

Investigating the Effect of Financial Risk Reporting on Stock Returns with the Moderating Role of Competition in the Product Market

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Abstract

Objectives: This study aims to examine the effect of financial risk reporting on stock returns, considering the moderating role of product market competition among firms listed on the Tehran Stock Exchange. It is grounded in the notion that competition encourages firms to voluntarily disclose more information, thereby improving market assessments and enhancing the credibility of financial reporting through governance mechanisms like independent directors.

Methodology/Design/Approach: To test the proposed hypotheses, data from listed firms on the Tehran Stock Exchange during the period 2015–2019 were analyzed. A sample of 120 firms was selected using the systematic elimination method. The study employed quantitative methods to assess the relationships between financial risk reporting, stock returns, and product market competition.

Findings: The results indicate that product market competition significantly influences the extent of financial risk disclosure. Furthermore, financial risk reporting has a significant impact on stock returns. Importantly, product market competition also plays a moderating role in the relationship between financial risk reporting and stock returns.

Innovation: This research contributes to the literature by empirically demonstrating the dual role of financial risk disclosure and market competition in shaping stock performance. It underscores the importance of transparent reporting practices and competitive dynamics in enhancing investor confidence and firm valuation in emerging markets.

Keywords: financial risk reporting, stock returns, product market competition.

1. Introduction

In recent years, risk information disclosure has been among the essential factors to reduce information asymmetry about a firm's risks. This information helps investors to make a more accurate assessment of a firm's risk (Kitzmuller & Licetti, 2012). Publishing risk information can bring benefits such as improving stock liquidity, reducing capital costs, and increasing firm valuation. In addition to these advantages, it can lead to an increase in investors' perception of the risks facing the firm, and regulatory organizations can have a more transparent report of risk information (Kamarudin et al., 2020).

Financial risk reporting disclosure is considered an important issue of concern to the global business community and has attracted the ample attention of stakeholders because it is the main tool for clarifying risk information in the firm's annual report, and it is necessary to improve the risk management of a firm (Bravo, 2017; Ibrahim et al., 2019). Moreover, scandals in large firms (i.e., Enron in 2001 and WorldCom in 2002) as well as financial crises such as the "1997 Asian Financial Crisis" and the "2007-2008 Global Financial Crisis" have caused instability in financial markets and have led to increased interest in risk reporting (Khalif & Hussainey, 2016). According to Acharya and Richardson (2009), financial crises are caused by insufficient transparency in financial reporting. Therefore, risk disclosure is a vital tool to improve stock returns.

Proprietary cost assumes that market competition limits the firm's incentives to report information to maintain its competitive market position and prevents competitors from benefiting from its reported information (Ali et al., 2014). According to the specific cost hypothesis, corporate managers may be reluctant to report risk information because the disclosure of it may draw the market's attention to their risk-taking (Elshandidy et al., 2013) or encourage investors to increase their risk premium as compensation for high costs and risk exposure (Campbell et al., 2014). In this case, proprietary costs prevent firms from providing comprehensive

disclosure, and subsequently, they may avoid or reduce risk information reporting because it is detrimental to their competitive position. Nevertheless, managers may disclose proprietary information to improve their firm's reputation, demonstrate strengths in risk management (Oliveira et al., 2011), and maintain legitimacy and increase shareholder trust (Shivaani & Agarwal, 2020). Empirically, there is no single conclusion about the effect of proprietary costs on managers' decisions to report risk information (Huang et al., 2017; Shivaani & Agarwal, 2020). Therefore, according to what was mentioned, the main problem of the present research is whether competition in the product market has a significant effect on the relationship between financial risk reporting and stock returns.

Research Background

Financial Risk Reporting

One of the critical responsibilities of firm managers is the management of risks related to the organization. Through the disclosure of risk information, managers provide stakeholders with insights into the risks faced by the firm and the strategies employed to manage them. Generally, effective risk management leads to the maximization of profitability and the minimization of the likelihood of financial crises, thereby contributing to the maximization of shareholder wealth. Given the importance of accounting information for evaluation and management purposes, the disclosure of firms' risk information facilitates more accurate assessments and serves as a valuable tool for evaluating managerial performance. Conversely, information asymmetry regarding risk information may result in several challenges, such as increased transaction costs, reduced liquidity, and unprofitable investment decisions by retail investors (Khalif & Hussainey, 2016).

Risk reporting serves as an important source of information for decision-making models. When a decision-making model comprises a set of actions, conditions, and outcomes, the uncertainty of the decision's results is contingent on the probabilities of

these conditions and outcomes. Consequently, the information provided in risk reports enables the prediction of the likelihood of these conditions occurring as well as the potential outcomes. Empirical evidence suggests that risk disclosure is valuable to investors, as it can reduce the cost of capital, mitigate information asymmetry, and enhance the effectiveness of risk management practices, thereby improving stewardship (Makhlouf et al., 2020). Overall, risk reporting contributes to creating a stable environment conducive to investor confidence and capital accumulation.

Currently, the process of reviewing and revising risk reports is gradual and is conceptualized as a moderating perspective. This perspective particularly emphasizes market risk, which itself is influenced by various other factors. Risk disclosure is defined as the communication of information about the firm's strategies, characteristics, operations, and external factors that potentially impact expected outcomes. The scope of risk disclosure in annual reports should be appropriately limited, encompassing information about strategies, actions, performance, and data that explicitly focus on risks. Disclosures may include information on opportunities, prospects, risks, damages, threats, and other factors that currently affect or may affect the firm in the future. Additionally, such disclosures may inform management about these elements. This definition extends beyond merely describing opportunities, prospects, threats, and concerns by also addressing how the firm confronts them, thus providing a more comprehensive view (Ibrahim et al., 2019).

Competition in the Product Market

The concept of a competitive product market refers to a market environment where multiple firms engage in close competition in the production and sale of goods, and no single firm's products hold significant superiority over others. If this were not the case, the market would tend toward monopoly or oligopoly. Therefore, market competitiveness is typically considered the opposite of product market exclusivity.

A firm that succeeds in producing higher-quality goods or offering goods at lower prices by optimizing production methods can approach a monopolistic position (Baggs & De Bettignies, 2007).

In highly competitive markets, firms' strong disclosure practices often trigger retaliatory responses from competitors. Under such circumstances, firms tend to adopt more active disclosure policies to attract the attention of potential investors and the broader public. Thus, in competitive market environments, firms generally prefer to pursue more proactive disclosure strategies (Balakrishnan & Cohen, 2013; Markarian & Santalo, 2014).

Theoretical frameworks relating competition to disclosure suggest that the nature of competition affects disclosure and financial reporting in different ways. Firms typically face two dimensions of product market competition: first, the threat posed by potential new entrants, which can diminish firms' profitability. The decision to enter the market depends on the costs associated with entry and the expected future benefits. Second, existing firms compete with one another, threatening each other's market position. Because market entry involves costs, firms' strategic decisions are influenced by anticipated future benefits within the competitive landscape (Li, 2010).

Empirical Background

Ahmed et al. (2023) examined the dynamic relationship between product market competition, labor mobility, and cross-sectional stock returns. Employing double-sorted portfolios and cross-sectional regressions, their empirical analysis revealed that labor mobility predicts stock returns primarily in firms operating within highly competitive industries, supporting theoretical models linking competition with enhanced productivity.

Hassanein (2022) investigated the effect of market competition on corporate risk-reporting behavior among 350 firms listed on the London Stock Exchange. The study found a positive association between market competitiveness and the extent of risk disclosure, particularly noting that firms facing greater

competition tend to disclose more negative risk news. Conversely, in less competitive markets, the volume of risk disclosures significantly impacts stock returns. The research also indicated that firms strategically structure their risk reports to mitigate proprietary costs.

Kamarudin et al. (2020) explored the interplay between product market competition intensity, institutional environments, and accrual quality. Their findings suggested that increased competition correlates with lower accrual quality. However, this negative effect diminishes in countries with stronger institutional environments characterized by robust investor protections, judicial independence, enforcement of minority shareholder and property rights, and stringent auditing and reporting standards.

Lee (2019) analyzed the effects of profitability and product market competition on stock returns through zero-cost investment strategies over the 1973–2017 period. The results showed that significant positive returns from these strategies were predominantly observed in the most competitive industry segments, with moderate returns in the second most competitive groups. Notably, concentrated industries failed to generate significant returns. Among portfolios sorted by competition and gross profit, the least profitable firms in moderately competitive sectors, such as pharmaceuticals and oil, exhibited the highest returns.

Namazi and Ebrahimi Meymand (2021) developed a comprehensive framework for corporate risk disclosure, emphasizing the importance of addressing the informational needs of diverse stakeholders—including investors, financial analysts, creditors, regulators, managers, non-financial resource suppliers, and customers. Their survey-based study highlighted that transparent risk disclosure, particularly of financial risks, is essential to improve stakeholders' decision-making processes.

Khoshkholq and Talebnia (2021) assessed the impact of financial reporting quality on the level of risk disclosure among 120 firms listed on the Tehran Stock Exchange. Using proxies such as corporate governance, audit quality, and corporate social responsibility (CSR) disclosures, their results

confirmed that corporate governance and audit quality positively and significantly influence risk disclosure, whereas CSR disclosure showed no significant effect.

Ahmadi et al. (2021) proposed a novel quantitative model to calculate a firm's Risk Disclosure Index through a multi-criteria decision-making approach, offering a new metric to evaluate the extent of risk information disclosed by firms.

Kana'ani et al. (2021) studied the relationship between product market competition and information asymmetry by utilizing the Herfindahl-Hirschman Index (HHI) to measure competition. Information asymmetry was proxied by bid-ask spreads, firm size, earnings forecast errors, and growth opportunities. The findings demonstrated that higher product market competition significantly reduces information asymmetry.

Kalantarifar et al. (2019) explored the moderating role of institutional ownership in the relationship between product market competition and earnings management. Their findings revealed a significant inverse relationship between product market competition and both accrual-based and real earnings management, with institutional ownership further reinforcing the negative relationship concerning accrual earnings management.

Research Hypotheses

H₁: Competition in the product market has a significant effect on financial reporting risk.

H₂: Financial risk reporting has a significant effect on abnormal stock returns.

H₃: Competition in the product market has a significant effect on the relationship between financial risk reporting and abnormal stock returns.

Research Methodology

The current research is applied in terms of the purpose, and in terms of method, it is considered descriptive research. Among descriptive research, it is of the correlation type since it examines the relationship between independent and dependent variables. The collected data are calculated using Excel software and

analyzed with Eviews version 10 software. To check the stationary of variables, Levin's test, autocorrelation of independent variables, Lee and Chu's test, selection of the method of using mixed data, and Hausman's test were used.

Population and Statistical Sample

The statistical population of this study comprises all firms listed on the Tehran Stock Exchange. The sample includes firms that were admitted to the stock exchange prior to 2016 and remained continuously listed through the end of 2021. Moreover, selected firms must not have experienced any trading suspensions exceeding one month during this period. Firms operating in the sectors of banking and credit institutions, other monetary institutions, financial intermediation, financial investment, holding firms, insurance, and leasing have been excluded from the sample. Applying these criteria results in a final sample of 120 firms, yielding a total of 600 firm-year observations. The table below outlines the procedure used to arrive at the final sample.

Table 1- Research sample

Description	Number of firms
All firms in the stock market	522
Investment firms, banks, and insurance	124
Firms that have more than 3 months of trading break	186
Firms that have been admitted to the stock market since 2016	58
The end of their fiscal year is not March	34
Screened sample	120

Research Model and Variables

The research models have been selected as follows to test the research hypotheses. To investigate the first hypothesis, model (1) was used, which is taken from the research of Hassanein et al. (2022):

The first hypothesis model

$$\beta_2 BS_{i,t} + \beta_3 BM_{i,t} + \beta_1 HHI_{i,t} Risk_{i,t} = \alpha_0 + \beta_4 IND_{i,t} + \beta_5 DUALITY_{i,t} + \beta_6 AC_{i,t} + \beta_7 FS_{i,t} + \beta_8 EPS_{i,t} + \beta_9 CR_{i,t} + \beta_{10} DE_{i,t} + \beta_{11} DY_{i,t} + e_t \quad (1)$$

To check the second and third hypotheses, model (2) has been applied:

Second and Third Hypothesis Model

$$+ \beta_2 HHI_{i,t} Ab Return_{it} = \alpha_0 + \beta_1 Risk_{i,t} + \beta_4 BS_{i,t} + \beta_5 BM_{i,t} + \beta_6 \beta_3 (Risk_{i,t} \times HHI_{i,t}) + \beta_7 IND_{i,t} + \beta_7 DUALITY_{i,t} + \beta_8 AC_{i,t} + \beta_9 FS_{i,t} + \beta_{10} EPS_{i,t} + \beta_{11} CR_{i,t} + \beta_{12} DE_{i,t} + \beta_{13} DY_{i,t} + e_t \quad (2)$$

Research Variables

The Dependent Variables

Financial Risk Reporting: Financial risk reporting is measured by calculating the logarithm of the frequency of words related to three categories of risk—financial, operational, and strategic non-financial—appearing in firm reports such as the Board of Directors' reports, acfirming notes, and audit reports. This approach follows the methodology proposed by Makhlouf et al. (2020) to quantify risk disclosure.

Abnormal Return (Ab Return): Abnormal return represents the difference between the actual return of a target firm's stock and the overall market return. The market return can be computed using either the total market index or the price index combined with cash dividends of the Tehran Stock Exchange, as provided by Rahavard Novin software. In this study, both the price index and cash dividend yield are employed to calculate market return.

$$Ab Return_{it} = r_{it} + r_{mt} \quad (3)$$

In this equation:

$$r_{it} = \frac{(P_1 - P_0) + DPS + ((P_1 - 1000) * a) + (P_1 * a)}{P_0} \quad (4)$$

$r_{mt} = \frac{I_{mt} - I_{m0}}{I_{m0}}$	(5)
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What we have in these relationships:

Ab Return_{it}: Abnormal return of stock i in month t

r_{it}: the stock return of firm i in month t

r_{mt}: return of stock price index and stock exchange cash return in period t

P₁: stock price at the end of the period

P₀: stock price at the beginning of the period

D_{ps}: Gross cash earnings per share

a: Percentage of capital increase from receivables and cash receipts (revenues)

b: Capital increase from accumulated profit

I_{mt}: total stock market index in the first-period t

I_{m0}: total stock market index at the end of period t

Independent variables:

In the first model, the competition variable in the product market is considered as an independent variable. In the second model, the financial disclosure risk variable is considered as an independent variable.

Moderating variable

In the second model, the competition variable in the product market (HHI) is considered as a moderating variable. To measure the level of competition in the product market, the Herfindahl Hirschman Index (HHI) is used (Chen et al., 2012). This index measures the degree of concentration in a particular industry. The higher this index is, it indicates more concentration and less competition in the market (Ghaury Moghadam et al., 2013).

$HHI_{jt} = \sum_{i=1}^{N_j} \left[\frac{Sales_{ijt}}{\sum_{i=1}^{N_j} Sales_{ijt}} \right]^2$	(6)
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In this equation:

HHI_{jt}: Herfindahl-Hirschmann index for industry j at time t

Sales_{ijt}: the number of sales of the firm i in industry j at time t

N_j: number of active firms in industry j

Control Variables

The number of board members (BS): the logarithm of the total number of board members in the current year

Number of Board Meetings (BM): Logarithm of the number of board meetings at the end of the current year

Board Independence (IND): The number of non-executive members divided by the total number of board members in the current year

CEO duality (DUALITY): is a dummy variable that takes 1 if the firm's CEO was the chairman of the board of directors, and 0 otherwise.

The number of members of the audit committee (AC): the logarithm of the number of members of the audit committee at the end of the current year

Firm market value (FS): The natural logarithm of a firm's market value at the end of the current year

Earnings per share (EPS): The logarithm of the firm's earnings per share at the end of the current year

Current Ratio (CR): Current assets divided by current liabilities

Leverage ratio (DE): dividing the firm's total debt by its equity at the end of the current year

Yield ratio (DY): dividing the dividend paid per share by its share price at the end of the current year

Research Findings

Descriptive Statistics

Table (2) presents the descriptive statistics of research variables. The number of 600 observations (year-firm) for 5 years has been compiled based on the data of 120 firms admitted to the Tehran Stock Exchange for the period 2015-2019.

Table 2. Descriptive Statistics of Research Variables

Variable	Symbol	Mean	Median	Maximum	Minimum	Standard Deviation
Stock returns	Ab Return	0.305	0.33	1/06	-0.87	0.331
Risk Disclosure	Risk	0.483	0.48	0.95	0	0.253
Competition in the product market	PMC	0.024	0.01	0.13	0	0.035
Total number of board members	BS	0.672	0.70	0.78	0.60	0.053
Number of board meetings	BM	1.094	1.08	1.15	1.08	0.024
Independence of the board of directors	IND	0.595	0.60	1.00	0.20	0.194
The dual role of the CEO	DUALITY	0.29	0	1.00	0	0.454
The number of audit committee members	AC	0.568	0.60	0.70	0.48	0.080
The market value of the firm	FS	29.907	30.05	34.65	25.68	1.705
Earnings per share	EPS	2.504	2.76	4.21	0.40	0.932
current ratio	CR	1.678	1.40	5.07	0.26	0.892
leverage ratio	DE	1.087	0.97	3.01	0.09	0.661
yield ratio	DY	0.071	0.01	0.53	0	0.136

According to Table 2, among the 600 observations, the market value of the firm exhibits the highest average value at 29.90, while competition in the product market shows the lowest average at 0.02. Examination of the skewness coefficients reveals that most research variables are positively skewed, indicating a right-skewed distribution, except for stock returns, risk disclosure, the total number of board members, and earnings per share, which display more symmetrical distributions. This suggests that the distributions tend to have longer tails towards higher values.

Kurtosis, which measures the “peakedness” or height of the distribution curve at its maximum, provides additional insight. For a normal distribution, the kurtosis value is equal to 3. In this study, all variables exhibit positive kurtosis (leptokurtic), implying sharper peaks compared to the normal distribution. A positive kurtosis indicates a distribution with heavier tails and a higher likelihood of extreme values, whereas a negative kurtosis (platykurtic) would indicate a flatter peak. Therefore, the research variables

demonstrate distributions that are generally more peaked than the normal distribution.

Examining Research Variables and Models

Before testing the assumptions of the research models, it is essential to examine the stationarity of the variables. Stationarity implies that the mean, variance, and autocorrelation structure of the variables remain constant over time. If these conditions hold, the variables are said to possess the property of a constant mean. To assess this, the Levin, Lin, and Chu (LLC) unit root test is employed. The results of this test are presented in Table 3.

Table 3. The results of examining the significance of the variables

Variable	Symbol	statistics	probability value
Stock returns	Ab Return	-28.889	0.000
Risk Disclosure	Risk	-15.604	0.000
Competition in the product market	PMC	-8.253-	0.000
Total number of board members	BS	-12.858	0.000
Number of board meetings	BM	-16.562	0.000
Independence of the board of directors	IND	-20.875	0.000
The dual role of the CEO	DUALITY	-13.751	0.000
The number of audit committee members	AC	-24.303	0.000
The market value of the firm	FS	-16.075	0.000
Earnings per share	EPS	-14.454	0.000
current ratio	CR	-50.616	0.000
leverage ratio	DE	32.551	0.000
yield ratio	DY	-108.723	0.000

The results of Levin, Lin, and Chu tests show that all the variables used in this research are static at the 95% level. Considering that research variables are at the level of static variables; consequently, there is no need to perform a coaccumulation test.

Chow and Hausman tests were performed to identify the type of regression model. The results of Table 4 show that the mixed data regression model with fixed effects is suitable.

The Results of the Research Hypotheses Test

H₁: Competition in the product market has a significant effect on financial reporting risk.

One of the key assumptions in regression analysis is the independence of the error terms—that is, the differences between the observed values and those predicted by the regression model should not be correlated with each other. If this assumption is violated and the errors exhibit autocorrelation, the reliability of the regression results is compromised. To test for independence of errors, the Durbin-Watson statistic is commonly used. A Durbin-Watson value between 1.5 and 2.5 indicates no significant autocorrelation, while values outside this range suggest the presence of autocorrelation. According to the results presented in the table above, the Durbin-Watson statistic is 2.334, which falls within the

acceptable range, confirming the absence of autocorrelation among the errors.

Additionally, the coefficient of determination (R^2) for the fitted model is 0.31, indicating that 31% of the variability in the dependent variable is explained by the independent variables included in the model. Moreover, the F-statistic value of 2.982 with a significance level of less than 0.01 confirms the overall statistical significance of the regression model.

H₂: Financial risk reporting has a significant effect on abnormal stock returns.

According to the values presented in the above table, the Durbin-Watson statistic is 2.34, which falls within the acceptable range of 1.5 to 2.5. This indicates that there is no significant autocorrelation among the residuals, and the assumption of independence of errors is satisfied. Additionally, the coefficient of determination (R^2) of the fitted model is 0.49, suggesting that 49% of the variation in the dependent variable is explained by the independent variables included in the model. Furthermore, the F-statistic value of 2.243, with a significance level of 0.000, confirms the overall significance of the regression model.

Table 4. Identification of the Type of Regression Model

	model (1)	model (2)
Chow test statistic	1.518	1.708
The significance level	0.0001	0.000
Chow test result	Mixed or panel	Mixed or panel
Hausman test	12.725	41.173
The significance level	0.011	0.011
The result of the Hausman test	Fixed effects	Fixed effects
Regression type	Mixed regression with fixed effects	Mixed regression with fixed effects

Table 5. Test results of the First Model

$Risk_{i,t} = \alpha_0 + \beta_1 HHI_{i,t} + \beta_2 BS_{i,t} + \beta_3 BM_{i,t} + \beta_4 IND_{i,t} + \beta_5 DUALITY_{i,t} + \beta_6 AC_{i,t} + \beta_7 FS_{i,t} + \beta_8 EPS_{i,t} + \beta_9 CR_{i,t} + \beta_{10} DE_{i,t} + \beta_{11} DY + e_t$					
Variable	symbol	Coefficient	Coefficient	t statistic	Significance level
Competition in the product market	HHI	0.334	0.334	4.909	0.0011
Total number of board members	BS	0.173	0.173	3.937	0.0002
Number of board meetings	BM	0.131	0.131	2.470	0.0000
Independence of the board of directors	IND	0.065	0.065	1.017	0.3097
The dual role of the CEO	DUALITY	0.020	0.020	0.777	0.4378
The number of audit committee members	AC	0.089	0.089	0.604	0.5464
The market value of the firm	FS	0.005	0.005	0.448	0.6540
Earnings per share	EPS	0.071	0.071	3.533	0.0005
current ratio	CR	-0.018	-0.018	-0.885	0.3764
leverage ratio	DE	0.017	0.017	-0.684	0.4943
Yield ration	DY	0.008	0.008	0.061	0.9515
Constant	C	0.322	0.322	8.980	0.0000
	Adjusted coefficient of determination	F-statistic	F probability	Durbin-Watson Test	
	0.314	0.204	2.982	0.000	2.334

Table 6. Test Results of the Second Model

$Ab\ Return_{it} = \alpha_0 + \beta_1 Risk_{it} + \beta_2 HHI_{it} + \beta_3 (Risk_{it} \times HHI_{it}) + \beta_4 BS_{it} + \beta_5 BM_{it} + \beta_6 IND_{it} + \beta_7 DUALITY_{it} + \beta_8 AC_{it} + \beta_9 FS_{it} + \beta_{10} EPS_{it} + \beta_{11} CR_{it} + \beta_{12} DE_{it} + \beta_{13} DY_{it} + e_t$					
Variable	symbol	Coefficients	standard deviation	t statistic	Significance level
The disclosed risk of financial reporting	RISK	0.218	0.063	3.488	0.0000
Competition in the product market	HHI	0.250	0.042	5.962	0.0000
Product market competition \times exposed risk	RISK*HHI	0.409	0.081	5.049	0.0000
Total number of board members	BS	0.225	0.082	2.730	0.0024
Number of board meetings	BM	0.819	0.585	1.400	0.1622
Independence of the board of directors	IND	0.169	0.074	2.276	0.0233
The dual role of the CEO	DUALITY	-0.037	0.030	1.249	0.2123
The number of audit committee members	AC	0.154	0.172	0.897	0.3699
The market value of the firm	FS	-0.006	0.013	-0.530	0.5966
Earnings per share	EPS	-0/010	0.023	0.424	0.6720
current ratio	CR	0.008	0.023	-0.328	0.7436
leverage ratio	DE	0.036	0.029	1.273	0.2035
yield ratio	DY	0.399	0.148	2.691	0.0074
Constant	C	0.248	0.065	3.784	0.0001
The coefficient of determination	Adjusted coefficient of determination	F-statistic	F probability		Durbin-Watson Test
0.488	0.315	2.243	0.000		2.334

H₃: Competition in the product market has a significant effect on the relationship between financial risk reporting and stock returns.

According to the results presented in Table 6 and based on the calculated significance level, the interaction term (**product market competition \times financial risk reporting**) is statistically significant at the 5% level ($p < 0.05$). This indicates that, at a 95% confidence level, product market competition has a significant moderating effect on the relationship between financial risk reporting and stock returns. The estimated coefficient and corresponding t -statistic for this interaction term further confirm the strength and direction of this effect, supporting the hypothesis that higher levels of competition amplify the impact of risk disclosures on stock performance.

Conclusions and Suggestions

Firm managers may disclose proprietary information to enhance their firm's reputation. Additionally, firms with competitive advantages tend to provide more extensive disclosures to highlight their strengths in risk management, thereby maintaining legitimacy and increasing shareholder trust (Oliveira et al., 2011; Shivaani & Agarwal, 2020). Abraham and Shrivs (2014) further contend that managers should strategically shape their reporting to minimize proprietary costs, often opting to disclose sensitive information privately in meetings with investors. Market competition motivates firms to voluntarily increase disclosure. Supporting this, Birt et al. (2006) found that firms willingly share information with competitors when they perceive minimal harm to their

competitive position. This evidence aligns with the findings of Hassanein (2022).

It can therefore be concluded that investors' responses to risk disclosures are influenced by a firm's disclosure practices. Some firms limit risk reporting to balance the benefits of transparency against the costs of revealing potentially damaging information (Abraham & Shrivies, 2014). Investors often interpret such cautious disclosure as indicative of weak risk management. A lack of transparency diminishes the perceived credibility of risk reporting, which can lead to lower stock returns. Conversely, increased risk disclosure enhances credibility, thereby positively affecting stock returns. These results are consistent with the studies by Hassanein (2022) and Ahmed et al. (2023).

The results of this hypothesis can be explained by prior literature, which demonstrates that product market competition encourages firms to voluntarily disclose more information. Research indicates that firms facing high competition are more willing to release information that facilitates accurate firm evaluations. Supporting this, Birt et al. (2006) found that firms are willing to share information with their competitors when they perceive such disclosure as less detrimental to their competitive position (Hassanein, 2022). In contemporary capital markets, investors place considerable emphasis on reliable financial information. High-quality financial reporting enables investors to better estimate risks and make improved investment decisions. Consequently, enhancing a firm's risk disclosure by increasing the perceived credibility of risk reports positively affects its stock returns. Based on this reasoning, it can be concluded that product market competition significantly influences the relationship between financial risk reporting and stock returns. This finding is consistent with the studies of Hassanein (2022).

Based on the first research hypothesis, it is suggested that product market competition positively and significantly affects the level of reported risk information. Therefore, investors are advised to focus on firms operating in highly competitive markets, as

these firms tend to provide more comprehensive risk disclosures, enabling more informed investment decisions. Additionally, investors should consider the degree of product market competition when selecting stocks. Banks and lenders should also take this factor into account when granting credit, and financial analysts should incorporate product market competition into their evaluations based on financial statements. For a more accurate assessment of risk reporting, the role of product market competition should be recognized as an influential factor.

According to the second research hypothesis, financial risk reporting has a positive and significant impact on stock returns. Accordingly, it is recommended that the stock exchange organization enhance investors and other external stakeholders' ability to utilize disclosed financial information—especially risk-related data—through expanded training programs. Furthermore, the stock exchange and other regulatory bodies could classify firms based on their level of risk disclosure. Firm managers are also encouraged to review the types of information disclosed in financial reports related to major firm risks and to disclose as much relevant financial and non-financial information as possible, thereby improving the firm's overall efficiency.

Based on the results of the third research hypothesis, it can be concluded that product market competition has a positive and significant moderating effect on the relationship between financial risk reporting and stock returns. Accordingly, it is recommended that the stock exchange classify firms according to their level of competitiveness in the product market. Such classification would assist investors in assessing the competitiveness of firms, thereby enabling more informed and favorable investment decisions.

Generally, users of financial statements—including investors—are advised to examine the historical competitiveness of a firm's product market before making investment decisions. Preference should be given to firms exhibiting higher competitive intensity relative to the market. Moreover, investors

should also consider the firm's financial risk reporting and the factors influencing it when making investment choices across all firms.

Based on the findings of the present study, the following avenues for future research are proposed: conducting a comparative analysis of the effect of financial risk reporting on stock returns, with a focus on the role of product market competition in the Tehran Stock Exchange before and during the COVID-19 pandemic. Given that investors have asymmetric information about firms and that increased risk reporting may contribute to reducing information asymmetry, it is further suggested to investigate how financial risk reporting influences stock returns through the lens of information asymmetry.

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