Assessment of The relation between systematic risk and debt to cash flow ratio

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***Abstract*— The purpose of financial accounting data and insight to assist decision-making by their own organizational performance. While the aim of the research is to evaluate the usefulness of accounting information to investors and other users of financial reporting accounting, which is a great source for information about the investment that is required for any investment decision. Cash flow information to users of financial statements to obtain information about the use of financial resources during a time period. In particular, if cash flow is the kind of information that includes details of the operations, investing, and financing activities gives. Financial statements do not reflect accrual and cash flows of information about one of the major weaknesses of the financial statements of commitment. In such circumstances, it is assumed that the lack of information about cash flows can be both internal and external decision-makers astray. Investment is essential in the process of economic development of the country. Factors influencing the choice of investment, investment risk and return on investment. Investors are trying to ensure the highest return on investment funds somewhere and have the lowest risk. Therefore, companies should focus on profit besides, the maximum efficiency and manage risk as a limiting factor. Unlike return, risk and non-quantitative concept in mind, therefore, more efforts on economic and financial experts to identify and measure risk is concentrated.**

***Index Terms*— Systemic risk, current and non-current liabilities, operating cash flow**

I. INTRODUCTION

The most important factor in the decision to purchase the shares is effective and risk-return performance compared with other investment opportunities. Thus, investments, risk and return are key. The purpose of measuring risk, enhance the ability to make better decisions. It may be argued that the difference between a company's systematic risks is due to differences in financial decision making. So the question is whether there is a relationship between systematic risk of equity and financial ratios? In other words, if the financial ratios such as debt to cash flow ratio, are able to explain the systematic risk? For managers, cash flows for each business unit is an important part of his responsibility, accountability and responsiveness of the owners of capital accounts. So many management decisions, the consequences associated with cash. On the other hand, investors, creditors, employees, customers and the ability of the entity to generate cash flows is becoming increasingly desirable to provide the resources that are available to the entity, are concerned. Certain financial ratios and leverage ratios of debt to help the stakeholders to evaluate the entity's financial structure is. It is important to establish whether the debt has no effect on cash flows of the business and will have this respect do with systemic risk. Relation debt to cash flow ratio is often used in financing large corporations. This study examines the relationship between vehicle and parts manufacturing industry's focus from basic metals. The purpose of Jahankhani portfolio theory and asset pricing model study of investment (CAPM) Applied research aimed to examine the association between systemic risk in the financial ratios to assist investors in corporate shares are priced correctly. [13]

The research questions to be answered are as follows:

The relationship between the ratio of debt to cash flow and if there are highly correlated with systematic risk, how much is it?When two pieces of basic metals in the automotive and non-current liabilities Current and compare the behavior of the variables, how? Assumptions:

1. The ratio of total debt to cash flow is a significant correlation with systemic risk.

1.1 The ratio of total debt to cash flow to systemic risk auto parts industry, there is a significant relationship.

1.2 The ratio of total debt to cash flow to systemic risk in the basic metals industry, there is a significant relationship.

2. The ratio of current liabilities to cash flow is a significant correlation with systemic risk.

The current ratio of debt to cash flow to systemic risk auto parts industry, there is a significant relationship.

2.2 The current debt to cash flow ratio of basic metals industry with systemic risk, there is a significant relationship.

3. Non-Current ratio of debt to cash flow, there is a significant association with systemic risk.

3.1 Non-Current debt to cash flow ratio of systemic risk auto parts industry, there is a significant relationship.

3.2 Non-Current debt to cash flow ratio of basic metals industry with systemic risk, there is a significant relationship.

Place the design and physical planning

The current research in the field of public company listed securities Fischer of Tehran. [8]

And its data using Belkaoui, the official website of the Tehran Stock Exchange and CDs containing financial information listed companies in Tehran Stock Exchange, has been gathered. [3]

The subject

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This paper examines and tests the relationship between the ratio of debt to cash flow to systemic risk in firms listed in Tehran stock exchange deals.

Period Research

The research was 6 years since 1386 to the year 1391 on firms listed in Tehran Stock Exchange was.

Risk measurement procedures

One of the best known methods for measuring risk, the variance or standard deviation of the returns-is expected. The dispersion of returns around the expected value, as measured by the variance or standard deviation higher (with all other factors being equal) distribution represents more. Another way to measure risk tolerance is. In contrast to methods of measuring all the deviations from forecasts are analyzed.

Expected rates of return

If each possible outcome multiplied by the probability that we have achieved together and then answer it, then we get a weighted average of possible outcomes. Weight, the mean probability weighted expected return rate is the same.

$$R = P_1R_1 + P_2R_2 + ...P_nR_n = \sum_{i=1}^{n} P_iR_i$$

Downside

Expected rate of return for a portfolio is the weighted average of expected rates of each investment in the portfolio,

Each weight is: Each value in the value of investments and the formula for calculating the expected return for each portfolio are:

$$E(port) = \sum_{i=1}^{n} W_i E(R_i)$$

Variance (SD) performance of an investment

A standard measure of the rate of return may be (Ri) the expected rates of return (E (Ri)) and is calculated as follows.

$$Var(\delta^2) = \sum_{i=1}^{n} [R_i - E(R_i)]^2 P_i$$

$$SD(\delta) = \sqrt{\sum_{I=1}^{N} [R_i - E(R_i]^2 . P_i}$$

Where: Pi is the probability of rates of return may.

Variance (standard deviation) of portfolio returns

Before stating the portfolio variance formula is the concept of covariance, and correlation explained.

Covariance returns

A standard measure of the variability of the variable used to calculate the average for each of them over time. Portfolio analysis, usually due to covariance rates of return. No price or other variable. Positive covariance means that the rate of return on investment to move in one direction than the average of each of them during a specified period, tend. Negative covariance indicates that the rate of return on their investments tend to average over a specified interval of time to change direction.

Covariance value, the variance of returns for each series of Securities and depends on the relationship between the series converges. Covariance rates of return of asset j, i is defined as follows.

$$Covi, j = E[R_i - E(R_i)][R_j - E(R_i)]$$

If the rate of return on a share of the average rate of return on the share over a given period is higher (lower) rate of return and other share in the same period, the higher (lower) than the average rate of return is the result of the deviation of the mean, is the positive, if this happens repeatedly, the covariance of return of the shares allocated to the large positive value. However, if the rate of return higher than the average rate of return of the shares at the same time his other contribution rate of return is lower than the average rate of return will be negative consequences. If you are constantly moving in the opposite direction occurs, the covariance between the rates of return on the share allocated to the large negative value. Covariance and correlation of stock returns affect the variability of each of the two series agree. Covariance between asset returns may indicate a positive correlation (negative) is weak. If each of the two series is unstable and has high variability, or it may represent a positive correlation (negative) is strong, if the two series are stable returns. If we change the terms of the covariance of the return series, the standard we have come in this way.

$$r_{i,j} = \frac{Covi, j}{\delta i \delta j}$$

In which: Ri,j= A correlation of returns, δi = Standard deviation R_{it} , δ_j = Standard deviation Rjt. Covariance of returns by the standard deviation, correlation coefficient (3ij) which can only be obtained in the range of (1 + and 1 -) to change. Value of +1 indicates a perfect positive linear relationship will. This means that the movement of the stock returns will be completely linear. The value -1 indicates a perfect negative linear correlation between the two series is efficiency. So that if the rate of return on a stock's rate of return is higher than average. Other stock returns as its value will be less than the average rate of return.

Formula for the standard deviation of the portfolio

Standard deviation of the return on a portfolio of assets can be calculated as a measure of portfolio risk.

The general formula for calculating the standard deviation of Markowitz portfolio

$$\delta_{port} = \sqrt{\sum_{i=1}^{n} W_i^2 \delta_i^2 \delta_j^2 + \sum_{i=1}^{n} \sum_{j=1}^{n} W_i W_j Cov_{i,j}}$$

In which: δ_{port} = Standard deviation of the portfolio, W= Standard deviation of the portfolio, δ_i^2 = The variance of the rate of return on asset i, δ_j^2 = The variance of the rate of return on asset j, $Cov_{j,i}$ = Covariance between the rates of return of asset i and j:

$$Cov_{i,j} = r_{i,j}\delta_i\delta_j$$

This formula shows that the standard deviation of a portfolio of assets and function of the weighted average of their variances (whose weight is a power of 2), plus the covariance between all assets in the portfolio is weighted. The standard deviation of a portfolio of assets includes not only the variance of returns of each asset is the covariance between the two assets are to be included.

Efficient Frontier

Portfolios that maximize return on a given level of risk or the risk that a given level of performance is caused. Figure 1 shows that the portfolio is the most efficient border returns with minimal risk with a rate of return equal to or lower than other portfolios that are efficient border is the.

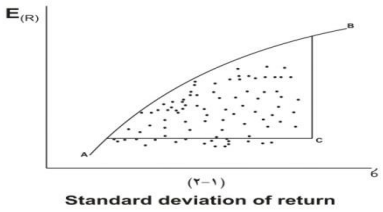

Figure 1: Efficient frontier for different portfolio

Investors on the basis of their utility function and the risk of reaching a point on the efficient frontier. Any portfolio on the efficient frontier than other portfolios on the border, is superior. All these portfolios have different return and risk, knowing the risk, the expected return rate also increases.

Capital Market Theory

To establish a scientific theory, it is necessary to adopt a set of assumptions this work theorists to develop a theory that explains whether on how some of the world's surface will respond to changes in the environment, focus. First, should the assumptions underlying the theory of capital markets, and then observes the fundamental assumptions of who they are, techniques for combining the investment portfolio in order to achieve the optimal portfolio will be created to examine the.

Assumptions of Capital Market Theory

Since the theory of Karunarathne portfolio model based on the assumptions of the model portfolios in addition to the assumptions described below are established. [37]

1. All investors, investors Karunarathne model is defined as work that wants to achieve the optimal point on the efficient frontier. Located on the point of the efficient frontier curve to select a specific portfolio risk and return of the investor's utility depends.
2. Investors can any amount of money you want to borrow or lend at the risk-free rate of return.
3. All investors have the same expectations. In other words, they have the same probability distribution to estimate future rates of return.
4. all investors, investment horizon is identical (eg, 1 month, 6 years, 1 year,...) Are. This will require a different time horizon investors are risk measures and risk-free assets in accordance with their investment horizons of their choice.
5. all investments, there are infinitely divisible. Buy and sell curves that are part of the assets or portfolios.
6. any tax and transfer fee on sales of assets there. In other words, the transaction costs are often financial instruments is very small, less than 1%.
7. There is no inflation or changes in interest rates or that are quite predictable.
8. The capital markets are in equilibrium. This means that all investments strictly according to their risk level, priced.

Developing Capital Market Theory

The major factor that makes up the portfolio theory, capital market theory, the concept is the risk-free asset.

Market portfolio

Because the tangent point of the curve is the portfolio M, So the best possible on-line portfolio and located that it's going to be a person wants to borrow or lend a hand on the spot. Thus, the portfolio must include all risky assets if there is a risk of an asset within the portfolio is not, and does not have the funds to invest in it, there is a demand for it and therefore worthless assets. Because the market is in equilibrium with respect to all assets to market value of the portfolio shares.

Measure diversification

Previously mentioned all the CML portfolios that are perfect positive correlation, which means that the portfolio of CML with the market portfolio M (which is full of variety) are a perfect correlation. This implicitly suggests a measure of diversification is perfect. To put it more clearly, which is quite diverse portfolio of asset correlation coefficient is +1, the market portfolio is quite logical.

For the full diversity of the systematic elimination of all non-unique, one of the assets to be removed when all the non-systematic risk, systemic risk will remain just stay. Which can not be eliminated by diversification. So a portfolio that has a correlation with the market portfolio is very diverse because it includes systemic risk. Diversification and eliminate unsystematic risk. The purpose of diversification, reducing the standard deviation of the portfolio. With regard to the assumption that the correlation between securities is incomplete, so adding new securities in the portfolio, the portfolio reduces the average covariance. The important question, whether the number of securities to be included in the portfolio has a diverse portfolio reached? To answer these questions, we must increase the size of the portfolio by adding the number of securities that have a positive correlation between what happens. Generally between 5.0 and 6.0 is the correlation between securities America (Riley 2012). [24]

A series of studies, the mean and standard deviation of the portfolio that is randomly selected, different sizes to be examined and tested. For example, Evans and Archer, the standard deviation of a portfolio of more than 20 contribution has been calculated, the results showed that the maximum benefit of diversification is achieved, at the beginning of diversification is then gradually reduced and trend finds. To put it more clearly, 90% of the benefits of diversification in a portfolio consisting of 12 to 18 shares acquired. [7]

Meir Statman has the advantage of diversifying the transfer costs resulting from the addition of new shares under the contract. The results showed that the portfolio is well diversified investor for a borrower must be at least 30 shares and 40 shares to an investor is the lender. [35]

If the correlation between the number of new shares of stock in a portfolio, incomplete, you can add new shares in the portfolio reduces the standard deviation of the portfolio. The variability can not be eliminated. The standard deviation of a portfolio when the market reaches the level of portfolio diversification is complete and all the unsystematic risk is eliminated. With all of these problems still exist and can not market risk or systemic risk due to variability and lack of confidence in macroeconomic factors that affect eliminate the all powerful assets. Still, it can be reduced. The diversity of the world, have lower levels of systemic risk. Because some of the systemic risk in a country with systemic risk in other countries are uncorrelated variables. As a result, if the world

is diversifying to reach the global systemic risk (Reilly 2014). [25]

Literature

Research in this field can be divided into 2 categories: The first group of studies on the relationship between the independent variables were evaluated with the topic. Like these references [5], [10], [14], [21], [29], [30], [34].

Second category: studies have investigated several variables, such as the study of these references [2], [4], [9], [15], [17], [22], [23], [25], [32], [33], [36].

Ball study the effect of capital structure on the systematic risk of common stock entitled to link the 2 series of financial problems (MM Capital Structure Theory and Capital Asset Pricing Model) did. The Capital Asset Pricing Model and the Theory of Capital Structure MM loan of any amount, assuming a fixed number of shares increases the investment risk or in other words, the debt ratio is higher than the return on assets of its covariance with the market portfolio return is greater Hamada their study, the purpose of several. [1]

The first one it was an attempt by the impact of financial leverage on systematic risk analysis of the linkages between finance corporations and establish a portfolio of securities. The second objective MM tried to test that theory. The third objective if the MM theory is valid for estimating the cost of capital a firm offer. Ball in the first study to illustrate the theoretical relationship between the theory of capital structure MM in CAPM model used by the following equation and then extract the systematic risk of generalized CAPM model.

$$(X - I)(1-t) - P_t + \Delta G_t = D_t + C_{gt}$$

X earnings before interest and taxes, I interest and other fixed costs over a period of, t tax rate, P_t preferred stock dividends, ΔG_t changes in the company's growth rate, D_t ordinary Dividends, C_{gt} changes in the market price of ordinary shares. After a theoretical study, Hamada to the conclusion that the systematic risk of the company that is debt free debt is higher than the average company. To prove this theorem, 3004 practical part of the New York Stock Exchange and with the assumption of the validity of the theory of Modigliani and Milo adjustment and efficiency of payment. Thus, the rate of debt and preferred stock if the company does not have in its capital structure will be. [20]

The differences observed between systematic risk, [1] βB and systematic risk-adjusted rate of return on the financial leverage ratio is βA [2]. Hamada result of practical study companies were selected by Modigliani and Miller theorem is valid assumption was that between 21 and 24% βA and βB is the result of financial leverage. [11]

If the covariance rate of return on assets, the variance is constant over time, the systematic risk of the market through efficient capital asset pricing model is the expected rate of return. Modigliani and Miller's theory predicts that the expected return on shareholders of the company without debt is a debt to. In other words, $E(R_{Bt}) \geq \in (R_{At})$ to the above inequality is true is that it Hamada $\beta A \langle \beta B$ studies revealed itself. [12]

This means that the samples used for the companies Modigliani and Miller's predictions have been confirmed. Effective contribution to the study of the relationship between theory and portfolio theory makes financing corporations. Breen study the relationship between leverage and operational risk was entitled. At the beginning of the theoretical risk (general and systematic) and a positive correlation with the variable costs of operating leverage is negative. To prove the hypothesis that operational risk is directly related to the operating lever, 3 industry homogeneity of the product (electrical, steel and oil) will be selected. [6]

In the first stage, variable costs and fixed the following time-series regression obtained from each participant.

$$TC_{jtj} = a_j + v_j Q_{jt} + u_{jt}$$

TC_{jt} Total operating expenses during the j th firm t, Q_{jt} Physical product j-th firm in period t

In the second stage, after the company's estimate of the coefficient of V_j using the general market risk, $\sigma(rj)$ standard deviation of monthly stock returns of the Company for a period of ten years (1958 to 1968) and the systematic risk as calculated $\beta(j)$.

The second stage of the 2 types of risk as dependent variables and variable costs in relation to the following cross-sectional regression estimated for each industry.

$$\sigma(rj) = \alpha_1 + b_1 v_j + \varepsilon_{1j}$$

$$\beta_j = \alpha_2 + b_2 v_j + \varepsilon_2 j$$

The results were all consistent with the hypothesis.

The dependent variables include: the rate of return, systemic risk and the risk of common stock.

The period of investigation from 1176 to 1993 was a period of 3 to 5 years (1981 to 1976) and (1987, 1982) and (1993 to 1988) was divided.

Salmi, Lintner, Markoqiz and Macve using multiple correlation, the correlation between a set of financial and market variables (rate of return - total risk and systematic risk) for each period, were tested. [31], [16], [18], [19]

The results showed that the ratios of financial market variables there unstable relationship. In other words, the relationship between financial ratios and market variables that change over time. Another part of the study, the financial ratios of the twenty-six key ratio decreased.

1. quick
2. The range of defensive measures
3. Debt to Capital
4. The return on equity (ROE)
5. The total asset turnover
6. Cash Flow for Sale

The results showed that 3 of the 5 years between 1976 and 1993, the financial ratios and market variables are statistically significant.

Internal investigation

Roll the effect of capital structure (leverage) on a regular systematic risk accepted in the Tehran Stock Exchange. [26]

[1] βB Systemic risk if the company is debt

[2] βA Systemic risk if the company has no debt

In this study, 26 companies listed in Tehran Stock Exchange in 1368, and has enabled the exchange of interest payments received loans were selected during the period (1368 to 1372) were examined.

The research hypotheses are:

1. The relationship between capital structure (financial leverage), the Company and the Company's common stock systematic risk in the Tehran Stock Exchange, there.
2. The observed distribution of shares in companies leverage systematic risk, leverage is greater than the non-systematic risk.

The results show that the average non-leveraged β is smaller than the mean β leverage. The use of leverage (debt) systematic risk in the stock market goes up. The non-leveraged beta distribution, the distribution of β Leverage the two communities were compared using analysis of variance. According to figures obtained from the study of non-leveraged stocks are smaller than the standard deviation (SD) stock lever in any industry.

Roll in his doctoral dissertation explores the "levers of operational, financial and systematic risk as the company's common stock listed companies in Tehran Stock Exchange" payment. The results show that financial leverage effect on the level of systematic risk, i.e. with the increase in corporate debt, systematic risk is increased. If the operating lever on the risk of systemic effect. Company size (the asset) has a significant effect on the amount of risk. In other words, the size of the company's assets increases, it decreases systematic risk. Given the above, the survey method is a correlation. [27]

The research aims to investigate the correlation between variables based on the analysis. Correlation studies can be divided into three categories according to the purpose:

1. Correlation between 2 variables: the correlation of two variables, the paper is to investigate the relationship between the two variables.
2. Regression analysis: This analysis aims to predict changes in the dependent variable due to changes in one or more independent variables.
3. analysis of matrix or covariance : In some studies, the correlation between the two sets of variables, correlation or covariance matrix table name is used.

Correlation or covariance matrix in which the research will be the factor analysis and structural equation modeling. This analysis aims to outline a set of data or latent variables (constructs) and the structural equation model, examine relationships, based on theories and research findings are available.

Due to this it is possible between the independent variables used in this study (financial ratios) are both linear. The following methodology was used:

β Companies in Tehran Stock Exchange will be calculated from $\dfrac{Cov(R_i, R_m)}{\sigma_m^2}$.

Using factor analysis, financial ratios required they will be chosen for use in regression.

Using multiple regression, correlation between β and financial ratios of companies in Tehran Stock Exchange (which are identified in step 2) will be tested.

The population, sample and sampling:

The population of the desired number of elements of which have at least one characteristic.

Characteristic

Trait that is shared between all elements of the target population and the target population distinct from other communities. Section of the community sample statistics say. The other example is the limited number of statistics that represent the people of the main features of the community. In this study, the population of firms in the automotive industry and components of basic metals listed in Tehran Stock Exchange will be paired with these features:

Up to the end of 86 years in Tehran Stock Exchange accepted.

87 to 91 years of its shares are continuously traded on the Tehran Stock Exchange.

Their fiscal year end of March, the company is not investing.

In respect of the above limitations, 90 participated in the study population, all of which were selected.

Data collection

Information requirements of the basic financial statements, monthly and annual reports, announcements of companies and organizations have taken the Tehran Stock Exchange. After data collection method, the variables were calculated using Excel spreadsheet software. In order to collect information from secondary sources, i.e. organizational documents published on CD company stock information is extracted.

Hypothesis testing

Some research issues, especially those that target predictions are combined to determine the correlation between the criterion and predictor variables, each of these variables are correlated to some extent, is of great importance.

The method by which the predictor variables are combined is called regression. In this method, a multivariate regression equation to calculate the values measured by a formula summarizes the forecast. Coefficients for each variable according to its importance in predicting the criterion variable was calculated and determined. The degree of correlation between the predictor variables and the criterion variable in the regression equation, is given by the coefficient.

Data analysis

To analyze the data from the present study we used confirmatory factor analysis to identify general factors, using multiple regression analyzing the impact of the identified factors on the dependent variable systemic risk of common stock will be reviewed. The population consisted of two industrial companies listed in Tehran Stock Exchange is referred to the financial statements to date is the end of March. The research for the financial year is between 1387 to 1391.

Variables

Returns: the rate of change with respect to dividends and stock prices rise and the effects of share capital and earnings are computed.

Systematic risk (β): Part of the risk can be reduced by diversifying its shares. Standard measure of systematic risk, β is close to the rate of return on a securities trading in all securities on the market compared to the rates of return measured, calculated by the following equation:

β accounting: the regression coefficient accounting profits of a company with profits of stock market price index (market rate).

Stock Price Index Stock Tehran. Due to the volatility of market returns and cash returns are computed.
The general model for the study are: **β = Debt/CF*α+x0**
β Systematic Risk, **Debt/CF**The ratio of debt to cash flow, **x0** is the intercept.

Measured variables
Dependent variable: Variable that describes the purpose of research or predict variability in it. In other words, the dependent variable, which is a key variable in terms of the problem to be investigated. The dependent variable in this research is the systematic risk of common stock β . β systemic risk to the stock return and portfolio return rate depends.
Return on equity: Factors influencing the rate of return on the stock are:
1) The price of the stock at the beginning of the period, 2) the stock price at the end of the period, 3) Cash dividends per share, 4) Number of shares at the beginning of the period
5) Number of shares at end of period 6) increased the number of shares, including shares of stock and cash taken from the reserves or retained earnings. Thus the overall formula to calculate the rate of return on equity firms will be examined:

$$R_i = \frac{(P_t - P_{t-1}) + (D_t) + \frac{(P_t - P_n) \times N_C}{N_t} + \frac{N_e \times P_t}{N_t}}{P_{t-1}}$$

In which: R_i the price of monthly stock returns over the first period, P_{t-1} the stock price at the beginning of each month, P_t the stock price at the end of each month, P_n the nominal value per share, D_t dividends per share, N_C an increase of the number of shares earned cash, N_e shares have risen from the reserves or retained earnings, N_t the number of shares before the capital increase

Portfolio return rate: use the following formula to calculate the rate of return on the market portfolio will be used.

$$R_m = \frac{I_t - I_{t-1}}{I_{t-1}}$$

R_m Monthly rate of return on the market portfolio, I_{t-1} Tehran Stock Exchange stock price index at the beginning of each month, I_t Tehran Stock Exchange stock price index at the end of each month
Systematic risk equities β : β the following formula is used to calculate the systemic risk.

$$\beta = \frac{Cov(R_i, R_m)}{\sigma^2(R_m)}$$

β Systematic risk of common stock, R_i common stock returns of companies i , R_m the systematic risk of the market portfolio return rate companies surveyed in this study is based on 5-year rates of return of 87-91 (of 60 monthly) will be calculated.

Independent variable: once you have selected a property that interfere or manipulated by the researcher and the effect on the dependent variable values can be observed. The independent variable is the ratio of debt to cash flow.

Analysis of findings
Descriptive statistics: basic metals and vehicle parts industry variables in Table (1) is provided.
As seen in the basic metals industry average ratio of total debt to cash flow 3/880797, the current debt to cash flow ratio 3/706679, Non-Current debt to cash flow ratio 0/505062, the mean value of the automobile industry and respectively equal parts: 9/234682 and 8/366966 and 0/ 887581 sets.
The basic metals industry as well as the maximum and minimum β 3/450000 and 1/480,000 and the maximum and minimum variable (β) automotive industry and the parts 2/470000 and -1/480,000

Table 1: descriptive statistics research

Standard deviation	The least	The maximum	Middle	The mean	Variable statistical quantity	
0/985635	-1/480000	3/450000	0/670000	0/814444	BETA	Basic metals industry
10/75510	-34/46797	28/02785	3/661820	3/880797	TDCF	
9/147766	-26/21237	26/56681	3/005053	3/706679	SDCF	
0/512255	-0/144841	1/507186	0/333183	0/505062	LTCF	
0/726752	-1/480000	2/470000	0/420000	0/459214	BETA	Automotive and Parts
19/37665	-27/42263	70/18627	6/666465	9/234682	TDCF	
16/90977	-22/83487	62/04630	6/159857	8/366966	SDCF	
2/240778	-2/693974	8/394083	0/420346	0/887581	LTCF	

The first main hypothesis testing and analysis
The first basic assumption right now The ratio of total debt to cash flow is a significant correlation with systemic risk.The following، Expression and sub-hypotheses and test results are assessed on the regression model.

The first sub-hypothesis test
According to the hypothesis presented، Statistical hypothesis automotive industry and parts of speech are as follows.
H0: Systematic risk is the ratio of total debt to cash flow with vehicle and parts industry, there is no significant relationship.
H1: The ratio of total debt to cash flow to systemic risk in the automotive parts There is a significant relationship.
The first sub-model regression hypothesis test results in Table (2) is provided. For a good review of the Usually the criteria determining factor (R^2) Adjusted coefficient of determination (Adj. R^2) And Watson camera (D-W) and The model was also used to study the F statistics.
As Table (4-3) are observed
The coefficient of determination (R^2 = 0/722511)and Adjusted determination coefficient(Adj. R^2=0/652161) is. This means that the explanatory power of the model is desirable. Watson statistic camera is (146375/2 = D-W) This means that the first-order autocorrelation in the error component model, does not exist. Finally, the f(F=10/27031)statistic and its probability is equal to 0000/0. Since the amount is likely to be less than significant level. The model was confirmed. Also, the coefficient, student t test (t) and the significance level for the first sub-hypothesis, respectively 002,242 / 0- and 559,891 / 1 and 1216/0 are. Since a significant amount, more than 5%, thus: To reject a null hypothesis that there is no significant correlation between the ratio of total debt to cash flow and systemic risk is accepted.

Table 2: The first sub-hypothesis test results of regression models (Automotive and Parts)

Systemic risk (BETA)					
The result	Prob.	T-statistics	Coefficients	Variable symbol	Variable
Rejection	0/1216	-1/559891	-0/002242	TDCF	The ratio of total debt to cash flow
2/146375	Cameras – Watson (D-W)		0/468129	The coefficient of determination (R^2)	
3/489193 (0/000001)	F Statistics (Prob. F)		0/333964	Adjusted coefficient of determination (Adj. R^2)	

The second sub-hypothesis test
H0 : The ratio of total debt to cash flow to systemic risk, there is no significant relationship between the basic metals industry.
H1 : The ratio of total debt to cash flow is a significant correlation with systemic risk basic metals industry.
The results of the first sub-hypothesis testing regression model Table (3) is provided. As you can see: The coefficient of determination is (467188/0 = R^2) Coefficient of determination adjusted is (332785/0 = Adj. R^2)is. Means that the explanatory power of the model is a good level. Camera-Watson statistic is (143818/2 = DW). This means that the first-order autocorrelation in the error component model does not exist. The F statistics is(476021/3 = F) It is also equal probability 0/000002. Since the amount is likely to be less than significant level, thus confirming the model is significant .According to the results of the index, statistics T student(t) and the second sub-hypothesis, respectively are -0/001370and -0/261476 and 0/2098. Since a significant amount is , more than 5%.Thus, assuming a rejection of the null hypothesis is that there is no meaningful relationship.

Table 3: The second sub-hypothesis test results of regression.

Systemic risk (BETA)					
result	Prob.	Statistics t	Coefficients	Variable symbol	Variable
Rejection	0/2098	-0/261476	-0/001370	SDCF	Current debt to cash flow ratio
2/143818	Watson camera (D-W)		0/467188	The coefficient of determination (R^2)	
3/476021 (0/000002)	F Statistics (Prob. F)		0/332785	Adjusted coefficient of determination (Adj. R^2)	

The second sub-hypothesis test
H0 : The current debt to cash flow ratio of systemic risk in the basic metals industry, there is no significant relationship.
H1 : The current debt to cash flow ratio of systemic risk in the basic metals industry, there is a significant relationship.
The second sub-hypothesis test results of a regression model in Table (4) is provided. As you can see:
The coefficient of determination is (0/732108 = R^2) and Coefficient of determination adjusted is (0/66419=Adj. R^2). Means that the explanatory power of the model is desirable.

Camera-Watson statistic is (345729/2=D-W). This means that there is no autocorrelation of the first order error component model.
Finally, the statistic F is (F=10/77956) And the probability is that the 0000/0.
Since the amount is likely to be less than significant level, thus confirming the model is significant.
According to results the coefficient and Student t test (t) and The significance level for the second sub-hypothesis Respectively are -0/006863 and -4/345758 and 0/0000. Since a significant amount of surface area, less than 5%, so:
To reject the null hypothesis that there is a negative relationship between the meaning of the current debt ratio of cash flow to systemic risk is accepted.

Table 4: The second sub-hypothesis test results regression model (basic metals industry)

Systemic risk (BETA)					
result	Prob.	t Statistics	Coefficients	Variable symbol	Variable
Confirmation	0/0000	-4/345758	-0/006863	SDCF	Current debt to cash flow ratio
2/345729	Cameras - Watson (D-W)		0/732108	The coefficient of determination (R^2)	
10/77956 (0/0000)	F Statistics (Prob. F)		0/664192	Adjusted coefficient of determination (Adj. R^2)	

The third main hypothesis testing and analysis
Three main hypotheses: Non-Current debt to cash flow ratio there is significant correlation with systemic risk. The following Regression model and test their hypotheses and sub-expression is evaluated.
The first sub-hypothesis test
H_0 : The current debt to cash flow ratio of systemic risk in the basic metals industry, there is no significant relationship.
H_1 : Between the current debt to cash flow ratio of systemic risk in the basic metals industry, there is a significant relationship.
The results of the second sub-hypothesis testing regression model (Table 5) are presented. As you can see:
The coefficient of determination is(468973/0=R^2) and Adjusted determination coefficient is (335020/0= Adj. R^2). Means that the explanatory power of the model is desirable.
Camera-Watson statistic is (163186/2=D-W) .This means that the first-order autocorrelation in the model error is.
Value and F (501026/3 = F) and its probability is equal to 0000/0. Since the amount is likely to be less significant level, The verification model is significant.
Table (4-7) observed: Coefficient and Student t test (t) A significant amount for the first sub-hypothesis Respectively equal to 020673/0- and 990689/0- and 3240/0.
Since a significant amount, more than 5% Thus, assuming a rejection of the null hypothesis that there is no significant relationship between the proportion of Non-Current debt to cash flow to systemic risk in the automotive and parts will be accepted.

Table 5: The first sub-hypothesis test results of regression models (Automotive and Parts)

Systemic risk (BETA)					
result	Prob.	t Statistics	Coefficients	Variable symbol	Variable
Rejection	0/3240	-0/990689	-0/020673	SDCF	Non-current debt to cash flow ratio
2/163186	Watson camera (D-W)		0/468973	The coefficient of determination (R^2)	
3/501026 (0/0000)	F (Prob. F) Statistics		0/335020	Adjusted coefficient of determination (Adj. R^2)	

The second sub-hypothesis test
H_0: Between Non-Current debts to cash flow ratio of systemic risk in the basic metals industry, there is no significant relationship.
H_1: Non-Current debt to cash flow ratio of systemic risk in the basic metals industry, there is a significant relationship.
The results of the second sub-hypothesis testing regression model in Table (6) is provided. As you can see:
The coefficient of determination is (732108/0= R^2)and Adjusted coefficient of determination is (664192/0 = Adj. R^2) Means The explanatory power of the model is desirable.
Camera-Watson statistic is (345729/2=D-W) and this means that there is no autocorrelation of the first order error component model.
Value and F (77956/10 = F) And its probability is equal to 0000/0. , Since the amount is likely to be less than significant level, thus confirming the model is significant. Table (6) is observed:

Coefficient, student t test (t) and the significance level for the first sub-hypothesis, respectively 006863/0- and 006863/0- and 0000/0.
Since a significant amount of surface area that is less than 5% Therefore, the null hypothesis is rejected based on the assumption that there is a significant negative correlation between the ratios of debt to cash flow with Non-Current systemic risk in the basic metals industry accepted.

Table 6: The second sub-hypothesis test results regression model (basic metals industry)

Systemic risk (BETA)					
result	Prob.	t Statistics	Coefficients	Variable symbol	Variable
Confirmation	0/0000	-4/345758	-0/006863	SDCF	Non-current debt to cash flow ratio
2/345729	Cameras – Watson (D-W)		0/732108	The coefficient of determination (R^2)	
10/77956 (0/0000)	F Statistics (Prob. F)		0/664192	Adjusted coefficient of determination (Adj. R^2)	

Conclusion and summary of research:
Given the importance of systemic risk and that our country has been paid to this topic. Therefore, in the present study it was U The relationship between systemic risk ratios of debt to cash flow sing the concepts and theories of financial management and library studies Basic metals and auto parts industry in the Tehran Stock Exchange examined and taken account of. The study, entitled "The relationship between systemic risk ratios of debt to cash flow" is set in five seasons.
The first chapter, after stating the importance and urgency of the problem, there are three main hypotheses and six secondary hypothesis was introduced as follows:
The first main hypothesis
The ratio of total debt to cash flow, there was a significant correlation with systemic risk.

The first sub-hypothesis:
The ratio of total debt to cash flow to systemic risk in the automotive industry and there is a significant relationship between the parts.
The second sub-hypothesis
Systematic risk is the ratio of total debt to cash flow with the basic metals industry, there is a significant relationship.
Two main hypotheses:
The current ratio of debt to cash flow is a significant correlation with systemic risk.
The first sub-hypothesis
The current debt to cash flow ratio of systemic risk in the automotive and parts, there is a significant relationship.
The second sub-hypothesis:
The current ratio of debt to cash flow is a significant correlation with systemic risk basic metals industry.
Three main hypotheses:
The ratio of non-current debt to cash flow is a significant correlation with systemic risk.
The first sub-hypothesis:
Non-Current debt to cash flow ratio of systemic risk in the automotive industry and there is a significant relationship between the parts.
The second sub-hypothesis
Non-Current debt to cash flow ratio of systemic risk in the basic metals industry, there is a significant relationship.
An overview of the main findings of the second hypothesis
The results of the first sub-hypothesis:
In the second part, the second main research hypotheses were tested. . For this reason, the first model was the first sub-study aimed to test the hypothesis.
The first sub-hypothesis states the current debt to cash flow ratio of systemic risk in the automotive and components, there is a significant relationship, the result gives the opposite result (no sub-prime hypothesis).
The results of the second sub-hypothesis:
The second model, the second sub-hypothesis test. Sub-second research hypothesis states that, the current debt to cash flow ratio times the systemic risks of basic metals industry, there is a significant relationship, (Second sub-hypothesis).
Given the negative coefficient obtained (-0/006863). We can say negative relation (inverse) between the two variables, there is, namely the increase (decrease) in current liabilities to cash flow, Decrease (increase) the basic metals industry systemic risk.
An overview of the main findings of the third hypothesis
The results of the first sub-hypothesis
The third section, the third research hypothesis was tested for this reason, the first model was the first sub-study aimed to test the hypothesis. Non-Current debt to cash flow ratio of systemic risk in the automotive industry and there is a significant relationship between the parts. The results will yield the opposite conclusion (not verified first sub-hypothesis).

The results of the second sub-hypothesis

The second model, the second sub-hypothesis testing. . Sub-second research hypothesis states that, Non-Current debt to cash flow ratio of basic metals industry there is a systemic risk (Second sub-hypothesis).

Given the negative coefficient obtained(-0/006863) We can say that the relationship is negative (inverse) is established between the Pearson, Namely the increase (decrease) Non-Current debt to cash flow ratio, a decrease (increase) result in systemic risk in the basic metals industry.

The summary of the results is given in table 7.

Table 7: summary of the results

Table (5-1). Summary of results				
Basic metals industry	**Automotive and Parts**	**Dependent variable** **Risk Systematic**	**Symbol**	Independent variable
Confirmation	Rejection	**BETA**	(TDCF)	The ratio of total debt to cash flow
Confirmation	Rejection		(SDCF)	Current debt to cash flow ratio
Confirmation	Rejection		(LTCF)	Non-current debt to cash flow ratio

CONCLUSION

The most important factors that influence decision making for the purchase of shares Return and risk in comparison with other investment opportunities the risk and return on investment are key.

The measurement of risk, increased ability to consider a better decision. D investment on the one hand leads to inefficient investment and lead those to productive sectors of the economy On the other hand,

Due to the orientation of investors (based on risk and return) investments will be directed towards industries who benefit from a more or less risk. This eventually led to the efficient allocation of resources. . In this study, the relationship between the ratio of debt to cash flow to systemic risk in the stock company of basic metals industry and car parts were investigated.

The results show that the ratio of debt to cash flow and systemic risk in the basic metals industry, there is a significant relationship. But in the automotive and components results showed the opposite result was obtained.

In other words, the ratio of debt to cash flow and systemic risk in the industry, there is no significant relationship.

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