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Impact of Financial Characteristics on Future Corporate Risk-Taking Behavior

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ABSTRACT

The purpose of this study is to invoke prospect theory to construct an empirical framework to predict idiosyncratic risk, and argue that when a firm performs better than its benchmarks, the firm tends to play safe by avoiding firm-specific risk to maintain its satisfactory performance level, but when a firm performs worse than its benchmarks, the firm may become aggressive with taking more risks to achieve an increased level of performance. The purpose of this study is to investigate the effect of financial characteristics on future corporate risk taking behavior. After designing the indicators for assessing financial characteristics, the transaction data were collected from the Stock Exchange in the five-year period of 2011-2015. A sample of 111 companies was selected by sampling method based on the Cochran formula, which resulted in a total of 555 year-firm observations. In this study, linear regression and correlation were used to investigate the hypothesis, and for analyzing data and hypothesis testing, we used Eviews software. What can be said in the summing-up and conclusion of the general test of research hypotheses is that the disproportionate changes in sales costs, advertising costs, rental costs, liquidity, financial leverage, and disproportionate changes in capital costs have a positive impact on future corporate risk taking behavior. In addition, other results indicate a negative impact of disproportionate changes in sales growth, inventory, liquidity, and asset turnover on future corporate risk-taking behavior.

1 Introduction

Due to the fact that the managers of Bank branches are part of the Bank's operational managers and have a high executive role, their decision in terms of uncertainty and instability can play a decisive role in implementing the general policies of a bank. Therefore, considering the importance of future risk-taking and the need for it in different aspects of organizations, it appears that financial characteristics have a significant impact on future risk-taking behavior. When a firm upgrades its criterion of performance, satisfied decision makers tend to choose strategies that will keep the gains achieved and prevent risks. Profitable companies tend to avoid risky activities, such as acquisitions and new investments in food; computer and industrial production [1]. If a company is behind its financial performance criterion, there is a negative relationship between performance and its risk-taking behavior according to the theory of prospects. And if the company's performance worsens, the measurement of performance decreases and leads to the company increases its risk-taking behavior in the future. When

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financial characteristics divert from the criterion to undesirable directions, that is, if this deviation affects badly the company's performance, managers will try to regain popularity in the dimensions of the financial attributes associated with accepting the levels of risk increases. If financial characteristics are incompatible with a firm's criterion in a positive manner, decision makers will reassess their current strategy and seek new strategies to bring financial characteristics to criterion levels [2]. The research intends to show that the special risk, if measured in a relative change form, is relatively unpredictable in relation to the relative financial popularity or relative lack of popularity, and the predicted relationship is theoretically negative. As a result, the main question is whether financial characteristics affect the behavior of future corporate risk-taking?

2 Theoretical Literature and Background

Changes in the relative performance of sales costs affect the long-term performance [3]. Consequently are useful for future special risks. Based on the theory of prospects, we expect the relative performance of sales costs have a positive relationship with future risk-taking. On the other hand, advertising cost is second financial characteristic and it has always been shown that for a positive impact on short-run performance [4].then we expect that disproportionate change in advertising costs have a negative relation with future risk-taking. If the systematic decrease (increase) in rental costs in the industry has occurred over the sample period, we expect a positive (negative) signal for future risk-taking behavior, which indicates a positive relationship. Regarding the fixed cost structure, sales growth is expected to be more regular and faster in the form of relative performance measurement, leading to stronger financial performance. As a result, a disproportionate increase in sales growth is expected to signal a decline in future risk-taking behavior. Lev and Thiagarajan [5] argued that the disproportionate increase in inventory in general is a problem in production and sales, which has direct and negative effects on financial performance. Therefore, disproportionate increase in inventory is expected as a signal for the company, which is likely to lead to further risk in the future. On the one hand, aggressive cash management improves performance [6] and, on the other hand, successful companies with a relatively high concentration of current assets tend to yield higher returns on assets [7]. Therefore, and the disproportionate change in cash sends a signal to the company's future risk-taking behaviour. Miller and Orr [9] stated that the incentive for a transaction to hold cash could significantly deteriorate financial performance, which is created due to the heavy burden of transaction costs when a non-cash financial asset is converted into cash. Opler et al. [8] argued that, given the impact of information asymmetry and the costs of debt agency, the company can see its benefit in cash holding to reduce the costs of financial disorder.

Generally, financial leverage is considered as a risk factor by previous studies [3,12] in the accounting and finance literature. Firms are riskier when their capital structure shows a higher debt ratio, and investors are asking for higher returns to invest in high-debt firms. According to [9], a higher leverage will lead to higher interest rates and a willingness to cut off corporate profits. On the other hand, the leverage may lead to stronger financial performance, as the company uses this opportunity to use creditors' funds to create value. Relative leverage performance can reduce the future risk signals. The level of productivity using assets is usually measured by the asset turnover, and it is shown that the negative asset turnover has a negative relation with the Q-Tobin which is widely use as a metric of performance [10]. Capital costs can add value to a company because it is often considered as future investment by the company [1]. Sanjukta [11] has also shown that increasing competition in the loan and deposit sectors can reduce the loan rate and credit risk of borrower and increase financial

stability. For capital and liquidity risk, the prism value model will act as a theoretical framework. Leaven and Levine [3] concluded that more powerful banks tend to be more risk-taking. Shareholders also have a stronger incentive for increasing risk-taking of managers rather than non-shareholders. Parse et al., [13] argued that managers can make a mistake, such as investing in an obscure case that has not been fully developed. Jafarinejad and Farad [13] showed that the average risk-taking rate of investors in the stock exchange is less than 60, and also the risk-taking level of men is more than women. Ghasemi [10] shows that companies have a direct and positive effect on net profit and the larger the size of companies, the lower the likelihood of a financial crisis. Mansourfar et al., [14] showed that there is a positive linear relationship between individual, organizational and performance risk-taking. Mazloumi et al., [15] (2007) showed that there is a meaningful and direct relationship between the risk-taking of managers in returns of total assets risky situations with the earnings. Khaleghi [20] alliance Theory and Pricing Stock of Corporate in Tehran Stock Exchange, how the investors react to the received information plays a crucial role in determining the return of stock exchange market. Supply and demand based upon incorrect decisions lead to the price deviation of inherent values. This paper aims to study the impact of salience phenomenon on disproportionate pricing and investor overreaction in the corporate in Tehran stock exchange. Research methodology is correlative. Statistical sample involves 120 corporate accepted by Tehran stock exchange during 2012-2016. To test the hypotheses, a regression analysis method has been selected. Research findings have indicated that there exists a promising phenomenon in Tehran stock exchange causing the investors overreaction followed by the disproportionate pricing and the results have shown that the impact of salience is different on strong and weak information environments.

3 Research Methodology

The present study is an applied study and is done by post-event approach. The purpose of the applied research is the development of applied knowledge in a particular context. The present study is also a descriptive-correlation method in terms of method and nature. Data collection was carried out using library method and referring to financial statements and explanatory notes and with the help of software RahaadNovin and TadbirPardaz.

3.1 Research Hypotheses

Ten hypothesis have been analysed throughout the current paper.

Hypothesis 1: Disproportionate change in sales costs has a positive impact on future corporate risk-taking behavior.

Hypothesis 2: Disproportionate change in the cost of advertising has a negative impact on the future corporate risk-taking behavior.

Hypothesis 3: Disproportionate change in rental cost has a positive impact on future corporate risk-taking behavior.

Hypothesis 4: Disproportionate change in sales growth has a negative impact on future corporate risk-taking behavior.

Hypothesis 5: Disproportionate change in inventory has a negative impact on the future corporate risk-taking behavior.

Hypothesis 6: Disproportionate change in cash has a negative and positive impacts on future corporate risk-taking behavior.

Hypothesis 7: Disproportionate change in liquidity has a negative and positive impacts on future corporate risk-taking behavior.

Hypothesis 8: Disproportionate change in financial leverage has a negative and positive impacts on future corporate risk-taking behavior.

Hypothesis 9: Disproportionate change in asset turnover has a positive impact on future corporate risk-taking behavior.

Hypothesis 10: Disproportionate change in the cost of capital has a negative impact on future corporate risk-taking behavior.

3.2 Statistical community and sample selection

The statistical population is all listed companies in the Tehran Stock Exchange in the period from 2011 to 2015. Sample selection steps are presented in Table 1.

Table 1: Different Sampling Steps

Different sampling steps	Numbers
The number of companies listed on Tehran Stock Exchange at the end of 2015	538
The number of companies that have gone out of stock in the time period of the research	(93)
The number of companies entered into the stock market in thetime period of the research	(43)
The number of companies that have changed their fiscal year in the time period of the research	(31)
The number of companies whose financial information was not available in the time period of the research	(61)
The number of companies that have transactional break for more than 3 months in the time period of the research	(103)
The number of companies whose financial year does not end on 29.12	(52)
Number of sample companies	155

Source: Researcher Findings

In Table 1, 155 companies were selected as sample to calculate statistical hypotheses.

3.3 Models and Research Variables

In this research, in order to answer the research hypotheses, the general model is described in model (1):

$$BR_{it+1} = \alpha + \sum_{i=1}^{10} \beta_{it} * X_{it} + \varepsilon_t Y_{t+1} = \alpha + \sum_{i=1}^{10} \beta_{it} * X_{it} + \varepsilon_t \quad (1)$$

The regression model of the first to tenth hypotheses is presented in models (2) to (11), respectively:

$$BR_{it+1} = \alpha + \beta_1 Cos_{it} + \varepsilon_{it} \quad (2)$$

$$BR_{it+1} = \alpha + \beta_1 ADV_{it} + \varepsilon_{it} \quad (3)$$

$$BR_{it+1} = \alpha + \beta_1 Ren_{it} + \varepsilon_{it} \quad (4)$$

$$BR_{it+1} = \alpha + \beta_1 Grow_{it} + \varepsilon_{it} \quad (5)$$

$$BR_{it+1} = \alpha + \beta_1 Cash_{it} + \varepsilon_{it} \quad (6)$$

$$BR_{it+1} = \alpha + \beta_1 Liq_{it} + \varepsilon_{it} \quad (7)$$

$$BR_{it+1} = \alpha + \beta_1 Lev_{it} + \varepsilon_{it} \quad (8)$$

$$BR_{it+1} = \alpha + \beta_1 Ast_{it} + \varepsilon_{it} \quad (9)$$

$$BR_{it+1} = \alpha + \beta_1 Cae_{it} + \varepsilon_{it} \quad (10)$$

in which

BR_{it+1}: Future risk-taking behavior in year t+1,

Cos it: Disproportionate change in sales expenses in year t,

Advit: Disproportionate change in advertising cost in year t,

Ren it: Disproportionate change in rental costs in year t,

Grow it: Disproportionate change in sales revenue in year t,

Inv it: Disproportionate change in inventory in year t,

Cashit: Disproportionate change in cash in year t,

Levit: Disproportionate change in financial leverage in year t,

Liq it: Disproportionate change in liquidity in year t,

Ass it: Disproportionate change in asset turnover in year t,

Cap it: Disproportionate change in capital expenditures in year t

Dependent variables can be stated as follows:

(A) Future risk-taking behavior: Relative variation of special risk in year t+1, which is calculated as the model (12) with a relative change in the residual standard error of the Fama-French three-factor model:

$$(Ri- Rf)t = \alpha+\beta_1(Rm- Rf)t+ \beta2SMBi+ \beta3HMLi+\varepsilon t \quad (11)$$

Where

Rm-Rf: The risk permium of market and the remuneration that the capital market pays to all investors in shares.

RF: Monthly risk-free interest rate (equal to deposit interest rate)

Rm: Monthly return of the price index and cash market returns obtained from model (12):

$$\text{Monthly market returns} = \frac{\text{mount of index at the end of mounth} - \text{amount of index at the begining of mounth}}{\text{mount of index at the begining of mounth}} \quad (12)$$

Where

SMB: The average monthly different of returns on portfolio of small and large companies

HML: The difference between the average returns on the portfolio with the highest ratio of book

value to market value

Ri: monthly stock return calculated as model (13):

$$R_{it} = \frac{P_{it}+D_{it}-P_{io}}{P_{io}} \times 100 \quad (13)$$

Where

Pit: stock price i at the end of time t,

Poi: stock price i at the beginning of time t,

D_{it}: dividend paid by company i at time t

Formation of portfolios: To eliminate the effect of the size and the ratio of the book value to market value of stocks, we created 16 portfolios by the Fama-French method. To calculate the returns of the formed portfolios, a simple average method has been used, which Table 2 shows this different combinations.

Table 2: Formation of 16 Portfolios Based on the Size and Ratio of Book Value to Market Value

Ratio of book value to market price and firm size	Low (L)	Some Low (SL)	Some High (SH)	High (H)
Small (S)	S.L	S.SL	S.SH	S.H
Some Small (SS)	SS.L	SS.SL	SS.SH	SS.H
Some Big (SB)	SB.L	SB.SL	SB.SH	SB.H
Big (B)	B.L	B.L	B.SH	B.H

In Table 2, the matrix is redefined at the end of each month and also the size and ratio of the book value to the market value of each stock company are re-calculated. Thus, for each month, there is a 4×4 matrix, in which each firm has a number of companies of almost equal size, with a similar book value to market value. The monthly returns of each company put in the category of the company, and we have created 16 stock portfolios and we want to get the returns of each of these portfolios. Then for each of the hypothetical portfolios created, we obtain the average return.

Calculating the SMB variable: The difference between the average monthly returns of small and large portfolios of the model (14) is obtained:

$$SMB = 1.4(S.L + S.SL + S.SH + S.SH) - 1.4(B.L + B.SL + B.SH + B.H) \quad (14)$$

The size of the company is calculated by Fama-Franch [9] method equals to the multiplying the number of in-flow shares at the market final price.

Calculating the HML variable: The difference between the average monthly returns of stock portfolios of companies with a high and low book value to market value, according to model (15):

$$HML = 1.4\ (S.H + SS.H + SB.H + B.H) - 1.4\ (S.L + SS.L + SB.L + B.L) \quad (15)$$

Independent variables can be stated as follows:

(A) Disproportionate change in sales costs: relative change in the price of sold products minus the relative change in total sales according to model (16):

D.Cost of Sales=(cogs $_t$ .cogs$_{t-1}$)-(revt$_t$ .revt$_{t-1}$) (16)

Cogs: Price of Sold products and Revs: Total Sales

(B) The disproportionate change in the cost of advertising is obtained according to model (17):

D.Advertising$_t$ = (xad$_t$ .xad$_{t-1}$)-(revt$_t$ .revt$_{t-1}$) (17)

Xad: Advertising Costs

(C) Disproportionate change in rental cost equals to relative change in rental cost minus the relative change in total sales in model (18):

D.Rent =(xrent$_t$. xrent$_{t-1}$) - (revt$_t$. revt$_{t-1}$) (18)

Xrent: rental cost

(D) Disproportionate change in sales revenue: The relative change in total sales, minus the relative change in total sales of that industry, was obtained according to model (19):

D.Growtht =(xrent$_t$. xrent$_{t-1}$) - (indirec$_t$. indrevt$_{t-1}$) (19)

Indrevt: Sell the entire industry

(E) Disproportionate change in inventory obtained from relative change in inventory minus relative change in total sales according to model (20):

D.Inventory$_t$ =(invt$_t$. invt$_{t-1}$) - (revt$_t$. revt$_{t-1}$) (20)

Invite: inventory

(F) Disproportionate change in cash: relative change in cash minus the relative change in total sales according to model (21):

D.Cash =(Ch$_t$. Ch$_{t-1}$) - (revt$_t$. revt$_{t-1}$) (21)

CH: Cash

(G) Disproportionate change in financial leverage: the relative change in the leverage of the company, minus the relative change in the financial leverage of the industry, is derived from model (22):

D. Leverage = IT$_t$. AT$_t$). (IT$_{t-1}$. AT$_{t-1}$) - (indlt$_t$ .indat$_t$) .(indlt$_{t-1}$.indat$_{t-1}$) (22)

IT: Total Debt, AT: Total Assets, and Indlt: Total Debt Industry

(H) Disproportionate Change in Liquidity: Relative change in liquidity of the company, minus the relative change in the liquidity of the same industry, is obtained according to model (23):

D. Liquidity =(ACT $_t$. lct$_t$) . (ACT $_{t-1}$. lct $_{t-1}$) - (indict. indict) . (indict $_{t-1}$. indict $_{t-1}$) (23)

ACT: Current assets, Let: Current debt, Indic: Current industry debt, and Indict: Current industry assets

(I) Disproportionate change in asset turnover: Relative change in company minus asset turnover. Relative change in turnover of the same industry is obtained according to model (24):

D. Asset turn over$_t$ = (revt .at$_t$).(revt$_{t-1}$.at $_{t-1}$)- (indirec$_t$ .inden$_t$).(indrevt$_{t-1}$ .indat$_{t-1}$) (24)

indrevt $_t$: Total industry sales, and Indent: Industry assets

(J) Disproportionate change in capital costs: A relative change in the company's capital costs, minus the relative change in the capital costs of the industry, is obtained according to model (25):

Capital Expenditure D=($capx_t$.$capx_{t-1}$)- ($indcapx_t$.$indcapx_{t-1}$) (25)

Capx: Capital Costs, and Indcap: Industry Capital Costs

4 Research Findings

The descriptive statistics of the research variables are presented in Table 3.

Table 3: Descriptive statistics of research variables

	Future risk-taking behavior	Dispro-portion-ate change in sales costs	dispro-portion-ate change in advertis-ing costs	dispro-portion-ate change in rental costs	dispro-portion-ate change in sales revenues	dispro-portion-ate change in inventory	dispro-portion-ate change in cash	dispro-portion-ate change in financial leverage	dispro-portion-ate change in liquidity	dispro-portion-ate change in asset turnover	dispro-portion-ate change in capital cost
Average	-214.632	-5.19014	-0.68970	-14.6462	-5418850	-1300.01	0.501062	0.050521	-0.16055	-1.59940	0.965629
Median	-827.384	-0.71598	-0.48401	-0.83211	-5279871	-0.03662	-0.27900	-0.00860	-0.00261	-0.09298	-0.21219
Maxi-mum	11795.40	-0.04592	1.082611	71.16385	2.84E+09	82548.84	13.11162	1.315077	2.118552	2.118552	27.94857
Mini-mum	-3047.12	-1622.48	-6.28466	-381.745	-2.9E+09	-555328.	-2.28946	-1.10456	-7.43099	-27.2593	-8.59931
Standard Deviation	2910.684	72.25340	1.219133	64.07008	6.97E+08	26055.06	2.564749	0.424503	1.285489	5.747356	4.745980
Skewness	2.810397	-20.7270	-3.20184	-4.57267	-0.75076	-18.8554	3.122504	-0.02398	-4.20303	-3.76388	4.328094
Kurtosis	11.09567	456.2929	15.51777	24.71746	17.13979	384.5677	14.72336	4.448894	24.57080	16.05778	24.99584
Jack-Bera	0.224556	0.478856	0.457887	0.128566	0.466587	0.336566	0.405866	0.485565	0.123555	0.524566	0.126996
Probabil-ity	0.745550	0.532544	0.554555	0.855455	0.546558	0.675555	0.602555	0.521455	0.885558	0.745555	0.888440
Total	-119121.	-2880.52	-382.787	-8128.66	-3.0E+10	-721510	278.0894	28.03897	-89.1102	-887.671	535.9244
Total standard deviation	4.69E+09	2892187.	823.4017	2274156.	2.69E+20	3.76E+11	3644.176	99.83223	915.4756	18299.78	12478.48
Observa-tion	555	555	555	555	555	555	555	555	555	555	555
Sections	111	111	111	111	111	111	111	111	111	111	111

In Table 3, the average which represents the equilibrium point and the distribution center and is a good indicator of the centrality of the data that for the future risk-taking behavior variable is -214.6329. Median is another central indicator that shows the status of the community and is -827.3840 for the future risk-taking behavior variable. The standard deviation is one of the most important dispersion indices which is about 2910.684 for the risk-taking behavior variable. In this study, Kurtosis is positive for all variables. In this research, Jark-Bera test is tested for the normalization of the dependent variable, and since the values of the significance level, the risk-taking behavior variable is 5%, so the null hypothesis, that is, the normality of the variable is verified.

4.1 Reliability test of research variables

The results of the unit root test of the future risk-taking behavior are presented in Table 4. In Table 4, the null hypothesis based on the existence of a single root with the consideration of the unit root process by the Levine, Lyn and Chow method, as well as the test of Im, boys and Shin, and the Fisher's ADF method, and Fisher's PP method with 111 sections and 555 observations at the 5% level is rejected. Results for all variables indicate the lack of a single root.

Table 4: Unit root risk test of future corporate risk-taking behavior

Method	Statics of test	Probability	Sections	Observations
Zero hypothesis: existence of unit root (common unit root process)				
Levine, Lyn and Chow	-24.0348	0.000	111	444
Zero hypothesis: existence of unit root (single unit root process)				
Iim and sun and shin (W test)	-5.36412	0.00000	111	444
ADF-Fisher (Chi-square)	288.196	0.0018	111	444
F-Fisher	322.840	0.0000	111	444

4.2 F-Lime and Housman test

The results of the F-limer test and Hausman test are presented in in Table 5 and Table 6, respectively:

Table 5: F-Limer test of research hypotheses

Research hypotheses	F-Statics	Freedom degree	Significance level
First	1.976606	(110,443)	0.000
Second	1.824759	(110,443)	0.000
Third	2.137894	(110,443)	0.000
Forth	2.015765	(110,443)	0.000
Fifth	1.989677	(110,443)	0.000
Sixth	1.949110	(110,443)	0.000
Seventh	2.167038	(110,443)	0.000
Eighth	2.081014	(110,443)	0.000
Ninth	1.956260	(110,443)	0.000
Tenth	1.990288	(110,443)	0.000

In Table 5, an F-Limer test is used to select the combination data method. Considering that the significance level of this test for all research models was less than 0.05, the panel data method will be used to estimate the pattern. Given that in the F-Limer test, the hybrid data method of the Hausman test is not accepted, the results of which are given in Table 6.

Table 6: Hausman test of research hypotheses

Hypotheses	First	Second	Third	Forth	Fifth	Sixth	Seventh	Eighth	Ninth	Tenth	variables
Chi-square	90.04	14.17	6.503	3.191	70.7	6.11125	60.019	79.699	33.8099	19.191	33.737
Freedom degree	1	1	1	1	1	1	1	1	1	1	10
Significance	0.000	0.0002	0.0108	0.0174	0.000	0.000	0.000	0.000	0.005	0.000	0.000

In Table 6, based on the calculations, the method of constant effects is more appropriate for all hypotheses.

4.3 Summary of Analyses for Each Hypothesis

4.3.1 Testing the First Hypothesis

The results of the first hypothesis test are presented in Table 7.

Table 7: Summary of the results of the hypothesis pattern

Variables	Variable	Coefficient	Standard deviation	t-statics	result
y-Interception	α	-222.5366	41.60769	-5.348447	Significant
Disproportionate change in sale costs	Cosit	0.152283	0.057067	2.668488	Significant
Deterministic coefficient		0.364082	F-statics		2.284957
Adjusted Deterministic coefficient		0.204743	significance level		0000.0
Durbin-Watson			1.885746		

In Table 7, the probability of t-statistic for the constant coefficient and the coefficients of the disproportionate change in sales costs are less than 5%; therefore, this relationship is statistically significant, and with 95% confidence this variable is in the meaningful regression model. The adjusted Deterministic coefficient indicates that the independent variable can explain 20% of the variation of the dependent variable. The probability of the F-statistic shows that the whole model is statistically significant. Considering the hypothesis, because disproportionate change in the company's sales costs affect future corporate risk-taking behavior in a meaningful model, then the null assumption is rejected, that is, the disproportionate change in sales costs of the company has a positive effect on future corporate risk-taking behavior.

4.3.2 Testing the Second Hypothesis

The results of the second hypothesis test are presented in Table 8. In Table 8, the probability of the t statistic for the constant coefficient and the coefficients of the disproportionate change in the cost of advertising is less than 5%; therefore, the relationship is statistically significant, so with 95% confidence, this variable is significant in the regression model. The adjusted deterministic coefficient shows the explanatory power of independent variables that can explain 54% of the variations of the dependent variable. The probability of the F statistic shows that the whole model is statistically significant. Considering the hypothesis that because of the disproportionate change in the cost of a company's advertising affect the future risk-taking is a meaningful model, on the other hand, because the disproportionate coefficient of the cost of advertising is positive, therefore, null assumption is not rejected, that is, disproportionate change in advertising costs of a company does not have a negative impact on future corporate risk-taking behavior.

Table 8: Summary of the Results of the Second Hypothesis Model

Variables	Variable	Coefficient	Standard deviation	t-statics	result
y-Interception	α	19.85556	32.29408	0.614836	Meaningless
Disproportionate change in advertising costs	Advit	0.339983	0.015552	21.86127	Significant
Deterministic coefficient	0.636837			F-statics	6.998538
Adjusted Deterministic coefficient	0.545841			significance level	0.0000
Durbin-Watson				2.306569	

4.3.3 Testing the Third Hypothesis

The results of the third hypothesis test are presented in Table 9.

Table 9: Summary of the results of the third hypothesis model

Variables	Variable	Coefficient	Standard deviation	t-statics	result
y-Interception	α	-151.8048	41.13956	-3.689997	Significant
Disproportionate change in rental costs	Ren it	0.428970	0.062156	6.901504	Significant
Deterministic coefficient	0.839306		F-statics	2.584564	
Adjusted Deterministic coefficient	0.724098		significance level	0.0000	
Durbin-Watson			2.120775		

In Table 9, the probability of t-statics for the constant coefficient and the coefficients of the variable, the disproportionate change in the cost of renting is less than 5%; therefore, the relationship is statistically significant and therefore, with 95% confidence, this variable is significant in the regression model. The adjusted deterministic coefficient shows the explanatory power of independent variables that can explain 72% of the variations of the dependent variable. The probability of F statistics indicates that the whole model is statistically significant. Considering the hypothesis that disproportionate change in the cost of renting affect the future corporate risk-taking behavior is a meaningful model, so the null assumption is rejected; that is, the disproportionate change in the rental cost of a company has a positive effect on future risk-taking behaviors.

4.3.4 Testing the Fourth Hypothesis of the Research

The results of the fourth hypothesis test are presented in Table 10. In Table 10, the probability of t-statics for the constant coefficient and the coefficients of the variable disproportionate change in the growth of sales is less than 5%; therefore, the relationship is statistically significant, so with 95% confidence, this variable is significant in the regression model. The adjusted deterministic coefficient shows the explanatory power of independent variables that can explain 72% of the variations of the dependent variable. The probability of the F-statistic shows that the whole model is statistically significant. Given the hypothesis, the disproportionate change in sales growth affect the future corporate risk-taking behavior, is meaningful in the model, so the null assumption is rejected; that is, the disproportionate change in sales growth of a company has a negative effect on future risk-taking behavior.

Table 10: Summary of the Results of the Fourth Hypothesis Model

Variables	Variable	Coefficient	Standard deviation	t-statics	result
y-Interception	α	-196.7712	40.89815	-4.811249	Significant
Disproportionate change in sales growth	Grow	-0.329621	0.065158	5.058790	Significant
Deterministic coefficient		0.736188	F-statics		2.263319
Adjusted Deterministic coefficient		0.720199	significance level		0.000
Durbin-Watson			2.258942		

4.3.5 Testing the Fifth Hypothesis of the Research

The results of the fifth-hypothesis test are presented in Table 11.

Table 11: Summary of the Results of the Fifth Hypothesis

Variables	Variable	Coefficient	Standard deviation	t-statics	result
y-Interception	α0	-215.5873	41.81600	-5.155618	Significant
Disproportionate change in sales growth	Invit	-0.007342	0.002425	-3.027535	Significant
Deterministic coefficient		0.633250	F-statics		1.988043
Adjusted Deterministic coefficient		0.616525	significance level		0.000000
Durbin-Watson			2.231924		

In Table 11, the probability of t-statics for the constant coefficient and the coefficients of the variable of disproportionate change in inventory is from 5%; therefore, the relationship is statistically significant, so with 95% confidence, this variable is significant in the regression model. The adjusted deterministic coefficient shows the explanatory power of independent variables that can explain 61% of the variations of the dependent variable. The probability of the F-statistic shows that the whole model is statistically significant. Considering the hypothesis, because the impact of disproportionate change in inventory on the future corporate risk-taking behavior is meaningful in the model, then the null assumption is rejected, that is, the disproportionate change in inventory has a negative effect on the future risk-taking behavior.

4.3.6 Test of the Sixth Hypothesis of the Research

The results of the sixth hypothesis test are presented in Table 12. In Table 12, the probability of the t statistic for the constant coefficient and the coefficients of the variables of disproportionate change in cash is 5%; therefore, the relationship is statistically significant, so with 95% confidence, this variable is significant in the regression model. The adjusted deterministic coefficient shows the explanatory power of independent variables that can explain 71% of the variations of the dependent variable. The probability of the F statistic shows that the whole model is statistically significant. Given the hypothesis and because the impact of the disproportionate change in liquidity on future corporate risk behavior is meaningful in the model, so the null assumption is rejected; that is, the disproportionate change in a company's liquidity has a negative and positive effects on future corporate risk-taking behavior.

Table 12: Summary of the Results of the Sixth Hypothesis Model

Variables	Variable	Coefficient	Standard deviation	t-statics	result
y-Interception	α	-204.3736	44.85478	-4.556339	Significant
Disproportionate change in cash	Cashit	-0.204751	0.019948	-10.26425	Significant
Deterministic coefficient		0.732668		F-statics	1.936371
Adjusted Deterministic coefficient		0.715797		significance level	0.000001
Durbin-Watson				2.224819	

4.3.7 Testing the Seventh Hypothesis of the Research

The results of the seventh research hypothesis test are presented in Table 13.

Table 13: Summary of the Results of the Seventh Hypothesis Model

Variables	Variable	Coefficient	Standard deviation	t-statics	result
y-Interception	α	-231.3128	43.22784	-5.351016	Significant
Disproportionate change in liquidity	Liqit	0.330161	0.118274	2.791497	Significant
Deterministic coefficient		0.351940		F-statics	1.936371
Adjusted Deterministic coefficient		0.189559		significance level	0.000001
Durbin-Watson				2.222924	

In Table 13, the probability of the t statistic for the constant coefficient and the coefficients of the variable the disproportionate change in liquidity is 5%; therefore, the relationship is statistically significant and therefore, with 95% confidence, this variable is significant in the regression model. The adjusted deterministic coefficient shows the explanatory power of the independent variables that can explain 18% of the variations of the dependent variable. The probability of the F statistic shows that the whole model is statistically significant. Considering the hypothesis and because the impact of disproportionate liquidity changes on future corporate risk-taking behavior is significant in the model, but considering that the coefficient of variable the disproportionate change in liquidity is not negative, then the null assumption is not rejected, that is, the disproportionate change in the liquidity has no negative impact on future corporate risk-taking behavior.

4.3.8 Testing the Eighth Hypothesis of the Research

The results of the eighth hypothesis test are presented in Table 14. In Table 14, the probability of t-statics for the constant coefficient and the coefficients of the variable the disproportionate change in the financial leverage of a company is 5%. Therefore, the relationship is statistically significant, so with 95% confidence this variable is significant in the regression model. The adjusted deterministic coefficient shows the explanatory power of independent variables that can explain 72% of the variations of the dependent variable. The probability of the F statistic shows that the whole model is statistically significant. Given the hypothesis and because the impact of disproportionate change in liquidity on future corporate risk-taking behavior is meaningful in the model, so the null assumption is rejected, that is, the disproportionate change in the financial leverage of a company has a positive effect on future corporate risk-taking behavior.

Table 14: Summary of the Results of the Eighth Hypothesis Model

Variables	Variable	Coefficient	Standard deviation	t-statics	result
y-Interception	α	-231.3128	43.22784	-5.351016	Significant
Disproportionate change in financial leverage	Levit	0.330161	0.118274	2.791497	Significant
Deterministic coefficient		0.742668	F-statics		1.936371
Adjusted Deterministic coefficient		0.725797	significance level		0.000001
Durbin-Watson			2.234819		

4.3.9 Testing the Ninth Hypothesis of the Research

The results of testing the ninth hypothesis of research are presented in Table 15.

Table 15: Summary of the Results of the Ninth Hypothesis Model

Variables	Variable	Coefficient	Standard deviation	t-statics	result
y-Interception	α	-235.9512	42.98453	-5.489212	Significant
Disproportionate change in assets turnover	Astit	0.133289	0.062579	-2.129918	Significant
Deterministic coefficient	0.733268		F-statics		1.989671
Adjusted Deterministic coefficient	0.691655		significance level		0.000000
Durbin-Watson			2.277277		

In Table 15, the probability of t-statistics for constant coefficients and variable the disproportionate change in asset turnover is 5%; therefore, the relationship is statistically significant, so with 95% confidence, this variable is significant in the regression model. The adjusted deterministic coefficient shows the explanatory power of the independent variables that can explain 69% of the variations of the dependent variable. The probability of the F-statistic shows that the whole model is statistically significant. Given the hypothesis and because the impact of the disproportionate change in asset turnover on future corporate risk behavior is meaningful in the model, so the null assumption is rejected, that is, the disproportionate change in asset turnover of a company has a positive effect on future corporate risk-taking behaviour.

4.3.10 Testing the Tenth Hypothesis

The results of the tenth hypothesis test are presented in Table 16. In Table 16, the probability of t-statics for the constant coefficient and the coefficients of the variable the disproportionate change in the capital cost of a company is 5%. Therefore, the relationship is statistically significant, so with 95% confidence, this variable is significant in the meaningful regression model. The adjusted deterministic coefficient shows the explanatory power of the independent variables that can explain 51% of the variations of the dependent variable. The probability of the F statistic shows that the whole model is statistically significant. Considering the hypothesis and because the impact of disproportionate change

in the company's capital cost on future corporate risk behavior is meaningful in the model, but considering that the variable coefficient for disproportionate change in the capital cost is not negative, the null assumption is not rejected, that is, the disproportionate change in the capital cost does not have a negative effect on the future risk-taking behaviour.

Table 16: Summary of the Results of Tenth Hypothesis Model

Variables	Variable	Coefficient	Standard deviation	t-statics	result
y-Interception	α	-216.7810	42.96011	-5.046100	Significant
Disproportionate change in capital costs	Caeit	0.222459	0.010502	2.118289	Significant
Deterministic coefficient	0.533230		F-statics		1.986205
Adjusted Deterministic coefficient	0.516499		significance level		0.000000
Durbin-Watson			2.232003		

Table 17: A Summary of the Findings of the Study of the Relationship Between Research Variables

Result	Probe	t-statics	Adjusted R-squared	Variable	hypothesis
Confirm hypothesis	0.0079	2.668488	0.20	Disproportionate change in sale costs	Hypothesis1
Reject the hypothesis	0.0000	21.86127	0.54	Disproportionate change in advertising costs	Hypothesis2
Confirm hypothesis	0.0000	6.901504	0.72	Disproportionate change in rental costs	Hypothesis3
Confirm hypothesis	0.0000	5.058790	0.72	Disproportionate change in sales growth	Hypothesis4
Confirm hypothesis	0.0000	-3.027535	0.616525	Disproportionate change in sales growth	Hypothesis5
Confirm hypothesis	0.0000	-10.26425	0.715797	Disproportionate change in cash	Hypothesis6
Reject the hypothesis	0.0055	2.791497	0.189559	Disproportionate change in liquidity	Hypothesis7
Confirm hypothesis	0.0000	4.705093	0.725797	Disproportionate change in financial leverage	Hypothesis8
Confirm hypothesis	0.0337	-2.129918	0.691655	Disproportionate change in assets turnover	Hypothesis9
Reject the hypothesis	0.0412	2.118289	0.516499	Disproportionate change in capital costs	Hypothesis10

5 Conclusions and Discussion

The results of the first hypothesis and Suggestions for future research:

The disproportionate change in sales costs of the company will have a positive impact on future corporate risk-taking." Regarding the tests and analyzes carried out by regression and correlation, we concluded that the disproportionate change in the company's sales costs has a significant effect on

future risk-taking behavior and given the positive coefficient of the variable of disproportionate change in sales costs, the existence of the direct relationship between the disproportionate change in sales costs and future risk-taking behavior is deduced, which is in line with the results of Hua et al [17]. Based on the research of each hypothesis, the suggestions is presented as follows. Based on the first one, it is recommended that investors, prior to investing in a company's stock, using the fitted model in this study, examine the effects of disproportionate changes in costs of sales on the future risk-taking and consider the results in their decisions. It is recommended that brokers and financial advisers in the stock market, in addition to the economic and accounting variables affecting the future risk-taking of companies, also pay attention to the disproportionate changes in sales costs

The results of the second hypothesis:

A disproportionate change in advertising costs has a negative impact on future corporate risk-taking. Regarding the tests and analyzes carried out by regression and correlation, we concluded that the disproportionate change in advertising cost has a significant effect on the future risk-taking behavior. Considering the positive coefficient of this variable, the disproportionate change in the cost of advertising, the existence of a direct relationship between the disproportionate shift in advertising costs and future risk-taking behavior is deduced, therefore, this hypothesis cannot be accepted which is consistent with Parsa et al. [18]. According to the results of the second hypothesis, in the field of application, it is recommended that the developers of the theoretical fundamentals of financial reporting and accounting standards consider the results of this research and similar internal investigations and consider the position of the theoretical foundations and qualitative features of corporate financial reporting considering the disproportionate change in advertising costs.

The results of the third hypothesis:

The disproportionate change in the rental cost of a company has a positive impact on future corporate risk-taking." Regarding the tests and analyzes carried out by regression and correlation, we concluded that the disproportionate change in rental cost has a significant effect on the future risk-taking behavior, and given the positive coefficient of the disproportionate change in rental cost, the existence of a direct relationship between the disproportionate change in rental cost and future risk-taking behavior is deduced, which is in line with Ghasemi's research [10]. Also, according to the results of the third hypothesis, financial statements users should pay attention to the disproportionate changes in the cost of rent in their analysis, as well as the stock market should be included in the stock pricing of these companies. According to the results of the fourth hypothesis, and given that the main task of managers is to maximize the promotion of shareholders' equity, managers should pay particular attention to the disproportionate changes in sales growth and implement risk-improvement strategies to increase investor returns.

The results of the fourth hypothesis:

The disproportionate change in sales growth of a company has a negative impact on future corporate risk-taking. Regarding the tests and analyzes carried out by regression and correlation, we concluded that disproportionate change in sales growth has a significant effect on future risk-taking behavior. Considering the negative coefficient of disproportionate change in sales growth, the existence of an inverse relationship between the disproportionate shift in sales growth and future risk-taking behavior is deduced, which is in line with the results of Mazloumi et al. [15].

The results of the fifth hypothesis:

A disproportionate change in inventory of a company has a negative impact on future corporate risk-taking. Regarding the tests and analyzes carried out by regression and correlation, we concluded that disproportionate change in inventory has a significant effect on future risk-taking behavior, and

with regard to the negative coefficient of disproportionate change in inventory, the existence of an inverse relationship between disproportionate change in inventory and future risk-taking behavior is deduced which is in line with the results in the literatures. Based on the results of the fifth hypothesis, it is worthwhile for the Audit Organization and other regulatory and oversight bodies to focus on the development of accounting standards and financial rules for the category of disproportionate changes in inventory.

The results of the sixth hypothesis:

A disproportionate change in company's liquidity has a negative impact on future corporate risk-taking. Regarding the tests and analyzes carried out by regression and correlation, we concluded that disproportionate change in liquidity has a significant effect on future risk-taking behavior, and with regard to the negative coefficient of liquidity disproportionate change, the existence of an inverse relationship between disproportionate change in liquidity and future risk-taking behavior is deduced which is consistent with the result of Sanjukta [11].

The results of the seventh hypothesis.

A disproportionate change in the liquidity of a company has a negative impact on future corporate risk-taking.Regarding the tests and analyzes carried out by regression and correlation, we concluded that a disproportionate change in liquidity has a significant effect on future risk-taking behavior, and with regard to the positive coefficient of this change, the existence of a direct relationship between disproportionate change in liquidity and future risk-taking behavior is deduced, so this hypothesis is not accepted, which is in line with the results of Sanjukta [11]. According to the results of the eighth hypothesis study, it is suggested to educational institutions and students to use the results of this research in comparative studies and other financial research, and investors, investment managers and financial providers using the results of this research to predict, it is better to use the future risk appetite of their companies.

The results of the eighth hypothesis:

The disproportionate change in financial leverage of a company has a positive impact on future corporate risk-taking. Regarding the tests and analyzes carried out by regression and correlation, we concluded that the disproportionate change in financial leverage has a significant effect on future risk-taking behavior. Considering the positive coefficient of this change in financial leverage, the existence of a direct relationship between the inequality of financial leverage and future risk-taking behavior is deduced, which is consistent with the results of Hua et al. [9].

The results of the ninth hypothesis:

A disproportionate change in asset turnover of a company has a positive impact on future corporate risk-taking. Regarding the tests and analyzes carried out by regression and correlation, we conclude that the disproportionate change in asset turnover has a significant effect on the future risk-taking behavior and considering the negative coefficient of this variable, the disproportionate change in asset turnover, the existence of the relationship between disproportionate change in asset turnover and future risk-taking is inferred from this hypothesis, which is consistent with Lavine and Levine's [16].

The results of the tenth hypothesis:

The disproportionate change in the company's capital cost has a negative impact on future corporate risk-taking. Regarding the tests and analyzes carried out by regression and correlation, we conclude that the disproportionate change in capital cost has a significant effect on future risk-taking behavior. Considering the positive coefficient of the variable of the disproportionate change in the cost of capital, the existence of the direct relationship between inappropriate changes in capital cost and future risk-taking behavior is inferred, so this hypothesis is not accepted, which is in line with the results of

Hua et al. [9]. According to the ninth hypothesis, the requirement for companies to provide information in addition to the current information, for example, is proposed as an inappropriate change in asset turnover. According to the results of the tenth hypothesis, it is suggested that the activists present in the capital market, while considering the importance of the disproportionate change in the cost of capital, consider the findings of this study about the fluctuations of long-term predictions of risk-taking behavior.

This research seeks to find out the effect of financial characteristics on future corporate risk-taking behavior. Research hypotheses indicate that disproportionate changes in sales costs, advertising costs, rental costs, liquidity, financial leverage, and capital costs have a positive impact on future corporate risk-taking behavior. In addition, other results indicate a negative effect of disproportionate changes in sales growth, inventory, liquidity, and disproportionate changes in asset turnover on future corporate risk-taking behavior. The results of this study are so far in line with theoretical foundations and research background, for instance Luo and Tiagarajan [3] argued that disproportionate increase in inventory is a signal for the company, which is likely to lead to lower risk in the future. Miller and Orr [19] stated that the incentive for a cash-holding transaction can significantly worsen the firm's financial performance, which is due to the heavy burden of the company's transaction costs when a non-financial asset is converted into cash. However, Hua et al. [9] argued that, given the impact of information asymmetry and the cost of debt agency, the company can see its interest in cash management. In order to reduce the cost of financial turmoil, according to his results, higher leverage leads to higher interest rates and a willingness to cut off corporate profits. On the other hand, the leverage may lead to stronger financial performance, as the company uses this opportunity to use creditors' funds to create value. According to the results, it is suggested to future researchers:

Researchers are encouraged to explore the following topics in their future research:

- The impact of financial characteristics on investment efficiency in active companies of Tehran Stock Exchange.

- The Impact of financial characteristics on capital cost.

- The effect of financial characteristics on stock market volatility fluctuations.

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