International Journal of Finance and Managerial Accounting, Vol.11, No.41, Spring 2026 IJFMA

An Explanation of Financial Market Anomalies by Emphasizing Financial Constraints based on Risk-Based Perspective and Behavioral Perspective

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Submit: 12/07/2023 **Accept:** 13/02/2024

ABSTRACT

This article investigates the impact of financial market anomalies with an emphasis on financial constraints based on Risk- Based Perspective and Behavioral Perspectives. This is a post-event descriptive applied paper. The statistical population includes all active companies listed on Tehran Stock Exchange, whose shares were traded in Tehran Stock Exchange from 2011 to 2020. The statistical sample was selected based on the method of systematic elimination of 182 companies. The primary and secondary data including reports of financial statements and audited financial statements of stock exchange companies for a period of 10 years have been used to collect the required data and financial information and analyzed by eviews9 and SPSS software. Various statistical tests were used for the inferential analysis of the variables, including the F Limer and Hausman test, regression test, and panel data. The research results showed that financial anomalies have a positive effect on Iran's capital market Risk Premium, and financial constraints have a positive effect on Iran's capital market Risk Premium. In other words, incorrect pricing leads to an underreaction or overreaction in stock prices from the investor's psychological deviation, such as the investor's misunderstanding of the company's profit, and affects the financial risk and constraint and ultimately financial crisis.

Keywords: Financial Market Anomalies, Financial Constraints, Risk Premium.

1. Introduction

The capital market is one of the basic elements of the economic system of any country. This market is the gathering place of low cost, wandering and scattered resources towards different economic units. The symbol of the capital market is the stock exchange and related institutions. The correct performance of the stock market can bring valuable consequences such as economic growth and development. Investors must trust this market to direct their savings to it. Investors try to invest their savings where they can get the highest return. However, they should also consider the risk related to investment (Salehi, Elah Karam; Salehi, Barzo ,2016). At present, the companies operate in a growing and competitive environment, and companies need to develop their activities through new investments to progress. Carrying out industrial projects requires the provision of financial resources and cash, and in this regard, companies are forced to use financial provisioning mechanisms. Companies are faced with two sources of financial provision, internal and external. Managers must decide how to secure the funds they need and how to spend the available financial resources. The financial constraints of companies is one of the most important topics discussed in the financial literature. Companies finance themselves in various ways, one of which is financing with short-term and long-term debts. Several factors such as the nature of the activity, assets and type of industry and financial costs are influential in the financing structure and financial constraints of the company. Companies have financing constraints when they face a gap between internal and external expenditures of allocated funds. Alm, Liu, Zhang state that companies with financial constraints tend to invest their cash first to finance profitable projects and then in fixed assets or working capital. They invest their cash in such a way that it is considered a guarantee for receiving a new loan. In addition to limiting the access to funds needed for investment, financial constraints lead to the loss of investment opportunities and negatively affect the company's performance and growth in the future, and may also have a negative impact on the company's stock returns (Alm, et al., 2019).

Abdolbaghi, Abdolmajid (2023), in the research titled "Anatomical Analysis of Noisy Transactions and Pricing Errors," have concluded that noisy transactions have a significant and positive impact on the level of pricing errors in stocks. Additionally, pricing errors vary across different levels of noisy transactions which means that as noise increases pricing errors also increase. Besides the fluctuations in noisy transactions, the B/M ratio also exerts an influential effect. In other words, pricing errors at different levels of the B/M ratio are different. Therefore, considering the research findings, the entry of uninformed traders into the stock market creates noise, lead to inherent price deviations in stocks.

The capital asset pricing model by Sharp Sharpe, W. F. (1964), Lintner and Lintner, J. (1965) Mosin, Mossin, J. (1966) which created a storm in the financial world, has brought about many discussions. Most empirical studies believe that the capital asset pricing model (CAPM) market risk factors cannot fully account for market anomalies such as the momentum effect (proposed by Jagadish and Titman) Jegadeesh, N. and S. Titman (1993) , the reversal effect (proposed by de Bont and Thaler, 1985) and effect size proposed by Banz; Banz, R. W. (1981) Basu Basu, S. (1983) . To solve the CAPM problem and after realizing that market risk factors alone cannot explain the abnormal returns of asset portfolios, Fama and French introduced the revived three-factor model. This three-factor model, which expands the basic perspective of CAPM, believes that apart from market risk factors, size and book-to-market factors are also important in explaining excess returns. Like the CAPM, the three-factor model of Fama and French has also generated a lot of attention and debate in the academic world. This discussion focuses on two points Fama, E. F. and K. R. French (1993). First, determine whether the three-factor model can successfully identify all market anomalies. Fama and French believe that except for the acceleration effect, the three-factor model can identify all market anomalies ignored by CAPM. Fama and French further strengthened the three-factor model by including profit and investment factors. Except for the inability to identify high investments and low profits, low average returns on small stocks, this five-factor model can well explain the excess returns of asset portfolios. Another argument believes that factor models can be explained in terms of risk or behavior. For the three-factor and five-factor models, Fama and French believe that the explanatory factors are created from risk-taking rewards. However, opponents believe that market anomalies occur as a result of investor behavior; Fama,

E. F. and K. R. French (1996) The empirical evidence of Shefrin and Statman supports this point of view and the explanation of multi-factor models which say that market anomalies are caused by the cognitive deviation of investors Fama, E. F. and K. R. French (1996). The meaning of "Financial Constraints" is that there are factors that prevent the provision of necessary funds for all desirable investments. Inability to provide funds for investment may be due to bad credit conditions, inability to get loans, inability to issue shares and non-liquid assets. Financial constraint is a prerequisite for financial helplessness. Although this constraint is not necessarily equal to financial helplessness, but from the risk point of view, we doubt that the risk of financial helplessness can be related to the company's inability to obtain capital due to financial constraints. From a behavioral perspective, financial constraints are the result of asymmetric information. The more severe the asymmetry, the more difficult the company is to obtain external capital, which makes it more difficult for investors to evaluate the company's value and ultimately leads to the wrong pricing of the company's shares. Therefore, from the perspective of financial constraints, we assume that this should be able to provide a suitable general explanation for the discussion of market anomalies from risk and behavioral perspectives. Companies facing financial constraints are always affected by factors such as agency cost Jensen, M. C. and W. H. Meckling(1976), information asymmetry Myers, S. C. and N. S. Majluf(1984), and free cash flow. These constraints lead to higher costs of foreign capital and, as a result, difficulty in obtaining foreign credit. The research entitled "Investigating the Performance of a Pricing Model Based on Value, Momentum, and Market Factors in Explaining Excess Returns of Portfolios Constructed from Anomalies of Liability Items and Financial Constraints: A Comparative Approach with Competing Factor Models Using GRS Test," which has been done by Soleymanian, Gholamreza, Foroughi, Daryoush, and Amiri, Hadi (2020) displays a pricing model. This model is based on the value and momentum factors by considering their negative relationship with market risk. The study also incorporates market risk in conjunction with anomalies related to liability items and financial constraints, demonstrating the simultaneous impact of these factors. To achieve this, portfolios are constructed by considering value, momentum factors and the market factor calculation as variables of model over the period from 1386 to 1395 for 120 selected sample companies. Then, the pricing model was evaluated using a time-series approach.

The test results and assumptions indicate convergence between value and momentum factors with excess stock returns in portfolios constructed based on some features as value/momentum, value/size, liability items/size, and financial constraints/size. These two factors lead to risk mitigation in the hedging portfolios based on value/momentum, liability items/size, and financial constraints/size. Additionally, the three-factor model based on value, momentum, and market, including market risk, outperformed other capital asset pricing models such as CAPM and the Fama-French three-factor model, as evidenced by the GRS test statistics.

The main goal and question of this research is to examine the financial market anomalies from the risk-based and behavioral perspective, as well as to examine the role of financial constraints in explaining the financial market anomalies in Iran.

In the current research, the integration of risk and behavioral perspectives as two fundamental angles in explaining financial market anomalies presents a significant innovation. Financial constraints, as a practical aspect of risk and the impact of investor behavior, are examined as key factors in the dynamics of the financial market. This analysis illustrates how financial constraints, as a primary factor, play a role and how these constraints are associated with risk and investor behavior in shaping financial market anomalies. The modeling of behavioral aspects and market dynamics is also innovatively analyzed, with an emphasis on financial constraint conditions. This analysis explores anomalies from new and diverse perspectives, demonstrating the influence of investor behavior under financial constraints. Furthermore, it investigates the impact of financial constraints on systemic risk and the connections among anomalies, contributing to the enhancement of risk management policies and the prediction of market fluctuations

2 Literature Review

2-1 Financial anomaly

In natural sciences, the observation of stable anomaly leads to the development of new theories; however this is not the case in the humanities. In the humanities,

what the theories are not able to explain, they severely criticize and finally call it an anomaly. The root of the anomalies is somehow sought in the efficient market hypothesis. A hypothesis that was first proposed by a French mathematician named Bachiller in 1900. Fama, reviewed the efficient market hypothesis and explained the evidence related to it. The number of anomalies increased rapidly and this issue became a challenge and concern in the studies of this field. In line with this new challenge, Harvey et al,(2016) by reviewing 313 published and unpublished articles of the first class since 1968, identified 315 investigated anomalies and severely criticized the methodology of detecting anomalies and called for the use of strict criteria to identify anomalies and they placed the proposed anomalies in the category of false discoveries. Hou also examined 447 anomalies in their study and concluded that only 15 percent of these anomalies, i.e. 67 anomalies, are significant and the rest were introduced as anomalies for several reasons, including the influence of stolen data. The result of Hou research removed many famous variables such as the quality of accruals, which were previously known as anomalies, from the category of anomalies, and severely reduced the validity of the remaining variables such as operating accruals, which were still included in the category of anomalies. In the opinion of these researchers, several reasons, including ineffective methods in identifying anomalies and data theft, have caused the number of anomalies to grow ,incorrectly Hu. G., Wang, Y. (2018). Onur also stated that anomalies disappear or fade over time, and this phenomenon is caused by the market's attention to anomalies after publication; therefore, the discussion of using the optimal approach in identifying anomalies, avoiding data theft and the possibility of fading or removing anomalies over time in the space of studies in this field highlighted the need to ad dress the recognition of anomalies. One of the most important theories in investment is the efficient market hypothesis. The concept of efficiency considered here refers to the issue of how successful the market has been in determining the price of securities. A sign of market success means that prices consistently reflect new information. Therefore, the market can be considered effective when it has the ability to process information. In an efficient market, the prices at any time indicate a correct assessment of the available information, as a result, the prices will fully reflect the available information. (Onur Bayar. Fariz Huseynov. Sabuhi Sardarli. 2018).

Efficiency is concerned with two important aspects in determining prices, which are the speed and quality of determining prices, if the current prices reflect valuable information, it will be very difficult to find cheap securities that yield create high or invest in securities whose price is high and yield is low. You can make a good investment only if you can predict the future well. Several definitions of the efficient market have been created over the years, some of which are mentioned below: Fama has defined the efficient market in this way, which can be said to be the simplest and most complete definition: the efficiency of the capital market will be realized if the market uses the available information correctly in setting the prices over time. Jensen calls a market inefficient in which it is not possible to make a profit by using its own set of information. Beaver (1981) defined an efficient market as follows: a market is called efficient according to its information system when price changes occur when all investors receive the given signals by information system (Bărbuță-Mișu, Nicoleta,2019). In other words, we will see the price change when the awareness of the information is widespread. In this case, the prices reflect the information provided by the accounting system (Saidi Gogerchin, Mahmoud,2015). However, according to the investment theory of market efficiency or EMH, which was proposed by Ewing Fama in 1996, prices are always influenced by the available information about stocks and the market. In this way, according to this theory, no investment has an advantage over other investors in terms of predicting dividends. Because of no investor has access to more information than other investors (Chan, C. C., Y. H. Chang, and H. W. Hsu ,2016). Kiyamahr, Janani, and Hematfar (2020) have done the research entitled the anomalies in the stock market and their impact on the asset pricing models of companies listed on the Tehran Stock Exchange (TSE). In this research they have collected and evaluated the financial reports of 150 companies on the TSE. The results show that in all three pricing models including the Fama-French's three-factor model, the Carhart's four-factor model, and the Fama-French's five-factor model anomalies in the stock market affect the asset pricing, significantly which lead to an increasing in portfolio risk. Additionally, the findings demonstrate that introducing an asset pricing

model based on stock market anomalies enhances the predictive power of conventional asset pricing models.

2-2 The view of market anomalies

Currently, there are two explanations for market anomalies, i.e. risk-based explanation and behavioral explanation. In the following, these two points of view will be discussed:

A risk-based perspective

One of the constant concerns of researchers is to find an acceptable model with which to establish a relationship between what is said in theory and what happens in practice. The relationship between risk and return is one of the most prominent topics in this field. It is expected that by bearing more risk, more returns will be obtained; nevertheless, the empirical evidence does not show this issue and this relationship remains a mystery. The beginning of many modeling to explain this relationship is the capital asset pricing model. This model, based on a set of specific assumptions and in the form of a simple equation, states that the only risk factor is obtained from the covariance between the asset return and the return of the market set, and it is possible to diversify this risk. Therefore, in asset pricing models according to modern portfolio theory, a reward for accepting risks that are not the source of systematic risk will not be considered, and the expected return is only linked to systematic risk. In this regard, the mentioned model does not explain all the returns of the share and its changes, and this issue, while providing the ground for the efforts of the researchers to provide more efficient models, has become the basis of the researchers' efforts to investigate the factors affecting the return. Accordingly, since the 70s, efforts in this field have accelerated and hence the literature of anomalies was formed. Abnormality in the word means deviation from common rules.(He, G., Ren, H, 2017). And in the financial field, it refers to a pattern in average stock returns that is not compatible with conventional models in the literature of asset pricing theory (Jafari , A. Arab Salehi, M. Samadi, S,2021).

There are evidences that various factors such as profitability, risk of financial helplessness, lottery and unsystematic risk are related to share returns, the conventional pricing models do not explain these anomalies and the way of this relationship remains unsolved as a mystery. In several studies, each of these abnormalities has been analyzed separately, in this regard, the studies of Haugen & Baker Hong, H. and J. C. Stein (1999) . From the theoretical point of view, the higher hierarchy hypothesis proposed by Hamberg and Mason state that the characteristics of senior managers affect their decision-making style. One of the interesting characteristics of management is overconfidence. Psychologists conclude that overconfident people overestimate the possibility of their success, attribute their success to their abilities and underestimate the role of luck and external factors (Hosseini et al.,2009). Overconfidence causes people to overestimate their knowledge and skills and underestimate their risks and feel that they have control over issues and events, while this may not be the case (LaRocca, et al., 2015). Overconfidence is a personal characteristic that can be defined as biased behavior and having unrealistic (positive) beliefs regarding any aspect of an event in conditions of uncertainty, in this case the average estimate will be exaggerated. Overconfidence of the CEO is defined as the tendency of the CEO to predict the results very positively, by estimating more than the probability of the results occurring (Tianjiao Zhao. Xiang, Xiao, 2019). An overconfident manager systematically overestimates the future returns from investment projects, or we can say that he overestimates the probability and effect of favorable events on the company's cash flows. And they underestimate the effect of adverse events on the company's cash flows (Yang, C. W., C. A. Li, and S. T. Hsu, 2016). Therefore, managers with overconfidence are expected to have higher capital expenditures and make excessive investments in investment projects. Overconfidence is one of the most important modern financial concepts of behavior that exists according to theoretical foundations. This characteristic has caused managers to overestimate the returns of projects and has an impact on the way of identifying profits and losses and the book value of assets and liabilities (Dehghan Khavari, Saeed; Zare, Mahnaz,2021). The research entitled "The Impact of Investor Behavioral Biases on the Future Price Decline Risk of Stocks with an Emphasis on the Role of Financial Reporting Quality," has been done by Hassanzadeh Diva, Seyyed Mostafa, and Bozorg Asl, Mosayyeb (2021) which cover a 10-year period from 2010 to 2019. The results of this research utilizing multivariate regression models indicate a direct and significant effect of investor behavioral biases on the risk of future stock

price decline. Moreover, the quality of financial reporting affects relationship between investor behavioral and the risk of future stock price decline. Financial behavior is a field of study that delves into the examination of the decision-making process of investors and their reactions to various conditions in financial markets. It emphasizes on the influence emotions, personalities, cultures, and judgments of investors on investment decision-making (Zhu et al., 2018). The financial behavioral perspective indicates that certain changes in prices do not have any reason and the emotional behavior of investors plays a crucial role in price determination (Choi & Zhang, 2019). The results of modern behavioral finance researches show that emotions and the cognitive structures of investors play important roles on stock markets and stock prices (Liston, 2016).

2-3 Financial constraints

The issue of financial constraints is one of the important and fundamental issues facing all companies. Companies generally compete with each other in accessing financial resources in the capital market. A company that faces more problems in accessing financial resources in the capital market, provides more of its needed financial resources from internal sources, and such a company is called a financially constrained company. In other words, companies with financial constraints have a considerable dependence on the cash flow generated internally and do not have the opportunity to make decisions regarding investment (Hovakimian, G. and S. Titman ,2006) .The way of reasoning for examining the relationship between financial constraints, asset structure and financial leverage divides companies into two groups with financial constraints and without financial constraints. Fazari and colleagues argue that companies with high financial constraints place more emphasis on cash flows when making investment decisions. In other words, with the increase in the difference between the cost of domestic and foreign financing, the sensitivity of investment to domestic cash increases; thus, these companies follow the hierarchy theory for financing and prefer internal sources to external sources,(Fazzari, et al,. 1988) . Some researchers such as Almeida & Campello Chan, C. C., Y. H. Chang, and H. W. Hsu (2016) have investigated the possibility of companies facing financial constraints by creating a periodic pattern. Companies without financial constraints do not show any sensitivity to cash flows; however, companies with limited credit have a positive sensitivity to cash flows, which increases the sensitivity of companies with financial constraints by increasing the available collateral. Most of the foundations in the financial field have shown that financial constraints limit managers' ability to finance investment projects(Amini, Peyman; Jamali Nasari, Shamsuddin, 2016). It that can be inferred that, when faced with financing constraints, companies may refuse to accept and carry out projects with a positive net present value due to high financing costs. This leads to low investment (Nikbakht, Mohammad Reza; Taheri, Masoud ,2016).Therefore, the companies will not be able to provide the necessary amounts to carry out investment projects. Hence, if a company has a suitable amount of collateral assets, by creating new debts, it can increase its financing volume and thus, to some extent, remove the created financial constraints. slow down and, accordingly, develop the amount of their investments AllaVardi, Mohammad (2016).In other words, if the value of collateralized assets decreases (increases), the payment of financing and, as a result, the amount of the company's investments also decreases (increases). A decrease in the value of collateral assets itself causes an increase in the financing costs of the company, (Tehrani, Reza; Veisi, Hossein, 2022).

Table 1: Research background

Researcher and year	Title	Results
Dehghan & Zare (2021)	Investigate and analyze the effect of management ability on the risk of falling stock prices, taking into account the effect of financial constraints	There is a positive and significant relationship between managerial ability and the risk of falling stock prices. Financial constraints have a positive and significant effect on the relationship between managerial ability and the risk of falling stock prices.
Jafari & Arab Salehi (2021)	Analyze the impact of market anomalies and growth opportunities on stock returns	Evidence shows that there is a relationship between profitability, financial distress, randomness and unsystematic risk with future returns; but the conventional models of capital asset pricing do not explain the above-mentioned anomalies. This evidence indirectly

Researcher and year	Title	Results
		confirms the presence of the mystery of profitability, randomness and unsystematic risk in the Iranian capital market and shows that investors may have different returns by choosing an investment strategy based on these anomalies**.**
Malagon, Moreno, & Rodríguez, (2018)	Idiosyncratic Volatility, Conditional Liquidity and Stock Returns	The financial background of behavioral finance dates is related to the early 1970s, approximately. This interdisciplinary field, a combination of financial sciences and often psychology and sociology, is utilized to better analyze issues in financial markets. It predominantly focuses on examining the decision-making process of investors and their reactions to different conditions in financial markets. The emphasis lies on the influence of investors' personalities, cultures, and judgments on investment decisions. According to these theories, investor behavior in the stock market influences decision-making, allocation of financial resources, pricing, and evaluation of company returns. Ambiguous conditions and cognitive errors rooted in human psychology lead investors to make mistakes in shaping their expectations. Consequently, unique behaviors emerge during investment in financial
Bărbuţă-Mişu, Nicoleta (2019)	The impact of the economic crisis on the financial performance of European companies	A crisis has a significant positive impact on financial performance as well as liquidity, asset turnover, and labor productivity, which means that firms tend to put more effort into maintaining financial performance in the face of a crisis. The financial performance is significantly and negatively affected by the financial leverage independent of the effect of the crisis and shows that the return on assets is lower than the average interest rate.

3 Research method

This article is an applied post-event descriptive paper.

3-1 Statistical population

The statistical population includes all the companies listed to the Tehran Stock Exchange from 2011 to 2020, having applied the following inclusion criteria a sample of 182 companies was selected.

1) The date of their acceptance in the stock exchange should be before 2011 and they should be listed in Tehran Stock Exchange by the end of 2020.
2) They have not changed their activity or financial year in the desired period.
3) The research required data should be available for them.
4) For the purpose of simulating the type of items and their classification in the financial statements, the selected companies should be productive and not part of banks and financial institutions (investment companies, financial intermediaries, holding and leasing companies); because the capital structure of such companies is different and may not be generalizable to other institutions.
5) To increase comparability, their financial year should end at the end on March, 20th .
6) The company in question does not have a trading break (more than 6 months).

3-2 Research hypotheses

Hypothesis 1: Financial anomalies affect the Risk Premium of Iran's capital market.

Hypothesis 2: Financial constraints affect the Risk Premium of the Iranian capital market.

3-3 Statistical model of the research

Model 1 is used to prove the first and second hypothesis Financial anomaly:(FA)

(1)

$$\mathrm{RMF}_{it} = c + \beta_1 FA_{it} + \beta_2 FC_{it} + \beta_3 ROA_{it} + \beta_4 SIZE_{it} + \beta_5 MB_{it} + \beta_6 LOSS_{it} + \beta_7 LEV_{it} + \beta_8 TANG_{it} + \varepsilon_{it}$$

Financial anomaly

1) Risk-based
   - Risk-based indicators are:
   - The ratio of book-to-market value,
   - Common risk is market share which can be determined by the company's revenue.
2) Behavioral explanation
   - It is calculated through the profit of the company.

Financial Constraint

(2)

WWIR=80.04-5/182CFO-0.106Div+5/112Lev-0.662logTA

cfo: cash flow from operations divided by total assets at the end of the period.
Div: dividend paid divided by the total assets at the beginning of the period.
lev: debt ratio
LogTa: the logarithm of the book value of assets at the end of the period

Premium on capital market risk

RMF = Rm – Rf (3)

Control variables:

ROA: profitability indicator, which is a control variable and is equal to the ratio of net profit to total assets.
SIZE: represents the size of the company, which is a control variable and is equal to the natural logarithm of total sales revenue.
MB: Growth indicator, which is a control variable and is equal to the ratio of the stock market value to the book value of equity.
LOSS: Loss indicator, which is a control variable and is equal to a dummy variable in such a way that if the company's profit for the current year is negative (loss report), it is one and otherwise is zero.
LEV: represents financial leverage, which is a control variable and is equal to the ratio of total liabilities to total assets.
TANG: the indicator of assets' tangibility, which is a control variable and is equal to the ratio of fixed assets to total assets.

3-4 Methods of data collection and analysis

This research is field research. The data relevant to theory and research literature and theoretical foundations will be collected from library sources, scientific databases, foreign and domestic articles. The data needed to conduct this research is also extracted from the audited financial statements of companies and their other financial reports, as well as from Rahvard Navin software and Codal website. Research data for the 10-year period (2011 to 2020) will be collected from the mentioned sources. Data analysis will be done with the help of data panel and regression and Evoviews software.

4 Results

4-1 Model test

At first, diagnostic tests are performed to choose the best econometric method. Table 2 presents the results of Chow and Hausman diagnostic tests for this statistical model:

Table 2: The result of model diagnostic tests

Test	statistics	The probability of statistical error	Test result
Chow	6.562	0,000	Composite regression is appropriate.
Hausman	110,806	0,000	Regression with fixed effects is appropriate.

The results of diagnostic tests indicate that regression with fixed effects is suitable for estimating this statistical model; therefore, the variable model was estimated with this method, the results of which are reported in Table (3).
The validity and goodness of this estimation model is evaluated prior to the presenting the
interpretation of the findings:

The coefficient of determination obtained in this estimate shows that the explanatory power of the model is equal to 86.7%, which means that 86.7% of the changes in the dependent variable are explained by the independent variables.

The adjusted coefficient of determination indicates that appropriate independent variables were used to fit the dependent variable; Because this coefficient here is

equal to 84.4%, which is close to the determination coefficient.

The standard error of estimation or the standard error of the regression in this estimated equation is equal to 0.057, which can be concluded that the error of the estimated equation was low and the regression line was close to the actual observations. The F statistic and its error probability level which is smaller than 0.05 , indicates the significance of the whole model; it means that the implemented model is suitable and the H0 hypothesis that all the coefficients are zero is rejected and it can be concluded that the whole model is significant.

Also, Durbin-Watson's statistic is used to check the serial autocorrelation between the residuals. If the Durbin-Watson statistic value is between 1.5 and 2.5, it means that there is no serial autocorrelation between the residuals and this assumption is valid. In the initial estimation of the equation, it was observed that the Durbin-Watson statistic is very low, which means that there is a serial correlation between the residuals of this estimated equation. In such cases, when one of the classical assumptions is violated, it should be fixed using conventional solutions. One of the conventional solutions in the removing the serial correlation between the residuals is to add the dependent variable interval to the regression equation as an independent variable, as seen in the estimation results table. In fact, this method was used to remove the serial correlation until the Durbin-Watson statistic reached an acceptable value (1.589).

The absence of severe collinearity between independent variables has also been checked using the coefficient of variance inflation factor; if the value of the coefficient of variance inflation factor is smaller than 5, it means the absence of severe collinearity between independent variables and it can be ensured that there is no false regression. The results showed that this coefficient is smaller than 5 for all variables.

Also, since there is an intersection in the estimated model, the assumption of zero average residuals is also valid.

In addition, when other classical assumptions are satisfied and the statistical sample size is more than 30 observations, the distribution of the residuals approaches the normal distribution. In this case, the residuals are effective even if they do not have a normal distribution. Finally, by using the estimated generalized least squares (EGLS) method, the possible problem of heterogeneity of variance has been solved. According to these discussions and reviews, we can ensure the validity of the research findings and interpret the findings with confidence.

Table 3: Estimation of the statistical model

Value	Coefficient	SE	t- statistic	p-value	Variance inflation factor
Intersect	0.246	0.035	6.870	0.000	---
Financial anomaly	0.011	0.006	1.979	0.048	1.298
Financial constraints	0.052	0.008	6.185	0.000	1.915
Profitability	-0.008	0.001	-7.320	0.000	1.134
size of the company	-0.00047	0.00011	-0.414	0.678	1.030
Growth	0.000077	0.0023	0.032	0.974	1.451
Financial Leverage	0.002	0.007	0.322	0.747	2.805
Tangible assets	-0. 313	0.028	-11.097	0.000	1.336
F statistic	37.390	F statistic		0.000	
The coefficient of determination	0.867	Adjusted coefficient of determination		0.844	
Standard error of regression	0.057	Durbin-Watson		1.589	
EGLS (Estimated Generalized Least Squares) method (Eliminate the possible effects of variance heterogeneity)					

The result of the estimation of the statistical model shows that the financial anomaly coefficient is statistically significant, because the statistical error probability level is less than 5%, which means confirming the first hypothesis of the research regarding the relationship between financial anomalies and the risk of the capital market of Iran. Also, the mentioned coefficient (0.011) is positive, which shows that financial anomalies have a positive effect on Iran's capital market risk. The result of the estimation of the statistical model shows that the financial constraint coefficient is statistically significant, because the statistical error probability level is less than 5%, which means confirming the second hypothesis of the

research based on the relationship between the financial constraint and the risk of the capital market of Iran. Also, the mentioned coefficient (0.052) is positive, which shows that the financial constraint has a positive effect on the Risk Premium of the Iranian capital market.

5 Discussion and interpretation

This article explained the anomalies of the financial market with an emphasis on financial constraints. Thus, to examine the research question, two hypotheses and a model were proposed.

Hypothesis 1: Financial anomalies affects Iran's capital market Risk Premium. The results of Table 3 of the estimation of the first statistical model of the research indicate that the financial anomaly coefficient is statistically significant, because the statistical error probability level is less than 5%, which means confirming the first hypothesis of the research regarding the relationship between financial anomalies and capital market risk in Iran. Also, the mentioned coefficient (0.011) is positive, which shows that financial anomalies have a positive relationship with Iran's capital market risk (confirmation of the hypothesis). This article results are consistent with the results of Hashemi et al., (2012). who concluded a significant relationship between financial anomalies and risk. Also, these results are consistent with the results of Beh Soodi, Afshin (2016). concluding a positive and significant effect of financial distress and financial helplessness on stock risk. Also, this result is consistent with the results of Hezbi; and Salehi Hezbi, Hashem; Salehi, Elah Karam (2015) the results showed, financial anomalies have a positive and significant effect on risk allocation, in other words, the more financial anomalies increase in the studied companies, the more market risk allocation increases, and vice versa, this result can be interpreted as follows. As stated, the financial abnormality has been examined under two perspectives based on risk and the behavioral explanation of investors. The behavioral perspective states that incorrect pricing is caused by the psychological deviation of the investor; the profit of the company from the perspective of risk and behavior is related to financial abnormality. The more the amount of financial deviation based on the incorrect view of the investor, as a result, the market risk will also increase. Also, the financial abnormality affected by risk and the ratio of book-to-market value has a positive effect on risk because the company's revenues does not only represent stock returns, but also operational risks, returns and corresponding risks. At the same time, anomalies in stock returns have the highest correlation with size factors and book-to-market value and indicate the importance of the company's earnings. Finally, the more the financial crisis increases, the more the investors should increase their expected capital profit rate due to risk and vice versa.

The second hypothesis: Financial constraints affect Iran's capital market Risk Premium. The results of table 3 of the estimation of the first statistical model of the research indicate that the coefficient of financial constraint is statistically significant, because the probability of statistical error is less than 5%, which means confirming the second hypothesis of the research based on the relationship between financial constraint and market risk in Iran. Also, the mentioned coefficient (0.052) is positive, which shows that financial constraints have a positive relationship with Iran's capital market risk (confirmation of the hypothesis). The results of the present study have been in line with the results of researchers such Almeida, H. and M. Campello (2007) . who also concluded that there is a positive relationship between financial constraints and risk. Also, these results are consistent with the results of researchers such as Falah, Reza; Kochki Tajani, Mohaddeh; Mere K, Shiva, (2020) who also found a significant relationship between financial constraints and risk. Also, these results are consistent with that of Hasas yeganeh Hasas yeganeh, Yahya; Bari, Samaneh, (2016) . They also stated that financial constraints have a significant relationship with risk and constraints have a direct and significant effect on the risk of falling stock prices. Among other consistent results we can refer to the research by Khani Khani, Abdullah; Afshari, Hamideh (2013), who also stated that financial constraints have a positive and significant effect on the relationship between managerial ability and risk. Furthermore, our results are contradictory with the results of Zaman Zaman, Razieh (2017). They have stated that there is a significant but negative relationship between financial constraints and risk. As the results showed, financial constraint has a positive and significant relationship with market risk taking, in other words, it can be said that the more the financial crisis in the company, the more risk taking by investors will increase, because

financial constraint is a prerequisite. It is a financial crisis and the risk of a financial crisis is also related to financial constraints. Financial constraint is caused by information asymmetry; the more severe it is, the more difficult it is for foreign investors to evaluate the value of the company and ultimately it will lead to the wrong price of the company's shares.

Research limitations:

It should be noted that there were limitations for doing this research; including lack of access to data and statistical information. Also, this research is restricted to stock exchange companies; thus, we should be careful to generalize the results to other organizations. Other factors such as political, economic or social changes which may have effects on results have not been considered in this research.

Suggestions for Further Research:

In conclusion, considering additional sources such as market news, industrial analyses, and opinions of experts familiar with the research, can provide a more comprehensive understanding of the examined area and enhance result accuracy. Furthermore, for the development of the concept of abnormalities, more advanced economic models can be applied to analyze the effects of abnormalities and financial constraints, considering the complexities of the financial market Attention to secondary influential factors, such as the effects of political, social, and economic impacts on research results, and comparing different financial markets, including comparing the results of the Iranian financial market with other global financial markets to examine differences and similarities in behaviors and impacts. Investigating the role of developed factors such as technology, innovation, and transparency in the effects of abnormalities and financial constraints, and developing research based on a behavioral approach to better understand the psychological effects of investors on market behavior. Examining the ethical aspects of abnormalities and their effects on decision-making and performance of companies and markets, as well as utilizing mixed data, can significantly impact research findings.

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