



Investigating the effect of the quality of total accruals and the risk of exchange rate fluctuations on the cost of debt

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ABSTRACT

The purpose of this research is to investigate the effect of the quality of total accruals and the risk of exchange rate fluctuations on the cost of debt for companies listed on the Tehran Stock Exchange. This is an applied and descriptive-analytical study. The statistical population consists of all companies listed on the Tehran Stock Exchange between the years 2014 and 2022. After screening, 105 companies were selected as the sample for analysis. To test the research hypotheses, the reliability of the variables was first assessed using the generalized Dickey-Fuller test. In the subsequent step, the Breusch-Pagan, Chow (F-Limer), and Hausman tests were employed to determine the appropriate estimation method, with the results confirming the use of the random effects panel model. According to the results of the Dickey-Fuller test, the variables in the study are statistically significant. Furthermore, based on the random effects panel estimation, the findings indicate that: The first hypothesis of the research is confirmed: the quality of discretionary accruals has a positive and significant effect on the cost of debt for the companies analyzed., the second hypothesis is also confirmed: the quality of non-discretionary accruals has a negative and significant effect on the cost of debt and the third hypothesis is supported: the risk of positive exchange rate fluctuations has a positive and significant impact on the cost of debt.

Keywords:

Quality of discretionary accruals, Quality of non-discretionary accruals, **the risk of exchange rate fluctuations**, Cost of debt.

1. Introduction

The quality of accounting accruals is one of the indicators of the quality of accounting information. Accounting accruals take the largest share of economic accounting policies that companies may resort to beautify their results and financial position (Lee et al, 2020). Many company departments may use methods and accounting procedures that lead to the postponement of recognizing certain expenses. The mention of some of the revenues to subsequent and current financial periods respectively to control a desirable level of economic illness during successive economic periods. The selection and use of policies, methods, and accounting estimates may affect the quality and results of corporate financial operations (Khaghaany & Jabbar, 2022). Therefore, the quality of accounting information presented in the financial statements may have varying effects and implications for the quality of accounting information (Robiyanto et al, 2022). One of the criteria for calculating the quality of the company's profit is the quality of accrual items in the profit, which have a positive relationship. This means, when the quality of accruals increases, the quality of the company's profit increases, and when the quality of accruals decreases, the quality of profit also decreases. The quality of the company's profit also affects the company's efficiency. Because, with the market's awareness of the low quality of a company's reported profit, its shares are not welcomed by investors, and as a result, the return on that company's shares decreases (Ghosh & Olson, 2009). On the other hand, the relationship between risk and return creates different expectations regarding the relationship between the quality of accruals and return. The low quality of accruals reported in companies' profits increases investment risk. According to the relationship between risk and return, increasing the company's risk will increase the company's return (Donelson & Resutek, 2011). Profit management emphasizes accruals. One of the criteria of profit management is calculation of abnormal accruals based on the Jones model (Jones, 1991). Abnormal accruals are equal to the difference between actual accruals and expected accruals. A higher absolute value of abnormal accruals usually indicates lower earnings management. Because, the accrual process of the company is less predictable and unusual accrual items are probably discretionary, that is, they are the result of profit management. There is a point of view in this

regard. Based on the fact that unusual accruals in the accounting system are a tool for transferring confidential information. Therefore, abnormal accruals indicate high earnings management, although its effect is reduced by deliberate earnings management. Based on the empirical literature, the quality of accruals is a better criterion than other accounting criteria (Francis et al, 2005). Because, the quality of accrual items also considers the cash flows of the future period. As a result, it contains more information than other criteria. Although like; Abnormal accruals, the quality of accruals can also show profit management and the potential usefulness of company information (Foroughi et al, 2015).

The cost of debt is actually the cost that the company incurs for the funds provided through loans or the issuance of long-term bonds. This rate also indicates the expected return of lenders. An important advantage of debt financing compared to other sources of financing is that it is part of tax-deductible expenses. Therefore, a part of these costs is returned to the business entity through saving the tax paid, and another advantage is that it is a relatively cheaper source of financing than ordinary and premium shares. On the other hand, the cost of debt indicates the pressure and financial weakness, the representative of debt and the conflict of representation between managers and investors and creditors or between different groups of investors (Ahmedpur, 2010). On the other hand, Company plans for funding operational activities typically involve a combination of equity and debt. This funding initiative increases both the cost of debt and the cost of equity. Funding decisions substantially impact the company's ability to conduct its operational activities and affect the associated risks. Companies prioritize internal sources of money and only turn to external borrowing when internal finances are insufficient. However, not all company needs for funds can be satisfied from internal sources, so companies may need to outsource those funds from external sources such as debt. Company plans for funding operational activities typically involve a combination of equity and debt. This funding initiative increases both the cost of debt and the cost of equity. Funding decisions substantially impact the company's ability to conduct its operational activities and affect the associated risks. Companies prioritize internal sources of money and only turn to external borrowing when internal finances are. However, not all company

needs for funds can be satisfied from internal sources, so companies may need to outsource those funds from external sources such as debt (Bui et al, 2023).

The cost of debt illustrates the risk that a firm must carry since creditors intend a greater rate of return to compensate for the company's possible losses in the future. The previous researches done in relation to debt and profit management generally express the effective and determining role of debt. (Gupta et al, 2008) Myers' research (1977) states that when the maturity of the debt is short-term, the impact of debt interest is greater. It also states that when the company's credit is uncertain, the impact of short-term debt interest on earnings management is greater. Creditors and investors, even despite the report of the company's profitability, still show interest in the amount of the company's debts in order to evaluate the credit risks. For example, Treacy and Carey's research (Treacy and Carey, 1998) stated that credit risk reporting increases the quality of financial reporting, such as the competence and integrity of managers. As a result, more evaluation regarding short-term maturity as a monitoring device has positive effects on the quality of financial reporting. One theory that is related to the maturity structure of liabilities is the problem of symmetric information, which leads to the liquidity signaling hypothesis. The signaling theory is based on the premise that the issuance of short-term debt is a positive sign of the company's low credit risk. Also, companies whose current value level is lower than their real value and prefer short-term debt have a higher credit value. While companies that have low quality. They are inclined to long-term debt, because in the case where the transaction cost is positive; they cannot afford long-term debt. In general, as credit ratings (credit rating and company quality) lead to lower risk, debt maturity (i.e. the ratio of short-term debt to total debt) will have a stronger inverse relationship with company quality. Diamond's research (Diamond, 1991) in support of this theory showed that the higher the credit rating of the companies. Because they prefer the risk of refinancing short-term debt less. This finding indicates that the companies with better performance avoid the maturity crisis (Hajeha & Akhlaghi, 2012). Jones defines the difference between profit and cash from operations as accruals. In fact, accrual items are said to be items that delay the registration of income and expenses, or accrual items can be introduced as a transfer of cash to another time.

This means that cash payments and receipts are correctly included in the recorded accruals and this makes these items better reflect the economic realities of the company (Foroughi et al, 2015).

On the other hand, in our country, due to the economic conditions governing the financial markets and the continuous currency fluctuations and the effect of these conditions on the performance of organizations, a type of financial analysis seems necessary to know the financial status of organizations. Thus, the relationship between risk and return creates different expectations regarding the relationship between the quality of accruals and return. The low quality of accruals reported in companies' profits increases investment risk. According to the relationship between risk and return, increasing the company's risk will increase the company's return (Donelson & Resutek, 2011). On the other hand, there are two roles in the relationship between financial markets and exchange rates: 1) Risk-sharing: Financial markets enable the sharing of macroeconomic risks between countries. Households use financial claims to balance their marginal rates of substitution, helping to smooth out macroeconomic shocks, as discussed by Backus and Smith (1993) and Cole and Obstfeld (1991). 2) Source of shocks: Financial markets can also introduce shocks to the exchange rate. For instance, macroeconomic or financial shocks that affect institutions mediating international trade can influence the exchange rate, as shown in studies by Gabaix and Maggiori (2015) and Itskhoki and Mukhin (2021). These two roles are complemented by competitive markets and informational transparency (Chernov et al, 2024). Therefore, the innovation of this text lies in its examination of the impact of accounting accruals on financial reporting and decision-making within companies, with a particular focus on how external factors, such as economic conditions and currency fluctuations, influence financial decision-making and reporting. It investigates how various accounting policies and procedures can affect profit quality, earnings management, and debt costs, providing insights into how these external factors interact with accounting practices to shape financial outcomes in a dynamic economic environment.

2. Research literature and background

Accrual items refer to the difference between accrued interest and cash interest. Jones (1991) characterized

the gap between profit and operating cash flows as accruals. One of the key advantages of accruals lies in their alignment with the realization and matching principles, fundamental concepts that enhance the evaluation of a company's financial performance under the accrual accounting system. However, using accruals involves estimating the cash flow from a financial event. If this estimate proves inaccurate, the accruals and reported income must be adjusted in future periods. According to Wang (2006), operating profit can be broken into two components: a cash component (representing cash flows from operational activities) and an accrual component (the difference between operating profit and the cash flows). According to Dasgir et al. (2011), the use of accruals ensures compliance with the realization and matching principles, boosting the evaluation of the company's financial position. Nevertheless, the use of accruals requires estimating cash flows, and when these estimates are wrong, liabilities and recognized income need future adjustments. For example, if the actual receipt from a transaction falls short of the initial estimate, subsequent entries correct the estimate error and reflect the actual cash received. These estimation discrepancies and their corrections undermine the reliability of liabilities, making them less useful. Thus, the greater the error in estimation, the lower the quality of accrual items. Larger accrual items, which require more estimates, increase the likelihood of estimation errors, thereby reducing the quality of these items. Commitment item quality is regarded as a proxy for accounting quality. According to Khojawi et al. (2012) by offering insights into expected cash flows, it aids investors and helps in effective cash management. The higher the quality of accrual accounting information, the easier it is to forecast future cash flows, simplifying the financing process for companies (Siladjaja and Jasman, 2024).

Profit management heavily relies on accruals. A common method for calculating profit management involves determining abnormal accruals using the Jones model (Jones, 1991). According to Francis et al. (2004) abnormal accruals represent the discrepancy between actual and expected accruals. A larger absolute value of abnormal accruals generally suggests lower profit management efficiency, as it indicates the accrual process is less predictable and that these accruals may be discretionary, possibly reflecting profit manipulation. In this context, unusual accrual

items in the accounting system are sometimes used as a means of conveying private information. Therefore, abnormal accruals are often seen as a sign of significant earnings management, though their impact may be mitigated by deliberate earnings adjustments. Empirical studies have shown that accrual quality is a more reliable criterion than other accounting measures. This is because accrual quality takes future cash flows into account, providing richer information than other criteria. However, similar to abnormal accruals, the quality of accruals can also signal profit management and offer valuable insights into the potential usefulness of a company's financial information (Bansal, 2024).

Ha Thi et al. (2021) state that companies typically have two primary avenues for financing their resource needs: equity financing (internal) and debt financing (external). Both options come with distinct advantages and disadvantages, which result in differences in the cost of capital. The choice of financing method, whether through equity or debt, depends largely on the company's specific conditions, financial restrictions, and strategic goals. Many companies aim to find an optimal mix of both methods, guided by various financing theories such as the pecking order theory, which suggests that companies prefer internal financing and only resort to debt or equity when necessary. Debt financing is often seen as a more attractive option due to its tax advantages and typically lower costs compared to the expected returns demanded by shareholders. However, lenders are primarily concerned with a company's ability to repay the principal and interest on loans, meaning repayment capacity plays a crucial role in the decision-making process for credit approval. To determine the most appropriate financing strategy, a company's management must assess both the cost of financial resources and the potential impact these resources will have on the company's risk and return profile. Ultimately, the objective is to minimize the cost of financing while balancing the potential risks involved. Companies must carefully weigh the trade-offs between using debt for its cost benefits and the risks associated with higher leverage, making strategic decisions that support long-term sustainability and financial stability (Zheng et al., 2024).

There are two significant issues related to this. First, empirical studies have yielded conflicting results regarding the relationship between debt and accrual-based earnings management. Some researchers have

found a positive relationship, while others have found no relationship or even a negative one. For instance, Le et al. (2021) identified an inverse relationship between financial leverage and discretionary accruals, suggesting that financially distressed firms reduce accruals before renegotiating contracts. Similarly, Liu (2022) confirmed this inverse relationship, though many studies have not provided explanations. On the other hand, Prakosa et al. research (2022) found a positive relationship between discretionary accruals and debt. Sánchez-Ballesta and Yagüe (2023) observed that monitoring lenders and managing short-term debt in companies with lower liquidity risk could reduce agency costs and improve financial reporting. Second, the role of earnings management in corporate profits remains a critical issue for investors and managers making resource allocation decisions (Bergstresser & Philippon, 2006). While some studies have examined internal control and monitoring mechanisms (Klein, 2002), there remains a gap in research regarding the relationship between reducing agency costs, short-term debt, and earnings management (Firmansyah et al., 2024).

According to Afuecheta et al. (2022), exchange rate fluctuations pose a potential risk that impacts a company's financial performance. These fluctuations influence the company's financial accounts or cash flow, creating uncertainty about future receipts and payments. Exchange rate risk can be categorized into three main types: conversion risk, transaction risk, and economic risk. **1) Conversion risk:** arises when the value of a company's balance sheet items, including assets, liabilities, and capital, changes due to fluctuations in the exchange rate. This risk manifests at the moment of conversion from one currency to another. Conversion risk is further divided into three types: 1) profit risk, 2) balance sheet or leverage risk, and 3) net income risk. Exchange rate fluctuations significantly affect financial accounts, where an increase in the exchange rate may boost optimism among market participants, causing the company's share price to rise. However, this rise is often temporary, leading to reduced liquidity and potential negative effects in the long term. Furthermore, as exchange rate fluctuations increase, the company's cash flow may become more volatile, raising financing costs. **2) Transaction risk:** differs from conversion risk in that it affects a company's cash and operational flow, particularly in the import and export sectors.

This risk is considered a core focus in risk management literature and is primarily concerned with cash flow volatility when a company converts its foreign currency earnings into its national currency. **3) Economic risk:** refers to the long-term impact of exchange rate fluctuations on a company's cash flow and market value. These fluctuations can harm a company's ability to generate cash flow, and long-term changes in the exchange rate can threaten its overall market value. Inflationary effects caused by exchange rate fluctuations may not fully offset the impact of inflation on cash flow. In essence, even if product prices increase proportionally to the exchange rate, companies still face risks related to purchasing and competition. Of course, in economic risk, there are competitor and purchase risks. **a) Purchase risk:** occurs when companies' customers are exposed to exchange rate fluctuations. This can lead to increased costs, particularly if the exchange rate inversely affects the value relationship, making products more expensive for customers and reducing sales volumes. This risk is also relevant for domestic companies with local customers, as a falling domestic currency can make foreign goods cheaper, potentially eroding market share if domestic companies do not adjust their prices. **b) Risk of competitors:** highlights how exchange rate fluctuations can affect a company's competitiveness. For example, exchange rate changes can make a competitor's products cheaper for joint buyers, while making the domestic company's products more expensive. In response, competitors may reduce their prices, which could affect the domestic company's market position. Economic risk is generally more costly compared to conversion and transaction risks. Additionally, exchange rate fluctuations compound other risks in business environments, such as credit, interest rate, liquidity, market, price, commercial, human resources, efficiency, and productivity risks (Ridhwan et al., 2024).

Risks are a major source of concern for owners, executives, experts, as well as shareholders worldwide. Companies are very sensitive to exchange rate changes in the economic environment of the country, which is effective in exchange rate changes and affects the cost of debt. There is a combination of different methods for financing the company's debts and forming the capital structure. The cost of debt and equity are the main pillars of the capital structure and also reflect the

main interests in the company's assets. The debt cost of companies is financed by borrowing from banking institutions or issuing securities. The risk of exchange rate fluctuations and the instability of financial markets has a significant effect on the value of the national currency and changes the value of the company's assets and income. On the other hand, the effect of exchange rate fluctuations cannot be eliminated with risk management methods, this issue has a significant effect on receiving loans and credit purchases and financial planning of the company. This has caused financial and economic analysts to pay special attention to the effects of the risk of exchange rate fluctuations on the income, costs and profitability of companies. The risk of exchange rate fluctuations is also an independent variable of the model. Fluctuations in the exchange rate cause fluctuations in the financial accounts, especially the cash flow of the company, the participants in the stock market do not want to trade the shares of these companies, and this in turn causes the volume of transactions related to the shares. The company's participation in the market will decrease, and on the other hand, production units may transfer it to buyers in order to neutralize the effects of this risk. (Pyoko and Muchiri, 2023).

Gudarzi Farahani et al (2026), in an article titled Presenting the early warning model of financial systemic risk in Iran's financial market using the LSTM model Using the long-short-term memory (LSTM) approach to predict financial risk and return changes in the country's capital market during the period 2011-2023, they have achieved the following results: model evaluation on test data was used to measure the system's performance in generalizing network training to the testing stage and the model's ability to predict the efficiency of the financial industry, as well as as a warning system.

Azaryoun et al (2023), in an article titled Evaluation of Parallel Market's Long-term Memory Based on DFA and ARDL-Based Detrending (Case Study: Stock Market and Exchange Rate). Using regression models for volatility analysis from two common methods of trend reduction and crossover in daily time returns 2014/03/25 2021/02/07 Stock market indices have reached the following results :The results showed that the cross-trending of parallel markets produces different results in estimating the long-term memory of the data. According to the research findings, the stock index has a short-term

memory under the conventional detrending method, while the cross-detrending method shows longterm memory for this index. The results for the exchange rate showed that under the conventional etrending method, the long-term memory of the exchange rate cannot be estimated in all market volatilities situations, while the cross-detrending method showed that the exchange rate loses its long-term memory in the face of increasing market fluctuations. The results also showed that under the cross-trending method, there is a direct and significant relationship between the long-term memory of the stock market index and the exchange rate.

Ghorbani et al (2023), in an article titled Characteristics of Audit Committee and Earnings Management in Developing and Developed Countries, Using Meta-Analysis Approach Using meta-analysis technique and research design, GarciaMeca and Sanchez-Ballesta have reached the following conclusions in 30 independent studies during the years 2000-2019 that the characteristics of audit committee and earnings management in developing countries: independence and financial expertise are negatively related to earnings management, and the number of audit committee meetings is not significantly related to earnings management. In developed countries, independence and size of audit committee are negatively and significantly related to earnings management, and financial expertise and number of audit committee meetings are not significantly related to earnings management. Examining the relationship between financial expertise and earnings management indicates the heterogeneity of studies.

Pyoko & Muchiri (2023), in an article titled Effect of Risk on Total Debt of Companies Listed on the Nairobi Securities Exchange, the study objective is to investigate the effect of risk on total debt of companies listed on Nairobi Securities Exchange. The study was underpinned by tradeoff theory and pecking order theory. The study utilized causal research design. Secondary data was used to collect data from yearly accounting statement from 2007-2011. Panel regression was used to analyze the fixed effect model. The result showed that risk negatively and substantially affects total debt. The study recommended that the management of listed firms should understand the tradeoff theory and pecking order theory. The study also recommended that risk should continually be monitored by companies to be in

line with the prevailing economic conditions. This can be ensured by studying other factors trend that can affect the risk of companies.

Rahimi et al (2022), in an article entitled the relationship between mandatory profit forecasting and forecast adjustment with unusual accruals, using multivariable regression in 91 companies listed on the Tehran Stock Exchange during the years 2011 to 2020 have examined. The results indicate that there is a direct relationship between accrual items of working capital and abnormal accrual items of working capital with profit forecasting error by management and between accrual items of working capital and abnormal accrual items of working capital with forecast adjustment. There has been an inverse relationship.

Ha Thi et al (2021), in an article titled quality of accruals and cost of debt using a sample of Vietnamese listed companies in the period of 2012-2017, it was determined that the quality of accruals has a significant negative relationship with cost There is debt. Therefore, providing high quality accounting information is very important.

Kyung et al (2020), in an article entitled quality of accruals, information risk and trading behavior of institutional investors in the Korean stock market, the impact of company-specific information risk measured by quality of accruals and cost of capital using the trading behavior of institutional investors It has been analyzed. Institutional investors in companies with lower accruals quality have increased their net sales in the following years. In addition, the net sales of these investors have been related to the intrinsic and optional factors of accrual items quality.

Eliwa et al (2019), in an article entitled quality of accruals and cost of debt in listed companies of 15 European Union member countries for the time period from 2005 to 2014, have investigated using multivariate analysis. The results indicate that there is a negative and significant effect between the quality of accruals and the cost of debt, and it indicates that creditors pay special attention to the quality of accounting information.

On the other hand, the knowledge of this research is that, in addition to the effect of the quality of total accruals (optional and non-optional) at the same time, the effects of the risk of exchange rate fluctuations on the cost of debt of companies have been investigated.

3. Research hypotheses

Hypothesis 1: The quality of discretionary accruals has a significant effect on the cost of debt of companies listed on the Tehran Stock Exchange.

Hypothesis 2: The quality of non-discretionary accruals has a significant effect on the cost of debt of companies listed on the Tehran Stock Exchange.

Hypothesis 3: The risk of exchange rate fluctuations has a significant effect on the cost of debt of companies listed on the Tehran Stock Exchange.

4. Methodology

The present research is rationalistic in terms of its approach and practical in terms of its goal, and it is among descriptive-correlational researches. Also, the research method is deductive reasoning in terms of type and it is a retrospective research in terms of time. The statistical population of the present study includes 105 companies admitted to the Tehran Stock Exchange from various industries in the returns of 2013-2014, and was selected by the systematic elimination method. Following the study of Ha Thi et al (2021) and Pyoko & Muchiri (2023), model (1) was used to test the research hypothesis.

$$Dbet_{it} = \beta_0 + \beta_1 NDA_{it} + \beta_2 DA_{it} + \beta_3 D1 + \beta_4 D2 + \beta_5 SIZE_{it} + \beta_6 LEV_{it} + \beta_7 IntCover_{it} + \beta_8 \sigma(NI)_{it} + \beta_9 ROA_{it} + \beta_{10} CFperform_{it} + \beta_{11} IndDummy_{it} + \epsilon_{it} \quad (1)$$

Where in; the definitions of the symbols and how to calculate each of the variables of the research model are explained in table (1).

In order to test the hypotheses of the research, the significance of the coefficients in order; β_1 (first hypothesis), β_2 (second hypothesis), β_3 and β_4 (third hypothesis) will not be rejected.

Table (1) definition of research variables and how to measure them

Variable Role	Variable	Variable Symbol	The method of measurement
Dependent	Debt Cost	$Dbet_{it}$	The ratio of the financial cost of each period to the average total debts at the end of the period
Independent	Non-discretionary accruals	NDA_{it}	Using the model (Jones, 1991), the error values of the following model represent the total amount of non-discretionary accruals: $NDA_{it} = \alpha_0 + \alpha_1 1/A_{t-1} + \alpha_2 \Delta REV_t + \alpha_3 PPE_t + \epsilon_{NDA_t}$ In this pattern: NDA_{it} , indicates total non-discretionary accrual items. $1/A_{t-1}$, represents the division of the number 1 by the total assets at the beginning of the year. ΔREV_t , indicates the changes in the total sales revenue of the current year compared to the sales of the previous year. PPE_t , sum of fixed assets (property, machinery and equipment) in gross form (before deduction of accumulated depreciation) and ϵ_{NDA_t} , total accruals are non-discretionary.
	Discretionary accruals	DA_{it}	Using the model (Jones, 1991), first, the error values of the following model representing the total amount of accrual items were obtained: $TACC_t/A_{t-1} = \beta_0 + \beta_1 1/A_{t-1} + \beta_2 \Delta REV_t/A_{t-1} + \beta_3 PPE_t/A_{t-1} + \epsilon_{NDA_t}$ In this pattern: $TACC_t$, indicates total accrual items and ϵ_{NDA_t} , the amount of total accrual items. Then optional accrual items DA_{it} is equal to: $DA_{it} = \epsilon_{TACC_t} - \epsilon_{NDA_t}$
	Risk of exchange rate fluctuations	$D1$ and $D2$	Exchange rate fluctuations have been extracted using Hodrick-Prescott method. $CycleR = R - HPR$ $D1 = MAX(0, CycleR)$ $D2 = MIN(CycleR, 0)$ Where in; $D1$, representative of positive exchange rate fluctuations, $D2$, representative of negative exchange rate fluctuations, which are defined as dummy variables between 0 and 1.
Control	Size of the company	$SIZE_{it}$	The natural logarithm of total assets
	Financial leverage of the company	$LEV_{i,t}$	The ratio of total debt to total assets of the company
	Ratio of operating profit to interest expense	$IntCover_{i,t}$	is the ratio of operating profit to interest expense of company i in period t.
	Standard deviation of last 5 years of income	$\sigma(NI)_{it}$	The standard deviation of the last 5 years of pre-tax income divided by the average total assets
	return on assets	ROA_{it}	The ratio of cash flow operations to total assets

Continue the table (1) definition of research variables and how to measure them

Variable Role	Variable	Variable Symbol	The method of measurement
Control	Cash flow performance	$CFperform_{it}$	Net profit after tax ratio divided by average total assets
	Industry type	$IndDummy_{it}$	The dummy variable is the industry type of company i in period t, which is one if the company is one of the industrial companies and zero otherwise.

5. Findings

The descriptive statistics of the research are presented in Table 2 and the variables of the research have been examined in terms of central and dispersion indicators. The mean for the debt cost variable is equal to 0.070 and among the important dispersion indicators is the standard deviation, which is equal to 0.046 for the debt cost variable, and the value of its skewness coefficient is positive and represents the skewness to the right (the distance between the data values it is big compared to other data). Its kurtosis is equivalent to 2.160, which is shorter than the normal state.

It is necessary to ensure the results of research in the interpretation of hypotheses before estimating diagnostic tests, including; To check the reliability of

research variables, Chow test (Limmer F), Brusch-Pagan test and Hausman test. Based on this, in order to prevent false regression, all the research variables have been subjected to the generalized Decay-Fuller significance test and all the research variables are at the significance level. In the next step, Chow (Limmer's F), Brusch-Pagan and Hausman tests were performed, the results of which are shown in Table 3. According to the results of Table 3, the research model, despite the heterogeneity of variance, uses the panel method with the random effects method.

After the diagnostic tests and confirmation of the estimation results for the interpretation of the research hypotheses, the research model was estimated and the results are shown in Table 4.

Table 2. Descriptive statistics of research variables

Variable	Average	S.D	The lowest	The most	Skewness	Kurtosis
debt cost	0.070	0.046	0.005	0.164	0.387	2.160
Non-discretionary accruals	0.010	0.084	-0.151	0.154	-0.088	2.175
Discretionary accruals	0.003	0.153	-0.237	0.360	0.634	2.980
size of the company	15.086	1.400	13.022	18.529	0.853	3.244
Financial Leverage	0.568	0.184	0.229	0.894	-0.103	2.167
Ratio of operating profit to interest expense	11.473	19.407	-1.023	75.185	2.231	7.468
Standard deviation of last 5 years of income	0.101	0.059	0.021	0.233	0.703	2.614
Return on assets	0.365	0.429	-0.074	1.538	1.442	4.248
Cash flow performance	0.115	0.112	-0.061	0.362	0.555	2.655

Table 3. Results of Chow (F Leamer), Brush-pagan and Hausman tests

Test	statistics	Prob	Result
Brush-pagan	340.59	0.000	Heterogeneity - GLS estimation method
Chow (F Leamer)	7.38	0.000	Panel method
Hausmann	2.37	0.336	Random effects

Table 4. Estimation results of the research model

Variable	symbol	Coefficient	S.D	t-statistic	Porb
Non-discretionary accruals	NDA_{it}	0.046	0.008	5.06	0.000
Discretionary accruals	DA_{it}	-0.033	0.008	-3.83	0.000
Risk of exchange rate fluctuations	D1	0.021	0.005	3.89	0.001
	D2	-0.012	0.021	0.57	0.673
Size of the company	$SIZE_{it}$	0.008	0.002	0.34	0.736
Financial Leverage	LEV_{it}	0.047	0.017	2.66	0.009
Ratio of operating profit to interest expense	$IntCover_{i,t}$	-0.0007	0.0001	-6.94	0.000
Standard deviation of last 5 years of income	$\sigma(NI)_{it}$	-0.045	0.049	-0.93	0.355
Return on assets	ROA_{it}	0.020	0.005	3.94	0.000
Cash flow performance	$CFperform_{it}$	-0.039	0.010	-3.645	0.000
Industry type	$IndDummy_{it}$	0.005	0.003	1.35	0.179
Fixed coefficient	C	0.039	0.043	0.92	0.361
R ² =0.67		Wald- statistic(prob)= 73.89(0.000)			

According to the significance level of Wald-statistic (0.00), all the regression coefficients are not zero at the same time. Therefore, it is possible to examine the relationship between independent and dependent variables. Based on the results of Table 4, the variable coefficient of the quality of discretionary accruals is equal to 0.046 and its significance level is less than 0.05, which indicates the existence of a positive and significant relationship between the quality of discretionary accruals and the cost of debt, and the first hypothesis of the research is rejected. The variable coefficient of the quality of non-discretionary accruals is equal to (-0.033) and its significance level is less than 0.05, which indicates the existence of a significant negative relationship between the quality of non-discretionary accruals and the cost of debt, and the second hypothesis of the research is not rejected. In the third hypothesis, the effect of the risk of exchange rate fluctuations on the cost of debt was tested from both positive (increase in the exchange rate) and negative (decrease in the exchange rate) and it was found that the effect of the risk of negative fluctuations in the exchange rate did not have a significant effect on the cost of debt, but the risk effect of positive exchange rate fluctuations on the cost of debt has been positive and significant. Therefore, the effect of the risk of exchange rate fluctuations on the cost of debt is not rejected from the positive side in the third hypothesis, and it is rejected from the negative side of the third hypothesis.

6. Discussion and Conclusions

The aim of the current research is to examine the effect of the quality of total accruals and the risk of exchange rate fluctuations on the cost of debt, which according to the diagnostic tests for the interpretation of the research hypotheses of the research model of the panel method with the random effects method between the years 2014- 2024 has been estimated using the data of 105 companies admitted to the stock exchange.

As the results of the H1 of the research showed, the quality of optional accruals has had a positive and significant effect on the cost of debt of the investigated companies. Therefore, discretionary accruals have increased the cost of debt of the investigated companies. The cost of debt is the result of the creditors' prediction of the company's current situation and the estimation of the risk of the company's incoming cash flows. The analysis of the current

situation and the future forecast are based on the information available to analysts and creditors. The most important part of financial statements is profit, which is considered as a summary indicator by the users of financial statements. Based on this, the higher the quality of the profit, the more accurate the future forecast will be. If the ratio of accrual items increases in profit calculation, the quality of profit decreases and the possibility of making mistakes increases. Discretionary accruals are those accruals that change as a result of the management decisions of the business unit. In other words, these items are influenced by the selection procedures and policies (based on accounting standards) of the company. The more the management has the authority to manipulate the commitment items, the possibility of using them to affect the profit increases. Therefore, high discretionary accruals are considered as manager's opportunism. The quality of low commitment items reduces the closeness of profit with cash flows and increases the investor's risk in relation to making decisions about a particular company or companies. Voluntary accruals indicate deliberate profit management and are considered as manager's opportunism from the market's point of view. The market will react to these managers' actions by increasing the expected return and will punish the company by increasing the cost of debt. The findings of the H1 of the research are in line with the results of the researches of all Yen (2002) and Ha Thi et al (2021), but they are in conflict with the results of Wang (2006).

In H2, the effect of non-discretionary accruals on the cost of debt of companies listed in the Tehran Stock Exchange has been investigated, and the statistical analysis of the collected data has confirmed the above hypothesis in the environment of companies active in the Iranian capital market. According to the results of the research, the quality of non-discretionary accruals has reduced the cost of debt of companies. Non-discretionary commitment items are recognized based on accounting standards; Non-discretionary accruals are limited by regulations, organizations and other external factors. Therefore, the management does not have much ability to handle non-discretionary commitment items. However, discretionary commitment items can be the result of management's opportunistic behavior. Therefore, non-discretionary accrual items will not face a negative reaction from the market's point of view and will be accepted by the

market as part of the profit. In justifying this result, it can be claimed that non-discretionary accruals increase the company's profit. However, the market has not been able to identify this issue. Based on this, the increase in the company's profit is considered by the market as a good news and has reduced the risk and adjusted the creditors' expectations of the expected interest rate to finance the company. Accordingly, the cost of debt has decreased. The findings of the H2 are in line with the results of Rahimi et al (2022), Eliwa et al (2019) and Ha Thi et al (2021).

In H3, the effect of the risk of exchange rate fluctuations on the cost of debt was tested from both positive (increase in the exchange rate) and negative (decrease in the exchange rate) and it was found that the effect of the risk of negative fluctuations in the exchange rate did not have a significant effect on the cost of debt, but The effect of the risk of positive exchange rate fluctuations on the cost of debt has been positive and significant. Therefore, the effect of the risk of exchange rate fluctuations on the cost of debt is not rejected in the H3. On the other hand, companies can use two main methods for financing; 1) financing through the company's reserves and accumulated profits, 2) financing through cash receipts and claims, which companies use more of these two methods than the second method. Now, the increase in the risk of positive exchange rate fluctuations has caused the company's debt cost to grow, this effect can be considered in two ways; 1) The growth of the exchange rate has caused a decrease in the value of the national currency and reduced the value of the company's cash flow, and the company's ability to respond to its operational performance and debt repayment is at risk and 2) with the increase in the risk of positive exchange rate fluctuations. The currency value of the company's assets has grown and the opportunistic managers of the company act with deliberate profit management, in any case, the increase in the risk of exchange rate fluctuations imposes an instability on the capital market, and with the increase in the cost of debt, it causes capital to exit the market. It becomes capital and in the long run, it will lead to unfavorable conditions in the economy. The results of the third hypothesis test are in line with the results of Pyoko & Muchiri (2023) and Kyung et al (2020).

According to the results of H1, it is suggested to the managers of the companies; In order to reduce the cost of debt, which increases profits and obtains a

suitable return for shareholders, optional accruals are used as little as possible in the calculation of profit, so that the quality of profit is increased, and in this way, the trust of creditors is gained towards the performance of the company, and also, Creditors are also suggested; During the validation of companies to pay facilities, they should more accurately analyze the company's profit and its constituent items, especially optional accrual items, so that they can correctly identify the optional accrual items used to calculate the profit, and identify the company's risk and determine the interest rate.

Based on the findings of H2, it is suggested to company managers; by improving the quality of financial reporting, it will increase the awareness of the users of financial statements in differentiating discretionary and non-discretionary accrual items to be used in the calculation of profit, so that creditors can have a correct understanding of profit and make a rational decision. Also, the pillars of corporate governance, including the board of directors and the internal audit committee, are suggested; by creating the necessary mechanisms, it has increased the quality of profits so that managers do not impose heavy debt costs on the company with opportunism and short-term profiteering.

According to the results of H3, it is suggested to the pillars of the country's governance, that stability in the currency market and preventing the depreciation of the national currency through currency policies in accordance with a favorable exchange rate regime, the risk of exchange rate fluctuations is adjusted and the company to operate in a suitable business environment outside of deliberate profit management along with reducing exchange cost.

Finally, a limitation of this research is that, given the various methods proposed for measuring the quality of accruals and the cost of debt, caution should be exercised when generalizing the results of this study and comparing them with the findings of other researchers. Additionally, since the research was conducted for the period from 2014 to 2022, focusing on 105 companies listed on the Tehran Stock Exchange, caution should also be exercised when applying the results to other companies.

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