the ordinary shares calculated according to the (equivalent ascertainment) model and its suitability with the company's situation, and an analysis of the fluctuation between the market value and the real value of the ordinary stocks.

Keywords: DLE FF6M, earnings per share, risk-free rate of return (RF), market value, real value.

Introduction

Ordinary shares are a tradable security in the financial market and represent a share of the capital that grants the holder of the shareholders individual rights and joint rights with the holders of the preferred shares, as changes in the share prices give the holder the opportunity to profit as a result of selling them at a price higher than the purchase price, in addition to obtaining profits Annually when the company takes the decision to distribute the retained earnings, and each ordinary share is considered an ownership right in a way that guarantees its holder the opportunity to obtain a specific share of the company's capital.

The fair value is one of the financial instruments by which a security can be exchanged or a liability settled between the parties to the exchange. It represents the price that can be obtained by selling an asset or settling a liability (the exit price) in a regular transaction between market participants. The fair value of ordinary shares is affected Directly, positive or negative, with concepts represented in (the market value of the company, economic factors, changes that occur in the company's field of activity, information).

Research Methodology

First: the research problem

One of the most important and first steps that the investor should take when deciding to invest in common stocks is to evaluate stocks to diagnose the extent to which the real value of investments in common stocks differs from their market value. For the company to obtain the necessary funds to finance its activities under an unplanned financial structure, A number of sub-questions may be derived from this main problem, the most important of which are:

1) Is it possible to apply the Fama and French six-factor model by adding the indebtedness factor in a way that improves the possibility of determining the real value of the

companies' stocks in the Iraqi Stock Exchange?

2) Does the required rate of return according to the six-factor Fama and French model affect the real value of the shares of companies listed in the Iraqi Stock Exchange according to the equivalent assurance model to assess the real value of ordinary stocks?

Second: The importance of research

a. Analysis of the Fama and French six-factor model in the Iraqi stock exchange, and the extent of the model's impact on determining the fair value of the common stock.
b. Testing the ability of the relationship between indebtedness in the Fama and French six-factor model in the interpretation of stock returns in the Iraqi Stock Exchange.
c. Testing the Fama and French six-factor model in making better investment and financing decisions, and thus maximizing earnings per share.

Third: Research objectives

Stocks give the holder the opportunity to profit as a result of selling them at a price higher than the purchase price, in addition to obtaining annual profits when the company makes the decision to distribute the retained profits, and that the share prices are in the light of continuous changes between rise and fall, so the fair value of the ordinary share represents the price that can be obtained By selling it in the market, based on the foregoing, the research aims to achieve the following points:

1) Testing the effect of the Fama and French six-factor model in determining the true value of the common stock compared to its market value.
2) Determining the ability of the (equivalent ascertainment) model to evaluate the common stocks and thus determine the appropriate price for the common stock.
3) Verify the extent of the ability of the indebtedness in the Fama and French six-factor model to improve the explanatory power in the stock price.

Fourth: Research Methodology

In this study, the researcher adopted the financial analysis study approach because it is the best from the researcher's point of view, as well as the nature of the research topic and the available data, in addition to the fact that in this study the practical analytical approach. It will be relied upon in order to analyze the results according to the data collected and to reach the reasons that control those results and to provide treatments.

Fifth: Limitations of the search

1) Time limits: The time limits of the research are extended (2010 - 2020).
2) Spatial boundaries: represented by a group of companies participating in the Iraqi Stock Exchange, then accessing the results and writing recommendations.

Sixth: Society and research sample

1) Research community: companies contributing to the Iraqi Stock Exchange.
2) Research sample: (11) joint stock companies distributed among sectors (service, industrial, agricultural, hotels and tourism) intentional sample, according to the availability of current data on the shares of companies throughout the research period (2010-2020).

Literature Review

The first axis: concept and importance

Companies seek to measure future stock returns to determine the company's

performance level, and this return represents the motivation for investors to invest capital in order to obtain returns, and the main goal of any company is to maximize the return on shares (Mugenda et al.,2022; Sánchez & García, 2021), because the high return in the company reflects The company's ability to generate profits, which the company can use to develop the company's performance in the future and the consequences of this profit from the dividends paid to investors Calculated by the ratio between portfolios for the purpose of holding these portfolios separately, for example (the ratio between returns of large stocks and returns of small stocks) factors are measures of market risk between portfolios (Wallin & Chapman, 2021; Sha, 2021).

Profitability is one of the characteristics that the company enjoys in order to predict the expected returns on shares, provided that profitability tends to achieve positive effects on the return on shares, according to the theory of "Miller and Modigliani" that companies that achieve higher future profits lead to higher returns on shares on the basis of future profitability by controlling With the other variables, and linking the negatives of profitability with the fixed expectations of investors and the reluctance to amend the profit-related information (Dan,2021; Sohail et al., 2021), that the rise in profits and the ratio of the book value to the market leads to higher expected returns (Lind & Sparre, 2016:19), the variable profitability Measured by total profits to assets is characterized by the same explanatory power such as equity from book value to market in clarifying the average return on shares through the interactions between these returns, as long as the relationship is positive between profitability and average returns on shares, profitable companies achieve a higher average return on shares compared to companies Unprofitable (Silvia & Griska, 2021:87), Fama and Franch examine the three variables, book-to-market (B/M), profitability, and the effects of investment), which relates to expected stock returns according to the dividend discount model and valuation equation, it implicitly confirms the valuation theory that higher investment rates are associated with lower expected returns when controlling for B/M ratio and profitability, while controlling for two other variables, Highly profitable stocks have higher returns per share. There is a positive relationship between profitable companies and expected returns. By controlling equity (B/M), average returns are positively correlated with profitability. A negative relationship appears between average returns and investment (Jiao & Lilti, 2017:12), so estimating the risks and returns of stocks is important to investors, that the profitability measured by the total profit has the same level of strength as the book-to-market ratio to calculate the expected return of the shares, the profitability has a positive impact on the expected return per share using the total profit to assets, that FF5M can better predict earnings per share, that stock returns are positively and significantly correlated with book-to-market (HML) HML (Marozva, 2020:643), Modigliani and Miller argue the positive relationship between company earnings and expected earnings per share, which is consistent with valuation theory, that this positive relationship Based on future dividend payments, this model assumes that the market value of equity is the sum of the present value of the expected earnings, of the expected return on the stock and through "controlling" In the expected earnings of a portion of equity and expected changes in the book value of the shares" (Kim & Phan, 2020:12), it has three predictions (Bektić et al., 2019:8):

1) Companies with greater book-to-market ratio produce greater expected return on shares.
2) Companies that have higher expected profits compared to the current book value of equity produce higher expected returns on shares.
3) Companies with more expected growth in book value of equity due to the reinvestment portion of equity produce lower return per share.

Shares can be classified according to four portfolios, first classified into two portfolios, one large and the second small, where the first portfolio is classified as a large stock portfolio

(B) into two portfolios, one of which is large, whose values are greater than the value of the average factor, and the second is large, whose values are close to the value of the average factor, and then the second portfolio is classified The Small Stock Portfolio (S) is divided into two portfolios, a small portfolio that is close to the average factor and the second is a small portfolio that is less than the average value, and then the four portfolios are classified into two portfolios, a large portfolio and a small portfolio, and according to the specified equations, each factor is reached:(Dirkx & Peter, 2020: 680).

The method of compiling stocks in portfolios according to the Fama and French five-factor model does not depend on linear or quadratic programming, but appears as a modification of the classical stratification according to three stages of aggregation (Paliienko, 2020: 145-146):

1) Distribution of shares on the large and small size of companies according to market value.
2) Distribution of shares within large and small portfolios using the five factors.
3) Arrange the stocks into individual quantities within six portfolios according to the factor of volume and the intersection of each of the five factors.

The second axis: the mathematical formula for FF5M

Fama and French developed the FF3 model by adding two factors - RMWt (profitability) and CMAt (investment), which resulted in the five-factor model of Fama and French, where the factors take into account the differences in the assets of companies in terms of profitability and investment ratio, and the evaluation model was the motive for deduction of dividends. To expand the original model with two new factors, because Fama and Franch consider the expected profits as a monetary factor of the expected returns, and accordingly, the equation of the Fama and Franch model becomes as follows (Lindqvist, 2021:14):

$$FF5F: Rit - RFT = ai + \beta i\,(RMT - RFT) + si\,SMBt + hi\,HMLt + ri\,RMWt + ci\,CMAt + eit$$

Since

Rft: the risk-free rate of return, Rit – Rft: the returns per share or portfolio, RM, T – Rft: the market returns (market factor), SMB: the volume factor representing the difference between the returns of a portfolio with market capitalization (small) and (large) , HML: is the value factor (high, low) B/M and represents the difference between the returns of a portfolio of stocks with B/M (high and low), RMWt: the profitability factor (strong - weak) represents the difference between the return on diversified portfolios of stocks with strong and weak profitability CMAt : The investment factor (high - low) represents the difference between the return on the various portfolios of low and high stocks, respectively, (βi, si, hi, ri, ci): the degree of sensitivity of the common stock to risk factors in addition to its sensitivity to each of the model factors, eit: random wallet error.

The Fama and French five-factor model in our research consists of the factors (market or market risk premium, size, book-to-market value, profitability, and investment) as shown below:

The first factor: the market factor or market risk premium R_m-R_F, representing the difference between the expected return in the market and the risk-free rate, the market factor is already present in the CAPM (Gharaibeh et al., 2020:620).

The second factor: size, represented by the small level minus the large basis (SMB), and the size factor is represented by the returns of the difference between small and large-sized companies in the stock market, this factor indicates the small effect where the performance of smaller companies outperforms the larger companies, because they have growth opportunities More than their larger counterparts, small businesses tend to have a more volatile business environment that is more prone to risks than they need to be compensated for through higher expected returns. The size factor is calculated according to the following formula (Zhang et al.,2021:8):

$$\mathbf{SMB} = \frac{(R_{SS}+R_{BS})}{2} - \frac{(R_{SB}+R_{BB})}{2}$$

Since:

SMB: the difference between the actual returns for the portfolio of large and small stocks classified according to the size factor of companies, R_SS: the actual returns for the portfolio of stocks of small companies with a small size, R_BS: the actual returns for the stocks of large stocks of small companies, R_SB: the actual returns for the stocks of stocks of small companies with a size of small companies High Volume, R_BB: Actual returns for a large portfolio of high-volume stocks.

The third factor: book value to market, on a high minus low basis (HML), this factor is calculated due to the difference in returns between value and growth stocks, value stocks represent companies with high book-to-market ratios, while developing stocks represent companies with low ratios of Book-to-market (growth shares), this factor refers to the direct application of the risk-reward relationship, and that the HML factor is related to the effect of leverage, and the HML factor is calculated according to the following formula (Lindqvist & Löthner, 2021:26):

$$\mathbf{HML} = \frac{(R_{SH}+R_{BH})}{2} - \frac{(R_{SL}+R_{BL})}{2}$$

Since:

HML: the difference between the actual returns of the stock portfolios of large and small companies classified according to the factor of book value to market value B/M, R_SH: the actual returns of the portfolio of stocks of small companies with a high B/M, R_BH: the actual returns of a portfolio of large companies with a high B/M , R_(SL): Actual returns for a portfolio of small stocks with a low B/M, R_BL: Actual returns for a portfolio of stocks of large corporations with a low B/M.

The fourth factor: profitability, on a strong minus weak basis (RMW), represented by the difference in return between companies with strong and weak profitability, this factor is calculated by dividing earnings before interest and taxes (EBIT) by book equity, the RMW factor must be positive, which means that Larger profitable companies provide better results, and the value of the RMW profitability factor is calculated according to the following formula (Soltani et al., 2022:9):

$$\mathbf{RMW} = \frac{(R_{SR}+R_{BR})}{2} - \frac{(R_{SW}+R_{BW})}{2}$$

Since:

RMW: the difference between the actual returns of the portfolio of stocks of large and small companies classified according to the profitability factor , R_SR: the actual returns of the

portfolio of stocks of small companies with strong profitability , R_BR: the actual returns of the stocks of stocks of large companies with low profitability , R_SW: the actual returns of the stocks of stocks of small companies with a profitability factor Weak, R_BW: Actual returns for a portfolio of stocks of large companies with poor profitability.

Fifth factor: CMA investment, equal to the difference between the average return of the small / large-sized and high-investment portfolio and the average return of the small / large-sized and low-investment portfolio (Zhang et al., 2021:9), calculated as the difference in returns between companies with Low and High Investment Strategies (Acaravci, 2017:133), and the CMA investment factor is calculated according to the following formula (Höçük, 2022:38):

$$\mathbf{CMA} = \frac{(R_{SC}+R_{BC})}{2} - \frac{(R_{SA}+R_{BA})}{2}$$

Since:

CMA: the difference between the actual returns of the stock portfolios of large and small companies classified according to the investment factor, R_SC: the actual returns of the portfolio of stocks of small companies with high investment, R_BC: the actual returns of the portfolio of stocks of large companies with high investment, R_SA: the actual returns of the portfolio of stocks of small companies with investment Low, R_BA: the actual returns of a portfolio of stocks of large companies with low investment.

The third axis: Building the Fama & French hexagonal model by adding the debt factor (FF6M-DLE):

Borrowing (debt) is one of the financing tools in most companies according to the size of the company and the nature of its activity. Liabilities to equity ie the creditors' contribution to the company's assets compared to the owners' contribution (equity). Financial leverage is generated from fixed costs represented by loan interest and preferred stock dividends.

When the company obtains its assets from the shareholders' money in addition to the debts borrowed from the creditors, if the owners' contribution percentage represents the largest part compared to the borrowed funds, it increases the creditors' reassurance in terms of the company's ability to pay its financial obligations towards them (Yuniarti et al., 2022:3911).), leverage ratio (DER) reflects the viewpoint of investors, financial ratios are used in making the decision regarding investment, the impact of the profitability movement for each share (Taani, 2011: 203).

Since the cost of loans is less than the cost of financing the property due to tax savings "subtracting interest from loans", it affects the market value of the company and thus leads to maximizing the return on the right of ownership, and accordingly the researcher focused when forming the debt factor portfolio on companies with high and low financial leverage and taking a combination of From the actual returns of companies with high and low financial leverage for the shares of large and small companies to reduce the risks resulting from financial leverage and thus reduce the negative effects on the company's returns, and accordingly the researcher reached the equation below:

$$\mathbf{DLE} = \frac{R_{BT}+R_{BE}}{2} - \frac{R_{ST}+R_{SE}}{2}$$

Since:

DLE: the difference between the actual returns of the portfolios with shares of large and small companies classified according to the corporate indebtedness factor, R_BT: the actual

returns of the portfolio of stocks of large companies with high leverage, R_BE: the actual returns of the portfolio of stocks of large companies with low leverage, R_ST: the actual returns of a portfolio of stocks High Leverage Small Companies, R_SE: Actual returns for a portfolio of small companies with low leverage.

Fourth axis: the practical aspect of research

The researcher's idea is summed up by adding the indebtedness factor to the Fama and French pentagonal model to build a hexagonal model for Fama and French, as

Table (1) ***shows the value of the indebtedness factor for the portfolio of the research sample companies during the research period (2010-2020)***

year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Factor DLE	0.82	0.02	1	1.55	−25.1	−2.14	0.32	−1.03	0.59	0.49	0.28

It is noted from Table (1) that the portfolio of the research sample companies achieved the highest value of the indebtedness factor in 2013, as it reached (1.55) and then begins with a significant decrease in the value of the indebtedness factor during the years (2013-2015), which indicates a decrease in the financial leverage of the research sample companies and then increased The value of the indebtedness factor reached (0.32) in 2016, and begins to decline during 2017, then rises in 2018 to (0.59), then decreases during 2019 and 2020 to (0.49, 0.28), respectively.

After reaching the value of the indebtedness factor, it was added to the Fama and French five-factor model to analyze the impact of indebtedness on the required rate of return), and the researcher symbolized the debt factor with (DLE),, and Table (3) shows the required rate of return according to the model proposed by the researcher, the Fama and French hexagonal model (by adding the indebtedness factor):

Table (2) *The required rate of return according to the (FF6M-DLE) model for the research sample companies during the research period (2010-2020)*

Year/ Company	Karkh	Transport	globe	Mansour	Babylon	carpet	invasive	Canadian	clothes	agricultural	meat	average
2010	0.14	0.94	0.35	0.17	0.50	0.26	0.83	0.24	2.90	4.20	0.17	0.97
2011	0.14	0.84	0.35	0.17	0.58	0.27	0.81	0.26	4.60	3.86	0.18	1.10
2012	0.16	0.94	0.38	0.16	0.56	0.25	0.82	0.24	4.74	2.90	0.15	1.03
2013	0.17	0.77	0.36	0.16	0.50	0.26	0.76	0.23	4.13	2.83	0.18	0.94
2014	0.14	0.80	0.34	0.19	0.56	0.25	0.82	0.25	4.03	4.07	0.18	1.06
2015	0.15	0.84	0.37	0.18	0.60	0.29	0.89	0.24	4.29	3.43	0.16	1.04
2016	0.13	0.81	0.36	0.19	0.49	0.28	0.74	0.26	4.68	4.48	0.18	1.15
2017	0.16	0.86	0.37	0.17	0.48	0.28	0.74	0.23	3.58	3.01	0.15	0.91
2018	0.17	0.84	0.36	0.16	0.60	0.25	0.86	0.26	3.72	3.53	0.16	0.99
2019	0.16	0.75	0.36	0.16	0.50	0.27	0.79	0.23	4.39	3.00	0.17	0.98
2020	0.14	0.76	0.35	0.18	0.54	0.27	0.73	0.25	4.78	4.12	0.18	1.12
General Average	0.15	0.83	0.36	0.17	0.54	0.27	0.80	0.24	**4.17**	**3.58**	0.17	1.03

Table (2) shows a significant increase in the average required rate of return for the clothing company, as it reached (4.17), followed by the agricultural company with a rate of (3.58). The return required by investors according to the model, and the average required rate of return for Al Karkh Company was (0.15), and the Transportation Company, Al Mamoura and Mansoura Hotel recorded the average required rate of return according to the model, which amounted to (0.83), (0.36) and (0.17), respectively, and it was The average required rate of return for the Babylon Hotel Company is (0.54), the Carpet Company is (0.27), the gas company has recorded an average required rate of return of (0.80), and the Al-Kindi and Meat Company has recorded an average required rate of return of (0.24) and (0.17), respectively.

1. Comparing the market closing price with the fair value of the share according to the share equivalent verification model using the required return according to the FF6M-DLE model (by adding the indebtedness factor)

The researcher used the required rate of return according to the FF6M-DLE model (by adding the indebtedness factor) in evaluating the common shares according to the equivalent verification model, as Table (3) shows the determination of the fair value of the share according to the FF6M-DLE model (by adding the indebtedness factor) and comparing it with the market price to determine Matching the model in the Iraqi Stock Exchange.

Table (3) *The fair value of the share according to the equivalent verification model using the required rate of return FF6M-DLE*

Year/ company	Karkh	Transport	globe	Mansour	Babylon	carpet	invasive	Canadian	clothes	agricultural	meat	average
2010	0.38	2.54	0.94	0.47	1.37	0.70	2.25	0.66	7.87	11.42	0.46	2.64
2011	0.37	2.30	0.97	0.45	1.59	0.74	2.23	0.71	12.68	10.63	0.50	3.02
2012	0.41	2.37	0.95	0.40	1.42	0.64	2.08	0.61	12.01	7.35	0.39	2.60
2013	0.41	1.83	0.87	0.38	1.19	0.61	1.83	0.56	9.88	6.76	0.43	2.25
2014	0.42	2.35	1.01	0.55	1.63	0.75	2.40	0.74	11.82	11.92	0.54	3.10
2015	0.40	2.27	0.99	0.49	1.62	0.78	2.42	0.65	11.65	9.30	0.44	2.82
2016	0.45	2.74	1.21	0.65	1.66	0.97	2.51	0.87	15.91	15.23	0.60	3.89
2017	0.76	4.17	1.81	0.84	2.32	1.36	3.58	1.11	17.42	14.63	0.75	4.43
2018	0.58	2.94	1.26	0.56	2.09	0.88	3.00	0.90	12.96	12.28	0.55	3.45
2019	0.68	3.21	1.53	0.68	2.16	1.16	3.36	0.98	18.80	12.82	0.71	4.19
2020	0.40	2.09	0.96	0.50	1.48	0.75	2.03	0.68	13.18	11.38	0.49	3.09
average	0.48	2.62	1.14	0.54	1.68	0.85	2.52	0.77	13.11	11.25	0.53	3.23

It is noted from Table (3) the highest average of the fair value of the stosk according to the equivalent verification model using the required rate of return FF6M-DLE recorded by the clothing company, which amounted to (13.11), and the lowest average of the real value of the share recorded by Al-Karkh Company, which amounted to (0.48), while the year was recorded (2017) had the highest average value of the share, which amounted to (4.43), and the lowest average of share prices in the year (2013), which amounted to (2.25).

When comparing the fair value of the shares of the research sample companies according to the equivalent verification model "using the required rate of return according to the FF6M-DLE model" with the market value of the share (closing price), the deviations between the real value and the market value of each company are determined, which is illustrated by Table (4):

Table (4) *Comparison of the market closing price with the fair value of the stock according to the equivalent verification model using the required rate of return according to the FF6M-DLE model*

Year/ company	Karkh	Transport	globe	Mansour	Babylon	carpet	invasive	Canadian	clothes	agricultural	meat
2010	9.63	15.88	0.97	20.77	27.74	2.90	0.81	1.58	3.86	4.79	4.62
2011	10.34	52.40	1.64	19.75	22.92	3.01	0.49	2.41	4.44	2.92	5.36
2012	7.49	28.02	2.05	18.16	18.44	2.80	0.42	2.36	3.54	1.69	6.20
2013	5.16	57.40	2.35	15.00	30.98	2.50	0.82	1.37	3.45	4.63	5.64
2014	11.90	17.79	2.74	11.92	55.42	2.48	0.10	0.38	2.39	0.41	5.19
2015	3.86	9.00	2.03	10.38	24.31	2.47	0.37	0.32	1.41	0.99	2.98
2016	3.54	7.15	0.79	9.80	21.81	2.96	0.004	0.06	0.85	5.64	2.18
2017	2.57	7.52	0.06	6.49	24.88	4.76	0.63	0.25	3.06	4.94	5.08
2018	2.54	9.10	0.43	6.87	29.99	4.78	0.42	0.25	0.49	2.46	3.14
2019	2.92	10.50	0.16	6.23	51.51	5.44	0.05	0.50	4.46	0.55	2.86
2020	2.79	11.61	1.49	6.01	53.82	6.54	1.50	0.48	0.92	0.90	2.91

It is noted from Table (4) that the lowest standard deviation between the market closing price and the fair value according to the equivalent ascertainment model using the required rate of return according to the FF6M-DLE model in Al Karkh Company was in (2018) with a deviation between the two values amounting to (2.54), and the highest deviation The standard deviation in the year (2014) was (11.9), so the year (2018) was the closest to the application of

the models in the Iraqi stock market for Al-Karkh Company, with a standard deviation rate of (5.70), while the transport company recorded the lowest standard deviation in (2016) by (7.15) between the closing price and the real value is evidence of the high accuracy of the model in determining the fair value of the share in that year, while its highest standard deviation in the year (2013) was (57.40). The high deviation value indicates the weakness of the model in determining the fair value of the company Transportation The standard deviation rate of the transportation company was (20.58), and Al Mamoura company recorded a standard deviation from the two values, which reached its lowest value in the year (2017) at (0.06) and the highest value was (2.74) in the year (2014) with an average of (1.34), and it recorded Mansour Hotel Company, the lowest standard deviation in the year (2020) amounted to (6.01) between the closing price in the market and the value fair, and that the highest standard deviation of the company in the year (2010) was (20.77), and the average deviation between the values was (12.32) for the company. The Babylon Hotel Company recorded its lowest standard deviation in the year (2012) of (18.49), and that the highest standard deviation of the company (55.42) for the year (2014) at a rate of (32.89), and the carpet company recorded the lowest standard deviation between the two values in (2015) at a rate of (2.47), and the highest standard deviation for the company in the year (2020) was at (6.56) and at a rate of (3.70), while Al-Ghazia Company recorded its lowest standard deviation in the year (2016), which amounted to (0.004), and the highest standard deviation amounted to (1.50) in the year (2020) at a rate of (0.51), and Al-Kindi Company recorded the lowest standard deviation in the year (2016) which amounted to (0.06). The highest value in the year (2012) was (2.41) with a company deviation rate of (0.91), and the clothing recorded the lowest deviation in (2018) by (0.49), and the highest deviation in 2019 was (4.46) with a rate of (2.62), while the agricultural company recorded The lowest standard deviation in (2014) was (0.41) and the highest deviation in (2016) amounted to (5.64), with an average of (2.72) for the company, while the meat company recorded the lowest deviation in (2016) at (2.18) and the highest deviation in (2012) amounted to (6.20) and rate deviation Standard (4.20).

Fifth axis: hypothesis testing

In this axis, the results of the statistical analysis are presented to test the research hypotheses and measure the impact of each of the independent variables on the dependent variable:

(The Fama and French six-factor model - indebtedness does not have a significant effect on the equivalent ascertainment model) In order to test the hypothesis, the researcher directed to use simple linear regression through the (SPSS V.28) program, and the results were as follows:

Table (5) *The effect of the FF6M-DLE model on the Equal Assurance Model*

independent variable	Dependent Variable: Equivalent Assurance Model							
FF6M-DLE	R^2	β0	β1	T	P-V	F	T_{able}	F_{Table}
	0.102	1.117	0.320	1.013	0.338	1.026	2.228	4.964

DF=10

It was found that the value of the interpretation coefficient (0.102) with a probability value (0.338), which is more than the probability value (0.05), and the value (F) calculated for the model (1.026), which is less than its tabular value (4.964) at the degree of freedom (10), which indicates that there is no The significance of the interpretation model, as this result allows accepting the third sub-hypothesis (the Fama and French six-factor model - indebtedness does not have a significant effect on the equivalent certainty model), but on the level of influence, the marginal slope value was (0.320) and the calculated T value (1.026). It

is less than its scheduled value (2.228) and its probability value (0.338).

Sixth Axis: Conclusions and Recommendations

Conclusions

1) The hexagonal model of Fama and Franch, when adding the indebtedness factor to the five-factor model of Fama and Franch, proved the high rate of return required for all companies in the research sample compared to the required rate of return according to the five-factor model.
2) The role of using borrowed finance in investments in achieving higher returns in accordance with the positive relationship between return and risk, which indicates the company's profitability and thus is reflected in the increase in ordinary stock prices.
3) The fluctuation between the fair share prices when using stock valuation models, where the fair value of the shares of some companies is very high and in return the market value of the share is low, which indicates that the decision taken by the investor is shadowed due to the limited information and rationality of the investor in the financial market, which is reflected on common stock prices.
4) When determining the required rate of return according to the Fama and French hexagonal model by adding the indebtedness factor proposed by the researcher in determining the prices of ordinary shares, it was noticed that companies depended on the indebtedness factor greatly, which corresponds to a high risk and thus reflected on the prices of ordinary stock.

Recommendations

1) Making deliberate decisions when financing with debt and investing loans in well-studied investments in a profitable manner, which contributes to achieving higher returns and thus is reflected in the increase in the share prices of these companies.
2) Studying the relationship between indebtedness and stock returns and encouraging banks to invest their surplus funds to support long-term financing for companies to invest opportunities to increase corporate profitability.
3) The need for companies to go towards using the optimal mix of owned and borrowed financing, which contributes to reducing the risks borne by the company and thus is reflected positively on the prices of ordinary shares in the financial market.
4) Companies focus on enhancing the share of profitability per share because of their role in attracting investors to buy shares of profitable companies and thus the possibility of profitable companies to raise the prices of their ordinary stock.

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