The Effect of Business Risk Management on Financing Cost by Considering the Managers' Ability

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Abstract

Objectives: The benefits of risk management can be defined as increasing efficiency and effectiveness, facilitating and streamlining, reducing costs, speeding up operations, improving communication, ensuring system control, identifying project-related threats, and helping achieve goals on time. Therefore, recognizing the need for comprehensive risk management in all firms, this research is dedicated to addressing issues in financing firms within the competitive market. This study aims to investigate the impact of business risk management on financing costs while considering managers' abilities.

Design/methodology/approach: The statistical population of the research consists of firms listed on the Tehran Stock Exchange from 2013 to 2022. Through the systematic elimination screening method, 132 firms were selected as the final sample for the research.

Findings: The findings revealed that risk management has an inverse effect on financing costs and moderates the relationship with managers' abilities.

Innovation: This research contributes new evidence to the existing literature on the topic. The results of this study can assist financial information users in making informed decisions.

Keywords: Financing costs, Business risk management, Ability of managers.

1. Introduction

Firms and economic institutions require appropriate and timely financing for investment, debt repayment, and increased working capital. Financial managers always strive to enhance the company's value by developing new financing methods. To determine the suitable financial resources, company managers should assess the costs of various financing sources and their impact on the efficiency and operational risk of companies. Companies often utilize multiple resources to implement their plans and address issues (Feng and Wu, 2023). Financing through debt is generally favored due to tax savings and lower rates compared to shareholders' expected returns. However, the crucial factor for creditors is the ability to repay. Other benefits of debt include management commitment to effectiveness, engaging creditors for monitoring, and assessing the company's ability to repay debts. Conversely, the cost of debt can indicate financial weakness and pressure, reflecting conflicts between managers, investors, and creditors (Aksoy and Yilmaz, 2023).

Companies require additional financing when prioritizing between investing domestic cash and domestic versus foreign financing costs. One of the primary reasons for companies facing financial crises and bankruptcy is their failure to meet debt obligations on time (Salehi et al., 2017). A financial crisis occurs when a company cannot secure adequate financial resources to sustain operations (Venkateswarlu et al., 2022; Salehi et al., 2016). Given the economic challenges, internal and external threats, and risks companies encounter, as well as the issues related to the cost of external financing, it is essential to address how companies can navigate these challenges (Kardan et al., 2016). Bringing commercial credit levels close to optimal amidst macroeconomic shocks and internal risks is crucial (El-Chaarani and Abraham, 2022).

Effective risk management by capable managers can help companies adjust operational and economic costs, make informed decisions, and identify control factors to enhance security and achieve organizational goals (El-Khatib et al., 2022). Risk management contributes to increasing efficiency, streamlining operations, reducing costs, improving communication, ensuring system control, identifying project-related threats, and meeting goals promptly (Liu and Huang, 2022). By managing risks adeptly, companies can create conditions for financing at lower costs and attract commercial credit (Foli et al., 2022). This raises the question: does risk management impact financing costs? The research structure will delve into the theoretical foundations, hypotheses, and empirical foundations, followed by methodology, operational definitions of research variables, and ultimately, the research findings and conclusions.

Managers play a pivotal role as decision-makers in overcoming financial crises and addressing financing costs (Yung and Chen, 2018; Salehi et al., 2019). Failure to manage effectively is a common reason for business failures and financial crises. Proper management entails reacting to situations and crises promptly. Publicly available information can shed light on the personal characteristics of managers. To secure appropriate financial resources, company management must evaluate the costs of providing financial resources and their impact on risk and return (Salehi et al., 2020). Lack of experience, management skills, influence, and timely initiative can jeopardize a company's survival. Incompetent management may result in failure to adapt to market changes, over- or under-development, insufficient sales, improper pricing, high overhead costs, over-investment, etc. (Anggraini and Sholihin, 2023; Faysal et al., 2020).

A competent manager can indirectly leverage high experience, updated knowledge, expertise, and industry-specific skills to navigate the bridge between management, risk, and financing costs. This raises the question: do managers' characteristics influence the relationship between financial crises and financing costs? Prev

ious research has explored various financing methods and their influencing factors. For instance, Tran (2022) found that foreign ownership negatively impacts debt costs, especially in non-governmental companies with financial constraints. AlKhouri and

Suwaidan (2023) discovered no effect of overall social responsibility disclosure on financing costs. Kong (2023) studied the impact of China's family businesses' ESG performance on debt financing costs, revealing that strong ESG performance can reduce debt financing costs. However, the impact of risk management on financing costs remains unexplored. Addressing this research gap, the present study aims to investigate this relationship. The research structure will cover the theoretical foundations, hypotheses, empirical foundations, methodology, operational definitions of research variables, and finally, the research findings and conclusions.

2. Theoretical, Experimental Issues and Hypothesis Development

Firms require appropriate and timely financing for investment, debt repayment, and working capital increases. Financial managers constantly strive to enhance company value by developing new financing methods. To determine suitable financial resources, company managers should assess the costs of various financing sources and their impact on company efficiency and operational risk. Companies typically utilize multiple resources to execute their plans and address issues (Guney et al., 2011). Huang et al. (2018) investigated factors related to company financing in French companies during the global financial crisis. They discovered that small firms, during global crisis conditions, rely more on internal financing sources and may sell tangible or non-essential assets to focus on core competencies and reduce intangible assets. While there may not be a perfect financial program to maximize company value, understanding how financial markets operate can provide some guidance. Guney et al. (2011) explored the relationship between competitive flexibility and financing methods in China and found a significant correlation. Their results also indicated that financing decisions are influenced by industry type, company size, and growth stage. Company managers should carefully evaluate the costs and effects of various financing sources on efficiency and operational risk

(Yazdan Far and Ohman, 2015). Tran (2022) demonstrated that foreign ownership negatively impacts debt costs, especially in non-governmental companies and those facing financial constraints. AlKhouri and Suwaidan (2023) found that overall social responsibility disclosure does not affect financing costs. However, companies that lack transparency and engage in socially responsible activities related to the environment and human resources are viewed as high-risk by market participants, leading to higher financing costs. Profit-seeking companies involved in social responsibility activities also face increased risk. Francis et al. (2017) studied the link between auditor changes and bank financing costs. Their findings suggest that voluntary auditor changes heighten information risk, which is reflected in private credit markets. The presence of various securities, along with specific criteria and factors, determines the acquisition of necessary resources. These factors dictate the type of resources suitable for a company based on its condition, economic factors, industry status, size, ownership, and other relevant factors. Managers must strike a balance between debt and equity to create an optimal resource mix. It is essential to consider the advantages and disadvantages of different financial resources, as each has its own set of pros and cons (Vanacker et al., 2010). Organizations in the business environment constantly face risks, which can impede performance and hinder sustainable growth (Salehi et al., 2020). By effectively managing risks, companies can enhance sustainable performance (Huston et al., 2011). Malik et al. (2020) affirmed that organizational risk management significantly and positively impacts company performance. They recommended that board oversight be robust and that risk management be integrated with board functions. A sound board structure can effectively demonstrate risk management practices. Risk management involves identifying and evaluating risks, followed by developing strategies to mitigate them. Financial risk management focuses on risks associated with financial and business instruments, while intangible risk management deals

with human capital risks like knowledge, relationship, and operational process risks (Salehi and Ghasempour, 2021). Large companies typically have dedicated risk management teams, while smaller entities manage risks informally (Gordon et al., 2009). Sunday et al. (2020) highlighted a significant relationship between liquidity risk management and financial performance, recommending that companies integrate liquidity risk management into their financial strategies. Given the significance of consumer goods and their impact on consumers, companies should establish risk committees to swiftly manage risks and fluctuations. Identifying and managing risks is crucial for economic stability. Cao et al. (2021) explored the link between risk management, corporate social responsibility, managerial trust, and real activity income management. They found that companies with effective risk management are more inclined to engage in socially responsible practices. Managerial trust influences corporate policies and can mitigate overall risk effects on social responsibility. Confident CEOs with higher stakes tend to increase CSR activities to bolster corporate reputation by reducing earnings management. Optimal risk management involves prioritizing risks based on potential losses and probability of occurrence, addressing high-loss, high-probability risks first. However, balancing high-probability, low-loss risks with low-probability, high-loss risks can be challenging (Wong, 2014). Aprilia et al. (2022) reported that risk management positively impacts company value, while leverage has a negative effect. Risk management does not moderate the relationship between managerial ownership, leverage, and company value. Effective risk management can prevent future risks by anticipating and controlling potential events. Risk management, as defined by the Association of Chartered Accountants of Iran, involves responding to and investigating project crises and threats, identifying and analyzing potential obstacles before they occur, and developing pre-designed solutions to address them effectively (Middle and Rosok, 2021). Masanja (2022) found that audit committee characteristics, supervisory processes related to risk management, and management support contribute significantly to the effectiveness of risk management. Risk assessment can be complex, requiring detailed analysis of project schedules, financial data, security protocols, sales forecasts, and other relevant information. Risk assessment is crucial for project planning, cost control, and reliability. Identifying potential risks, reducing risks, making informed decisions about crises, and planning for projects are central to effective risk management (Crawford and Nilsson, 2021). Risk assessment and management are essential tools for addressing project obstacles and threats, ultimately reducing costs associated with overcoming crises. Companies facing financial constraints or critical situations are viewed as high-risk by financiers, leading to higher financing costs. Effective risk management can help secure more favorable financing terms. Therefore, the first hypothesis of this research is as follows:

H1: Business risk management is effective in reducing financing costs.

In today's world, management plays a crucial role in increasing the efficiency and productivity of companies. Among the four key success factors in organizations, including workforce, capital, raw materials, and management, the role of management has become more important than ever before (Varma et al., 2020). Management is considered the most important strategy for developing and updating human and organizational resources, thereby increasing productivity. For organizations to be successful and avoid bankruptcy, they must stay ahead of their competitors rather than fall behind. Therefore, management efficiency is a significant concern in economic units. Managers and business unit officials strive to promote economic progress and development within the business unit by investing in various fields and preventing stagnation and backwardness (Baik et al., 2020).

Franco et al. (2018) stated that this paper examines the impact of borrowers' managerial ability on lenders' bank loan pricing and the channels through which managerial ability affects bank loan pricing. Using a

large sample of US bank loans, we provide evidence that higher managerial ability is associated with lower bank loan prices. This effect is more pronounced in firms with high information risk, suggesting that an important channel for managerial ability to influence bank loan pricing is through improved financial disclosure to mitigate information asymmetry.

According to the theory mentioned above, the personal characteristics of managers play a crucial role in their strategic decisions, and significant choices in the company stem from the intrinsic characteristics of decision-makers, including the CEO. One of the main topics of stakeholder theory relates to managers' perspectives on management and how to operate a company. In this theory, the role of management leadership is considered crucial as it involves making strategic decisions. Since the CEO's decisions shape the leadership activities of managers, it is reasonable to expect the CEO to have a major influence on company matters (Putra, 2023).

Choo et al. (2021) mentioned that their research examines the connection between managerial ability and firms' external financing. Their findings indicate that firms with more capable managers tend to reduce information risk by decreasing their loan financing and increasing equity financing. Zahid et al. (2023) stated that the authors' findings align with management signaling and reputation enhancement theories, showing that managerial skill is linked to higher debt financing. Managers with strong management skills are more likely to secure debt financing, as they can anticipate their companies' economic future and effectively communicate private information, reducing information asymmetry and enhancing their reputation. From this perspective, how a company responds to risk and risk management serves as a test of management's ability to impact investment performance. Effective risk management within a business unit can create a competitive advantage. By establishing a competitive advantage, risk management techniques can be expected to play a crucial role in boosting productivity and ultimately reducing the company's financing costs,

despite capable management. Therefore, the second hypothesis of the research is presented as follows:

H2: Managers' ability to effectively affects the relationship between business risk management and financing costs.

3. Research Methodology

The research presented is of the applied type. In terms of methodology, the statistical population includes all listed companies on the Tehran Stock Exchange from 2013 to 2022. Through systematic elimination, companies that met specific conditions were selected as the final sample. For comparability, the financial year chosen by the company is the end of March, and they must have maintained the same financial year for a period of 10 years. Additionally, the companies should not be banks, insurance, or investment companies. By applying these conditions, 132 companies were included in the final screening from the statistical population.

The information of the sample firms was analyzed using the combined panel data method and the Eviews 12 software. The powerful standard error tool was utilized for the final testing of the hypotheses. The combined data, incorporating time and place in different periods, provided comprehensive and reliable information to the researcher. Regression analysis, using the powerful standard error tool, was deemed the best option for investigating the relationships in the current research.

Table 1. The screening of the statistical population

The statistical population in 2022		577
Deductible: inactive companies	-193	
Deductible: Companies that have stock trading suspension	-37	
Deductible: Companies that have changed the financial period	-67	
Deductible: Companies that entered the stock market during the research period	-99	
Deductible: investment companies, banks, and holdings	-49	
The final sample of the research		132

3.1. Operational Definitions of Research Variables

3.1.1. Dependent Variable: Financing Cost (CD)

The cost of financing is a crucial factor in managerial and financial decision-making. Managers need to be aware of the costs associated with the financial sources they utilize. In this study, based on research by Yazdan Far and Ohman (2015), debt financing is examined and measured using the following ratio:

Financing cost = (financing cost / total debts)

3.1.2. Independent Variable: Risk Management (ERM)

Gordon et al.'s (2009) model has been used to measure risk management. These factors have been identified based on their ability to achieve the set goals of the companies and are as follows:

$ERMI_{i,t} = \beta_0 + \beta_1 EU_{it} + \beta_2 CI_{it} + \beta_3 FS_{it} + \beta_4 FC_{it} + \beta_5 MBD_{it} + \varepsilon_{it}$

In the above model, these are ERMI (risk management indicators), EU (environmental uncertainty), CI (industry competition), FS (firm size), FC (firm complexity), and MBD (board supervision). In the above model, ε is the error component of the model, which indicates the deviation from the best model proposed by Gordon et al. (2009), in such a way that the lower the error component of the model is, it indicates the high-risk management of the company and vice versa. For this purpose, the absolute value of the model error has been taken and multiplied by a negative number, and it is defined as risk management

3.1.2.1. Risk Management Indicators (ERMI)

The Committee of Sponsoring Organizations of the Treadway Commission (COSO), used the following four indicators to manage organizational risk and internal control to improve organizational performance and better governance and reduce the amount of fraud in organizations.

$$ERM_I = \sum_{k=1}^{2} Strategy + \sum_{k=1}^{2} Operation + \sum_{k=1}^{2} reporting + \sum_{k=1}^{2} Compliance$$

3.1.2.1.1. Strategy

Refers to the methods adopted by companies to stay in competitive market conditions. In this case, the company tries to maintain its competitive status compared to other companies active in this field. To measure the competition strategy, the following two relationships can be used, which are calculated as follows:

$$Strategy_1 = \frac{Sales_{it} - \mu Sales}{\sigma Sales}$$

In the above model, Sales (company sales), μSales (average industry sales), and σSales (standardized sales of companies in the industry) are:

$$Strategy_2 = \frac{\Delta\beta - \mu\Delta\beta}{\sigma\Delta\beta}$$

In the above model, Δβ (the beta of the company in year t minus the beta of the company in year t-1), μΔβ (the average beta of the industry), and σΔβ (the standard deviation of Δβ of all companies in the industry).

3.1.2.1.2. Productivity (Operation)

Productivity is measured as the relationship between the company's inputs and outputs in the company's operation process. Any amount of the company's output at a certain level is more than the inputs, showing the company's better performance. To measure productivity, the following two relationships can be used:

$$Operation_1 = \frac{Sales}{Total\ Assets}$$

$$Operation_2 = \frac{Sales}{Number\ of\ Employees}$$

In the above model, Sales is the Number of Employees.

3.1.2.1.3. Reporting Risk Management

Following Gordon et al. (2009), reporting refers to the level of trust in the company's reporting because correct reporting guarantees the survival and success of the organization. To measure this factor, the modified Jones model measures the total value of discretionary and non-discretionary accruals. The reason for using both factors of accrual items (optional and non-optional) is that both items can be negative, so their relative strength is more reliable.

Reporting1= (non-optional accrual of absolute value items)/ (non-optional absolute value + optional accrual of absolute value items)

In this model, the total accrual items are calculated first, which is the result (net profit minus operating cash), and after calculating the total accrual items, parameters α_1, α_2, and α_3 continue through the following model to determine the total non-discretionary accrual items:

$$TA_{i,t}\ /A_{i,t-1} = \alpha_1(1/A_{i,t-1})+\alpha_2(\Delta REV_{i,t} - \Delta REC_{i,t})\ /A_{i,t-1} +\alpha_3(PPE_{i,t}/A_{i,t-1})+\varepsilon_{i,t}$$

Where TA (total accrual items), $\Delta REV_{i,t}$ (change in sales revenue of the current period compared to the previous period), $\Delta REC_{i,t}$ (change in accounts receivable of the period compared to the previous period), $PPE_{i,t}$ (gross property, car tools, and equipment), $A_{i,t-1}$ (the book value of the assets of the previous period) and $\varepsilon_{i,t}$ (the uncertain effects of the company's random factors). After calculating $\alpha 1$, $\alpha 2$, and $\alpha 3$ parameters through the least squares method, according to the following formula, non-discretionary accruals (NDA) are determined as follows:

$$NDA_{i,t} = \alpha_1(1/A_{i,t-1})+\alpha_2(\Delta REV_{i,t} - \Delta REC_{i,t})\ /A_{i,t-1} +\alpha_3(PPE_{i,t}/A_{i,t-1})+\varepsilon_{i,t}$$

And finally, discretionary accruals (DA) after determining the NDA are calculated as follows:

$DA_{i,t} = (DA_{i,t}\ /A_{i,t-1})$ - $NDA_{i,t}$
Reporting2= (Material Weakness) + (Auditor Opinion) + (Restatement)

In the above model, Material Weakness (equal to the number of clauses announced in the independent auditor's report), Auditor Opinion (if the auditor's report is acceptable, the number will be 1; otherwise, it will be zero), Restatement (representation of financial statements (in case of renewal) (Provide one; otherwise, it will be zero).

3.1.2.1.4. Compliance

Increasing compliance with laws and regulations will reduce risk and increase company value. Adhering to the audit standards will require the acceptance of audit costs. According to the research (Gordon et al. 2009), the following two relationships can be used to measure the compliance variable (audit costs are extracted from the profit and loss statements of companies):
Compliance1= (cost audits)/(companies total assets)
Compliance2= (net (loss) profit)/(companies total assets)

3.1.2.2. Environmental Uncertainty Factor (EU)

Environmental uncertainty can be seen as an increase in future unpredictable events. This environmental uncertainty can cause many problems for organizations. Financial reporting and performance measurement are more complicated in companies with variable and highly volatile business operations. Risk management, as a subset of the management control system, aims to identify and manage uncertain future company events. Therefore, environmental uncertainty can influence risk management (Gordon et al., 2009).
Three parameters are used to measure this factor:
a)   Sales change factor ((Sit)CN), b) capital cost change factor, c) change factor of net profit before tax ((Iit)CV), and Iit is net profit before tax of the

company in year t. Using the above three parameters, environmental uncertainty is obtained as follows:

a) $EU = Log\left(\sum_{k=1}^{3} CV(X_k)\right)$

b) $CV(X_k) = \dfrac{\sqrt{\frac{\sum_{t=1}^{11}(Z_{k,t} - \bar{Z}_k)}{n}}}{|\bar{Z}_k|}$

In the above relationship, CV(Xk) is the coefficient of uncertainty changes, t (years of research), Xkt (uncertainty k in year t), and Zk (average changes of uncertainty k during n years).

3, 2, and 1 = K for uncertainty 1) Coefficient of changes in sales 2) Coefficient of changes in capital cost 3) Coefficient of changes in net profit before tax.

The weighted average method of the cost of capital is used to calculate the cost of capital.

$$K_S = \dfrac{D_0(1+g)}{P_0} + g$$

Where D0 (equals cash profit per share in the current period), P0 (share price at the beginning of the year), and g (dividend growth rate).

3.1.2.3. Industry Competition (CI)

Industry competition measures industry concentration, where low concentration means high competition. Due to the intense competition between competing companies, each company tries to adopt the appropriate strategy to surpass other competitors, so there will always be a risk of not being sustainable for companies (Gordon et al., 2009).

$$CI = 1 - \sum_{i=1}^{n} \left(\frac{S_{it}}{TotalS_{st}}\right)^2$$

In the above model are CI (market share), Sit (sales of each company in year t), and Sst (industry sales in year t).

3.1.2.4. Firm Size (FS)

The relationship between firm size and organizational structure has been considered in the organizational theory literature. The natural logarithm of total assets has been used to measure this factor.

3.1.2.5. Firm Complexity (FC)

Firm complexity reduces information integration and more problems in the internal control system, so strong organizational risk management is needed to reduce complexity (Gordon et al., 2009). Cost complexity is one of the components of company complexity; cost complexity is defined as the extent to which revenues cover costs. In organizations with less cost complexity, costs move proportionately to revenues, so profits are easily determined according to anticipated revenue changes. If costs do not change in line with revenue, then understanding what drives revenue forecasting cannot help forecast profit. As a result, cost complexity will likely affect predicting performance, all else being equal. Therefore, cost complexity is measured through the relationship between revenues and earnings before interest and taxes.

FC = -1 CORREL (revenues & earnings)

3.1.2.5. Board Oversight (MBD)

The board oversight variable is calculated and measured by dividing the number of board members by the logarithm of sales.

3.1.3. Research Moderator Variable: Management Ability (MA)

Demirjan et al.'s (2012) model is used to measure managers' abilities. After performing the regression test, management efficiency is determined through the residual value (ε_t) in each year-company as follows: calculated through the residual of the regression model, a positive residual means high efficiency, and a negative residual means less efficient management.

Demirjan et al. (2012) calculated the results of managers' ability using a series of data envelopment analyses, and this data analysis is based on a series of optimizations using linear programming, also referred to as a non-parametric method. Demirjan et al.'s 2012 model will be used in this research to measure management ability. Coverage analysis is used through equation 1 to measure the company's efficiency.

$$max_v\theta = \frac{Sales}{v_1 CoGS + v_2 SG\&Av_3 NetPPE + v_4 OpsLease + v_5 R\&D + v_6 Intan}$$

Table 2. Definition of the variables used in the above equation

Model input	Variable	Sign	Operational definition
Output variable	Sales	Sales	The amount of company sales
Input variables	Cost	CoGS	The total cost of goods sold
	Net fixed assets	NetPPE	Net property, machinery, and equipment
	Operating lease cost	OpsLease	The financial statements do not identify research and development costs and information related to rents, so the effects of these two variables are removed from the models.
	Research and development costs	R & D	
	Intangible assets	Intan	Net intangible assets

The calculated value for the company's efficiency will be in the range of zero to one. Companies whose efficiency score is less than one are below the efficiency frontier and must reach the efficiency frontier by reducing costs or increasing revenues. The purpose of calculating the company's efficiency is to measure the management's ability, and since the inherent characteristics of the company are also involved in the calculations related to the efficiency, it is not possible to measure the management's ability correctly because affected by these characteristics, it is calculated more or less than the real value.

Demarjian et al. (2012), to control the effect of the inherent characteristics of the company in the model they presented, have divided the company's efficiency into two separate parts, i.e., efficiency based on the inherent characteristics of the company and management efficiency. They have controlled five firm characteristics (firm size, market share, cash flow, acceptance life on the stock exchange, and foreign sales (exports). The five variables, intrinsic firm characteristics, can affect management and help to make better decisions or act in the opposite direction, limiting management's ability.

These five features are controlled in the model presented by Demarjian et al. (2012):

$$Firm\ Efficiency_{j,t}$$
$$= \alpha_0 + \alpha_1 Size_{j,t} + \alpha_2 Marketshare_{j,t}$$
$$+ \alpha_3 FreeCashFlowIndicator_{j,t} + \alpha_4 Age_{j,t}$$
$$+ \alpha_5 ForeignCurrencyIndicator_{j,t} + \varepsilon_{j,t}$$

Where

$Size_{j,t}$ = is the size of company j in year t and is equal to the natural logarithm of the company's total assets.

$MSH_{j,t}$ = the market share of company j in year t and is equal to the ratio of the company's sales to the total industry sales.

$FCFI_{j,t}$ = shows the increase (decrease) in the operating cash flow of company j in year t, which is equal to one if the operating cash flow is positive and zero if it is negative.

$Age_{j,t}$ = is company j's life in year t and is equal to the natural logarithm of the number of these years.

$FCI_{j,t}$ = The export of company j in year t; for companies that have exported, it is considered equal to 1 and, otherwise, zero.

$\varepsilon_{j,t}$ = the remainder of this pattern indicates the level of management ability.

3.1.4. Research Control Variables

According to various studies in the field of financing, such as Aksoy and Yilmaz (2023), the following variables have been applied to control unwanted factors in the research model.

Return on assets (ROA): Net profit divided by total assets

Stock return rate (RET): equivalent to the closing price of a share minus the first-period price and any cash dividends divided by the first-period price.

Company size (SIZE): natural logarithm of total assets

Growth: Sales revenue minus the sales of the previous period divided by the sales of the previous period

Cash: the ratio of operating cash to total assets

Financial Leverage (LEV): The ratio of the total liabilities of the company to the total assets of the company at the end of each financial period.

3.2. Regression Model of Research

$$CD_{it} = \beta_0 + \beta_1 ERM_{it} + \beta_2 MA_{it} + \beta_3 ERM_{it} \times MA_{it} + \beta_4 MB_{it} + \beta_5 ROA_{it} + \beta_6 SIZE_{it} + \beta_7 CASH_{it} + \beta_8 Growth_{it} + \beta_9 LEV_{it} + \varepsilon_{it}$$

4. Research Findings
4.1. Descriptive Statistics of Research Variables

Table 3 shows the descriptive statistics of the research variables. Descriptive statistics show the amount of data dispersion, and mean, and standard deviation are two important factors in descriptive statistics. The above table shows that the average financial leverage is (0.55), which shows that most of the data is around this point. The highest standard deviation is related to company growth (3.58), and the lowest is related to financing costs (0.042). The highest and lowest also show the highest and lowest in each variable among the research sample.

According to the results obtained in Table 3, the significance level of the variables in the significance test is less than 5%, indicating the variables' significance.

Table 3. Descriptive statistics of research variables

Variable	Mean	Max.	Min.	Standard deviation	Skewness	Kurtosis
CD	0.056	0.150	0.000	0.042	0.620	2.610
ERM	-0.610	-0.010	-1.800	0.450	-0.720	2.720
MA	0.007	0.370	-0.330	0.120	-0.069	3.240
Cash	0.046	0.280	0.002	0.048	2.053	7.850
Growth	0.347	1.653	-0.360	0.420	0.863	3.850
LEV	0.559	0.975	0.104	0.203	-0.146	2.400
ROA	0.143	0.594	-0.289	0.155	0.566	3.450
SIZE	14.720	19.770	11.300	1.534	0.798	3.880
MB	4.220	14.290	1.010	3.580	1.600	4.700

Table 4. Stationary test (Levin, Lin, and Chu) of research variables

Variable	Test statistic	Significance level	Result
CD	-25.374	0.000	Stationary
MA	-21.758	0.000	Stationary
ERM	-25.146	0.000	Stationary
Cash	-4.354	0.000	Stationary
Growth	-9.408	0.000	Stationary
LEV	-2.514	0.006	Stationary
ROA	-14.298	0.000	Stationary
SIZE	-5.175	0.000	Stationary
MB	-17.455	0.000	Stationary

Table 5. Classical regression hypothesis tests

Variable	Test statistic	Sig
Cost of financing	4.077	0.000
Management ability	266.800	0.000
Risk management	190.320	0.000
Cash holding	61.550	0.000

According to the results obtained in Table 4, the F-Limer test with a significance level below 5% (0.000) has confirmed the panel data pattern, which is further observed by observing the Hausman test coefficient with a significance level below 5% (0.000) confirming the model with fixed effects of width from the origin. The test of heterogeneity of variance and serial autocorrelation with a significance level below 5% shows that there was heterogeneity of variance and serial autocorrelation in the model, which has been removed in the final estimation by using the standard error tool facilities in EViews Software, and the need It was not due to other actions.

4.2. The Result of the Research Hypothesis Test

The results of Table6 show that risk management has an inverse and significant relationship with the speed of adjusting companies' commercial credit, with a negative coefficient (-3.42) and a significance level below 5% (0.001). Therefore, the first research hypothesis is not rejected at the 5% error level. In addition, the interaction of risk management and the ability of managers with a negative coefficient (-0.18) and a significance level below 5% (0.001) has an inverse effect on the cost of financing. Therefore, the second research hypothesis is accepted at the 5% error level. Also, the control variables of liquidity and financial leverage affect the dependent variable at the error levels of 5 and 10%. The coefficient of determination equals 0.37, which shows that the independent and control variables inside the model cover 37% of the changes in the dependent variable. Watson's camera is equal to 1.57, and since our number is between 1.50 and 2.50, it shows no strong autocorrelation between the sentences of the disturbance model. The collinearity statistic is less than 5, showing no strong correlation between the research variables. The test statistic (F) with a significance level below 5% shows that the research model fits well.

Table 6. The results of the research hypothesis test

Variables	Coefficients	Standard error	T statistic	Sig	VIF
ERM	-3.420	1.050	-3.260	0.001	1.00
MA	0.013-	0.004	-2.640	0.008	1.11
ERM × MA	-0.180	0.058	-3.230	0.001	1.00
MB	0.190	0.260	0.720	0.470	2.43
ROA	0.008	0.031	0.250	0.790	1.38
SIZE	0.100	0.087	1.230	0.210	1.82
Cash	0.002	0.000	3.080	0.002	1.20
Growth	0.021	0.015	1.420	0.150	1.10
LEV	0.200	0.015	1.770	0.076	1.33
AR(1)	0.250	0.140	1.840	0.065	-
Intercept	4.610	2.070	2.210	0.026	-
coefficient of determination	0.370				

Variables	Coefficients	Standard error	T statistic	Sig	VIF
Durbin-Watson			1.570		
F statistic			5.016		
Sig			0.000		

5. Discussion and Conclusion

This research aims to investigate the effect of business risk management on financing costs by considering the role of managers' abilities. The cost of financing for companies is always increasing, and companies should consider the lowest cost of capital for financing to obtain the highest profit and return on shareholders' capital. Debt financing is less risky for investors because the lender's expected interest rate is lower than the shareholder's expected rate of return, and also because, according to tax regulations, the interest cost is an acceptable tax expense. This causes the company to pay less tax and is considered a more favorable solution for financing. In other words, tax savings from using this source make it cheaper and increase the shareholders' profits. However, more is needed to maximize the profit of the target shareholders; the degree of risk or uncertainty regarding the profit paid to the shareholder should also be considered.

A company that uses a significant amount of loans commits to paying a fixed interest on its profit, the achievement of which is uncertain because it is impossible to predict how much profit the company will have in the future. In contrast, the company is committed to a fixed interest rate. In this case, the profits of the shareholders will fluctuate a lot. On one hand, the shareholder is happy that the company gets the desired loan because the expected profit increases, and on the other hand, they are worried about the risk to their profit. The shareholder is still determining if they will get the maximum profit. In the event of an excessive increase in debt, the high risk will cause the value of the company's shares to decrease. Therefore, at the same time as financing, it is necessary to pay attention to documented risk management programs. By forming a risk committee, threats can be turned into opportunities with specialized teams because risks and dangers in the competitive market are integral parts of the market. Companies should follow the written programs of risk management and deal with risks by forming risk committees and using experts so that they can satisfy investors with a lower cost of financing.

The results obtained are similar to the research results of Aksoy et al. (2023) and Yilmaz (2022). By identifying risks and forming a risk committee, companies should provide the basis for improving productivity, lowering financing costs, and helping in this field by using capable managers. Future researchers are suggested to examine the research topic in various industries to determine the various aspects, and they can also examine the level of risk management and the level of shareholders' loyalty.

Practical suggestions

The vital role of managers in the survival of businesses is evident, as they are the final decision-makers with high capabilities and a wealth of information, knowledge, experience, expertise, and qualitative attributes. In many cases, managers can pave the way for achieving corporate sustainability by creating competitive advantages over competitors. Capable managers are crucial for the survival of an organization and an economic enterprise, as their decisions can result in significant profits or losses for shareholders. Therefore, it is recommended to encourage the use of risk management strategies in organizations. Company owners can reap greater benefits by hiring capable managers who utilize risk management programs to lower financing costs and increase the company's share value. Introducing new training courses on risk management can be an effective way for stock exchange organizations to promote this practice among companies. Stock exchange organizations should mandate that

companies disclose detailed risk management plans, ultimately leading to the widespread adoption of such plans.

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