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Journal of Risk and Financial Management

Provided in Cooperation with:

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Suggested Citation: Zadeh, Farzaneh Nassir; Askarany, Davood; Asl, Solmaz Arefi (2022) : Accounting conservatism and earnings quality, Journal of Risk and Financial Management, ISSN 1911-8074, MDPI, Basel, Vol. 15, Iss. 9, pp. 1-18,
<https://doi.org/10.3390/jrfm15090413>

This Version is available at:

<https://hdl.handle.net/10419/274933>

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Article

Accounting Conservatism and Earnings Quality

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Abstract: Purpose—The study on the relationship between accounting conservatism and earnings quality is not new. However, the results are inconsistent and mixed, and to some degree, even contradictory, which represents a gap in the literature. The purpose of this study is to provide some explanations for these mixed results in the literature by investigating the effect of corporate governance mechanisms, as a moderator variable (which has not been considered in the literature before), on the relationship between accounting conservatism and earnings quality based on the Dechow and Dichev model and the modified Jones model. **Design/methodology/approach**—The statistical model used in this study is a multivariate regression model; furthermore, the statistical technique used to test the hypotheses is panel data. **Findings**—The findings reveal that the adopted models (Dechow and Dichev) and the corporate governance mechanisms (such as board independence, large shareholders, and institutional ownership) can have a moderating effect on the relationship between accounting conservatism and earnings quality. These findings are exciting, contribute to the current literature, and explain some of the reasons for mixed results. **Practical implications**—The findings of the current study provide an important guideline for firms to consider the impact of adopted models (Dechow and Dichev), as well as the corporate governance mechanisms (such as board independence, large shareholders, and institutional ownership) on the relationship between accounting conservatism and earnings quality. **Originality/value**—Examining the impact of Dechow and Dichev models as well as the corporate governance mechanisms on the relationship between accounting conservatism and earnings quality is new in this paper. It can explain part of the reasons for the mixed and inconsistent results in the literature.

Keywords: accounting conservatism; corporate governance; earnings quality



Citation: Zadeh, Farzaneh Nassir, Davood Askarany, and Solmaz Arefi Asl. 2022. Accounting Conservatism and Earnings Quality. *Journal of Risk and Financial Management* 15: 413. <https://doi.org/10.3390/jrfm15090413>

Academic Editor: Khaled Hussainey

Received: 24 August 2022

Accepted: 14 September 2022

Published: 19 September 2022

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1. Introduction

Research on the relationship between accounting conservatism and earnings quality has produced inconsistent, mixed, and to some degree, even contradictory results (Crockett and Jahangir 2015; Zeghal and Lahmar 2018; Zhang et al. 2019; Lim 2011). For example, Utomo et al. (2018) report a positive relationship between accounting conservatism and quality of earnings, while Penman and Zhang (2002) and Veronica (2013) show a negative relationship between accounting conservatism and earnings quality. Caskey and Laux (2017) suggest that conservatism can lead managers to manipulate accounting information and distort the quality of earnings.

Given the above, this study aims to provide some explanations for these mixed results by re-examining the relationship between accounting conservatism in the literature based on Dechow and Dichev model and the modified Jones model. We aim to investigate the effect of corporate governance mechanisms, as a moderator variable (which has not been studied in the literature before), on the above relationship.

Many stockholders use the earnings information presented in the company's financial statements to measure financial performance and assess their companies' financial position

and results. Among accounting measures, accounting earnings is considered a performance measure frequently used by researchers (Chhaochharia et al. 2012). On the other hand, accounting earnings data calculated based on the Generally Accepted Accounting Principle (GAAP) is an alternative way to measure corporate profits for two reasons; first, accounting earnings have the timeliness feature. Second, according to prior literature (Dechow and Dichev 2002), accounting earnings data reasonably predicts future cash flows relative to the current cash flows (Konchitchki and Patatoukas 2014).

Although accounting earnings reported in financial statements is good guidance for predicting future companies' cash flows, some limitations mean analysts find the quality of earnings a better measure for predicting and decision making. So, in their empirical studies researchers use earnings figures and their qualities as a valuable measure to determine the value of a company (Sloan 1996; Dechow and Dichev 2002; Schipper and Vincent 2003).

Agency theory suggests separating ownership and control, leading to managers' opportunistic functions (Jensen and Meckling 1976). When ownership and control are split, conflicts of interest arise between owners and managers, creating agency costs (Jensen 1986). The literature suggests that corporate governance can play an essential role in organizations, including ownership, control, performance, earning management, and more (Elsayed and Wahba 2013; Fracarolli Nunes et al. 2021; Govindan et al. 2021; Zhu et al. 2021; Durana et al. 2021, 2022a, 2022b; Valaskova et al. 2021a, 2021b). Corporate governance mechanisms are designed to reduce agency costs by monitoring management's actions and limiting managers' opportunistic behaviour (Ashbaugh et al. 2004). These mechanisms can overcome information asymmetry between managers and stockholders.

Accounting conservatism is described in the adage 'anticipate no profits, but losses' (Bliss 1924; Ji et al. 2016; Rickett et al. 2016) which mean managers recognise 'bad news' earlier than 'good news' in reported earnings. Accounting conservatism and its consequences have been considered by researchers in the accounting literature (Basu 1997; Watts 2003; Ball and Shivakumar 2005; Ewert and Wagenhofer 2012). Asri (2017) showed that accounting conservatism increases the quality of information reported in financial statements and causes to mitigate information asymmetry and agency costs, and finally, managers' opportunistic actions.

Given the accounting scandals that occurred around the world, such as the downfall of Enron and WorldCom, investors have called for stronger oversight of company boards to prevent manipulation and fraud in accounting. Therefore, corporate governance is considered an important issue for investors and can affect the quality of earnings reported in financial statements. So, it is expected that having strong corporate governance in the company's structure can lead to more control over managers' behaviours. Given the above, in this paper we use the modified Jones model (Dechow et al. 1995) and Dechow and Dichev model (Dechow and Dichev 2002) to measure the quality of earnings. Some variables such as managerial ownership, board independence, and the ownership of institutional shareholders and significant shareholders are considered moderating factors in the relationship between accounting conservatism and earnings quality.

The Tehran Stock Exchange (TSE) is Iran's largest stock exchange in Iran. The most crucial advantage of TSE is that it includes 37 industries, and all firms listed on TSE must follow the accounting standards making the information presented in their financial statements comparable and more reliable. So, we use firms' information listed on TSE for this study.

The rest of this paper is structured as follows: Section 2 presents the literature and develops the theoretical framework and hypotheses. Section 3 describes the research method, and Section 4 presents the results. Section 5 focuses on the discussion and conclusion and provides recommendations for future studies.

2. Literature Review and Hypotheses

As the statement of Financial Accounting Concepts No.1 (SFAC No.1) states, "financial reporting should provide information about an enterprise financial performance during a

period". The reported earnings figure is one of the criteria for determining shareholders' expected return. The expectation of future earnings is an indicator for estimating future returns on investment. So, shareholders rely on earnings figures more than other performance indicators such as cash dividends, cash flows and earnings changes (Barth and Schipper 2008). Ball et al. (1997) suggested that conservatism is an essential and intrinsic property for accounting earnings data that behave asymmetrically in reflecting bad news against good news. There are several definitions of earnings quality. Penman and Zhang (2002) suggest that if reported earnings (before extraordinary items on the income statement) are a good indicator of future earnings, we can assume that it has a good quality. Dechow and Dichev (2002) define earnings quality as the quality of accruals based on the relation between accruals and cash flows. They developed a (D.D. model) that presents the linkage between current accruals and cash flows and their errors (showing the quality of accruals and earnings). Schipper and Vincent (2003) define earnings quality as the utility of the earnings number to decision making and determining economic earnings. In the context of earnings quality, Dechow et al. (2010) suggested that when the earnings number has a higher level of quality, it can give more information about the firm's financial performance. They presented three features for earnings quality. In the first feature, earnings quality is based on a specific decision model, so it cannot be defined alone. The second feature of earnings quality is information about a firm's financial performance (Chatterjee 2021; Mohammadrezaei et al. 2015; Tessema et al. 2018; Sosnowski 2021, 2022). In the third one, earnings quality is determined by the relation between the financial performance of the firm and decision-making and by the ability of the accounting system to measure the firm's performance.

2.1. The Relationship between Accounting Conservatism and Earnings Quality

Investors, managers, regulators, and standard setters (Abou-El-Sood and El-Sayed 2022; Benkraiem et al. 2021) believe that improved earnings quality has a significant benefit that can reduce information asymmetry (Bhattacharya et al. 2013; Abdou et al. 2021; Chen et al. 2018; Lail 2014; Watrin and Ullmann 2012; Xu et al. 2012; Ye et al. 2010). Asri (2017) showed that conservatism has a positive and significant effect on earnings quality in improving a company's earnings quality. When management signals the application of accounting conservatism in the company, it positively impacts the quality of earnings. LaFond and Watts (2008) suggest that information asymmetry between insiders (managers) and outsiders (shareholders) of a company may lead to accounting conservatism in financial statements. The signal theory explains that managers make signals to reduce information asymmetry. They use conservative accounting policies that prevent companies from exaggerating earnings and help users of financial statements trust the presented financial information because they are not overstated (Lev and Ohlson 1982).

Conservative accounting is defined in several ways. Basu (1997) defines conservatism as a practice to reduce earnings (writing down net assets) to respond to bad news but not increasing earnings (writing up net assets) in response to good news. Feltham and Ohlson (1995) define conservative accounting as a biased application of historical cost accounting. Conservative accounting affects the quality of the numbers reported on the balance sheet and the quality of earnings reported on the income statement (Penman and Zhang 2002). García Lara et al. (2009) argue that companies with effective corporate governance use conservative procedures to protect stakeholders and investors by reporting bad news at the right time. They further discuss that when managers' benefits depend on the company's reported earnings, managers have strong incentives to hide bad news, which may reduce their benefits. Therefore, conservatism could be considered a mechanism to control managers' motivations to manipulate reported earnings (Alles and Datar 2004; Krishnan and Visvanathan 2008; Mohammadrezaei et al. 2015). Veronica (2013) believes that accounting conservatism has a positive and significant effect on the quality of earnings. Some researchers (e.g., Fan and Zhang 2007; Gao 2013) suggest that accounting conservatism

can increase the quality of information and lead to the further disclosure of accounting information of firms in the stock markets.

Given the above, we may expect that accounting conservatism can reduce stakeholders' expectations and the market value of the firms and, at the same time, increase the quality of information reported to users for decision making (Fan and Zhang 2007). That is why some authors suggest that accounting conservatism should be considered an essential factor in improving the quality of financial information (Abd-Elnaby and Aref 2019; Ji et al. 2016; Rickett et al. 2016). Given the above, we propose our first hypothesis as follows:

H1. *Accounting conservatism is positively associated with earnings quality.*

2.2. The Effect of Corporate Governance Mechanisms on the Relationship between Accounting Conservatism and Earning Quality

Corporate governance has attracted significant attention from regulators and researchers probably because it could enhance investors' confidence in the information reported by the companies (Kyereboah-Coleman and Biekpe 2008; Garg 2007; Ararat et al. 2020; Chen and Yu 2021; de Carvalho et al. 2020; Valaskova et al. 2021c). Corporate governance has mechanisms that control stakeholders' behaviour. So it can be influential in choosing procedures to use accounting principles in conservatism (Fala 2006). Moreover, the corporate governance mechanisms have been argued to affect corporate performance (Chuanrommanee and Swierczek 2007). Corporate governance could mitigate the information asymmetry between investors and managers and reduce their divergence (Mohamad et al. 2012). When companies have good corporate governance, their present information tends to be more accurate, relevant, and timely. So, investors are likely to trust the information related to earnings reported by the companies (Utomo et al. 2018). Some of the corporate governance mechanisms that will be addressed in this study are managerial ownership, institutional shareholders' ownership of large shareholders, and board independence.

2.2.1. The Effect of Managerial Ownership on the Relationship between Accounting Conservatism and Earnings Quality

Lafond and Roychowdhury (2008) suggest that the separation between shareholders (ownership) and managers (control) can create agency problems. Hence, conservatism in reporting is one of the mechanisms that may help overcome these problems. They further argue that a reduction in managerial ownership may lead to an increase in agency costs. Therefore, the demand for conservative reporting may increase.

Jensen and Meckling (1976) argue that if a company increases the number of shares held by management, it may reduce the conflict of interest between managers and shareholders. So, the managerial ownership in a company may ensure that management chooses strategies that increase the firm's value, leading to enhancing the quality of reported information, including earnings. Supporting the above view, Utomo et al. (2018) suggest that when managerial ownership is high, the procedures and policies that the managers use are likely to be more conservative. However, managers usually tend to report higher earnings (less conservative) when managerial ownership is low, probably because their commissions are related to the reported earnings (so the higher earnings, the more commissions they could receive). Given the above, one way to encourage managers to use conservative accounting is to help them own a higher number of company shares. To measure managerial ownership, we can use the percentage of shares held by the board members of a company (Hassan and Butt 2009).

However, there are inconclusive views on the impact of managerial ownership on the relationship between accounting conservatism and earning quality. Some researchers argue that managerial ownership has a positive effect on the quality of earnings of companies (Febiani 2012; García Lara et al. 2009; García-Meca and Sánchez-Ballesta 2009; Utomo et al. 2018), while others believe otherwise (e.g., Hassan and Butt 2009; Veronica 2013). To contribute to the above inconclusive results in the literature, we are going to examine the

impact of managerial ownership on the relationship between accounting conservatism and earning quality and therefore propose the following hypothesis:

H2. *Managerial ownership, as a moderating variable, positively affects the relationship between accounting conservatism and earning quality.*

2.2.2. The Effect of Board Independence on the Relationship between Accounting Conservatism and Earnings Quality

The board of directors in a firm play an important and substantial role in controlling agency costs. Outsider members of the board of directors are in a position that can monitor and control managers reasonably (Cornett et al. 2008). Being an outsider is an indication of independence. So, we may assume that a higher number of outside directors on the board can lead to a more independent and effective controlling role (Stockmans et al. 2013). Therefore, a higher proportion of outside directors can improve and facilitate the monitoring and controlling positions of the board of directors (Beasley 1996; Benkel et al. 2006).

Relevant studies in the literature have typically focused on board independence in the quality of financial reporting. For instance, Park and Shin (2004) examined the relationship between the number of outside board members (as corporate governance) and earnings quality. Their findings show that the board with external members could reduce the level of accrual used by management and earnings management. Koevoets (2017) examined the relationship between board independence and earnings quality. They used McNichols (2002) model to measure earnings quality and showed a negative relation between board independence and earnings quality. Ahmed and Duellman (2007) also reported a negative relationship between conservatism and the percentage of executive managers on the company's board and a positive relationship between conservatism and independent board members. Beekes et al. (2004) showed a positive relationship between conservatism and the percentage of independent board members. Given the above, we assume that the board independence could have an interaction effect on the relation between earnings quality and accounting conservatism and therefore propose our third hypothesis as follows:

H3. *The board of directors' independence, as a moderating variable, significantly affects the relationship between accounting conservatism and earnings quality.*

2.2.3. The Effect of Large Shareholders' Ownership on the Relationship between Accounting Conservatism and Earnings Quality

Shareholders with the highest percentage of shares in a firm are known as 'large shareholders' (Smith and Watts 1992). The level of supervision carried out by large shareholders (as a corporate governance mechanism) could have a significant impact on different aspects of a company, such as its profitability, performance, and its investment policies (because of the high volume of shareholders' investments, they have a better incentive to monitor the management). Therefore, they may encourage managers to improve their decision-making processes and reduce wasting resources (Becker et al. 2011). Given the above, we support the idea that the ownership of large shareholders is supposed to affect the relationship between accounting conservatism significantly and earning quality (Chen et al. 2009) and propose the following hypothesis:

H4. *As a moderating variable, large shareholders' ownership significantly affects the relationship between accounting conservatism and earning quality.*

2.2.4. The Effect of Institutional Ownership on the Relationship between Accounting Conservatism and Earnings Quality

Institutional ownership can be considered an active mechanism in corporate governance that focuses on the long-term benefits of the company's goals (Pound 1992). Institutional shareholders are investors such as bank trusts, insurance companies and mutual

funds (Bushee 1998). So, when institutional shareholders are among the firms' shareholders, they can behave as a monitoring factor in financial reporting. Mallin (2008) suggests that active institutional shareholders can contribute to the transparency of managerial decisions and protect shareholders' interests against managers. Some studies have also reported that institutional shareholders can help reduce managers' aggressive behaviour in earnings management and increase the quality of reported information in financial information (Jiang and Anandarajan 2009). We may also assume that institutional shareholders have more communication channels than individual shareholders, so they can be more effective and mitigate agency problems (Chi et al. 2009).

However, there are inconclusive views on the impact of institutional ownership on the relationship between accounting conservatism and earning quality. Ramalingegowda and Yu (2012) suggest that a high level of ownership of institutions in a firm could lead to a higher level of monitoring and a higher tendency towards using conservative financial reporting. Chhaochharia et al. (2012) consider institutional investors as influential factors who monitor the corporate behaviour of firms and managers' activities and, therefore, can reduce the tendency of managers to manipulate the earnings. Chen et al. (2015) examined the relationship between institutional ownership and accounting conservatism. They found that the higher percentage of shares held by institutional investors, the less conservative practices used by management. Chi et al. (2009) showed that firms with weak corporate governance in their structures are likely to be more conservative. Their findings suggest that firms with a higher level of institutional ownership have less incentive to use conservative accounting.

To contribute to the above inconclusive results in the literature, we are going to examine the impact of institutional ownership on the relationship between accounting conservatism and earning quality and therefore propose the following hypothesis:

H5. *The ownership of institutional shareholders, as a moderating variable, significantly affects the relationship between accounting conservatism and earnings quality.*

3. Research Models and Variables

The required data to test the hypotheses is collected from the companies listed on Tehran Stock Exchange (TSE). The features of the companies that are considered in the sample selection are as follows:

1. The firms must be listed on TSE during the examination (2012–2017) period and be active during the examination period.
2. The firms must have all necessary information available for this research.
3. The firms should not be considered investment companies, leasing, credit and financial institutions and banks.

Given the above conditions, the study's sample population includes 168 (1008 firm-year) companies from 2012 to 2017.

The primary model to test the research hypotheses is explained below:

$$\begin{aligned}
 \text{Earnings Quality}_{it} &= \alpha + \beta_1 \text{Conservatism}_{it} + \beta_2 \text{MOWN}_{it} + \beta_3 \text{BRDIND}_{it} + \beta_4 \text{HHI}_{it} + \beta_5 \text{IOWN}_{it} \\
 &+ \beta_6 \text{Conservatism}_{it} \times \text{MOWN}_{it} + \beta_7 \text{Conservatism}_{it} \times \text{BRDIND}_{it} + \beta_8 \text{Conservatism}_{it} \times \text{HHI}_{it} \\
 &+ \beta_9 \text{Conservatism}_{it} \times \text{IOWN}_{it} + \beta_{10} \text{Fyear}_{it} + \beta_{11} \text{Cperiod}_{it} + \beta_{12} \text{SIZE}_{it} + \beta_{13} \text{LEV}_{it} + \beta_{14} \text{MB}_{it} \\
 &+ \beta_{15} \text{LOSS}_{it} + \beta_{16} \text{AUD}_{it} + \beta_{17} \text{CFO}_{it} + \beta_{18} \text{SALES}_{it} + \sum_{k=19}^n \beta_{19} \text{Industry}_{it} + \varepsilon_{it}
 \end{aligned} \quad (1)$$

The variables of this model are explained in the next section.

3.1. Research Variables

3.1.1. The Dependent Variable: Earnings Quality

The dependent variable in this study is earnings quality for the company i in year t . We use two models to measure earnings quality as follows:

Modified Jones model (Dechow et al. 1995): This model calculates the earnings quality according to discretionary accruals in Equation (2), so the lower number of discretionary accruals, the higher quality of earnings.

$$\frac{TA_{it}}{A_{it-1}} = \alpha_0 \left(\frac{1}{A_{it-1}} \right) + \alpha_1 \left[\frac{(\Delta REV_{it} - \Delta REC_{it})}{A_{it-1}} \right] + \alpha_2 \left(\frac{PPE_{it}}{A_{it-1}} \right) + \varepsilon_{it} \quad (2)$$

where TA_{it} is the total accruals for company i , in year t . A_{it-1} is the asset for company i , in year $t - 1$. ΔREV_{it} indicates the changes in revenues of the company i in year t , which is calculated by revenues in year t less revenues in year $t - 1$. ΔREC_{it} is related to the changes in receivables for the company i , in year t that is measured by receivables in year t less receivables in year $t - 1$. PPE_{it} is the gross property, plant, and equipment (as fixed assets of the company i in year t , and ε_{it} is the residual error for the company i in year t .

$$TA_{it} = (\Delta CA - \Delta Cash) - (\Delta CL - \Delta STD) \quad (3)$$

The following formula is used to calculate the total accruals of the company i , in year t . So ΔCA is the changes in current assets during the year t . $\Delta cash$ is the changes in the cash flow of the company. Moreover, ΔCL indicates the changes in current liabilities, and finally, ΔSTD is the short-term debt changes.

2- Dechow and Dichev's (2002) model: This model is based on the quality of accruals, an indicator for measuring earnings quality. In this model, the standard deviation of the residuals $\varepsilon_{i,t}$ is used as a measure of accrual quality, so the higher the standard deviations, the lower the accrual quality. The model is presented as follows:

$$2) \frac{TA_{i,t}}{Total\ asset\ i,t-1} = b_0 + b_1 * \frac{CFO_{i,t-1}}{Total\ asset\ i,t-1} + b_2 * \frac{CFO_{i,t}}{Total\ asset\ i,t-1} + b_3 * \frac{CFO_{i,t+1}}{Total\ asset\ i,t-1} + \varepsilon_{i,t} \quad (4)$$

where CFO_{it-1} is the operating cash flow for the company i last year ($t - 1$). CFO_{it} is the operating cash flow for the company i , in year t and CFO_{it+1} is the operating cash flow for the company i , in next year ($t + 1$).

3.1.2. The Independent Variable: Conservatism

This study uses the Givoly and Hayn (2000) model as a proxy to estimate the level of 'conservatism' through the following formula:

$$CSCORE_{it} = \frac{TA_{it}}{A_{it}} \times (-1) \quad (5)$$

where $CSCORE_{it}$ is the level of conservatism for the company i in year t , TA_{it} indicates total assets for the company i in year t , and A_{it} is the book value of assets.

3.1.3. Moderating Variables

The moderating variable is a factor that is selected, measured, or manipulated by the researcher to determine whether a change in this factor can lead to a change in the relationship between the main variables. Managerial ownership, board independence, and large and institutional shareholders' ownership are considered moderating variables in this research.

MOWN stands for managerial ownership in this paper and is calculated by using Utomo et al.'s (2018) formula as follows:

$$MOWN = \frac{\text{Number of shares owned by the director}}{\text{number of shares}} \times 100$$

Board independence (BRDIND) is the number of board independence that is calculated as follows:

$$BRDIND = \frac{\text{Number of independent director}}{\text{Total number of director}} \times 100$$

HHI, the ownership of large shareholders

IOWN: the ownership of institutional Shareholders that is calculated as follows:

$$\text{IOWN} = \frac{\text{Number of shares owned by institutional Shareholders}}{\text{number of shares}} \times 100$$

3.1.4. Control Variables

Several factors may affect accounting conservatism and earnings quality which we considered as control variables as follows:

SIZE_{it}: The size of the company *i* in the year *t* that is calculated by using the natural logarithm of Total Revenues.

LEV_{it}: Financial leverage (the proportion of total liabilities to total assets).

MB_{it}: Growth opportunity of the company *i* in the year *t* (the ratio of market-to-book value).

Loss_{it}: When the net income is negative, it equals 1; otherwise, it equals 0.

AUD_{it}: This is an indicator of audit quality; if the auditor is qualified and from a registered Audit organisation, it equals 1; otherwise, it equals 0.

CFO_{it}: This is cash from operations.

SALES_{it}: this represents the fluctuation of the sales.

Industry indicator: that is considered in eight class.

4. Results

4.1. Descriptive Statistics

The measure of central tendency (mean, median, and mode) and the measure of variability (standard deviation, minimum, maximum) are presented in Table 1.

Table 1. Descriptive statistics.

Full Sample (n = 1056)	Variables	Observations	Mean	Median	Std. Dev.	Max	Min
Quantitative variables	<i>JONSE</i>	1008	0.1093	0.0771	0.10778	0.6901	0.0001
	<i>DD</i>	1008	0.097	0.0723	0.0923	0.6694	0.00003
	<i>CSCORE</i>	1008	−0.0323	−0.0168	0.1549	0.4966	−0.7050
	<i>MOWN</i>	1008	0.6592	0.7057	0.2202	0.9899	0.0286
	<i>BRDIND</i>	1008	0.6872	0.6	0.1755	1	0.2
	<i>HHI</i>	1008	0.7209	0.754	0.1707	0.9804	0.129
	<i>IOWN</i>	1008	0.7492	0.7869	0.1739	0.9985	0.1237
	<i>SIZE</i>	1008	14.2097	13.9682	1.7217	19.8089	8.5045
	<i>LEV</i>	1008	0.5697	0.575	0.2174	1.3425	0.0127
	<i>MB</i>	1008	8.4175	5.369	7.7595	29.7734	1.4459
	<i>CFO</i>	1008	0.1754	0.1577	0.1813	0.9204	−0.812
	<i>SALES</i>	1008	0.1734	0.1113	0.2168	1.9296	0.0032
Qualitative variables	Variables	Observations	CODE1		CODE0		Cumulative Abundance
			Frequency	Frequency%	Frequency	Frequency%	
	<i>MOWN</i>	1008	499	50%	509	50%	100%
	<i>BRDIND</i>	1008	861	85%	147	15%	100%
	<i>HHI</i>	1008	492	49%	516	51%	100%
	<i>IOWN</i>	1008	490	49%	518	51%	100%
	<i>LOSS</i>	1008	93	9%	917	91%	100%
	<i>AUD</i>	1008	859	85%	149	15%	100%
	<i>Fyaer</i>	1008	986	98%	22	2%	100%
	<i>Cperiod</i>	1008	6	1%	1002	99%	100%

In this study, the moderating variables such as managerial ownership, board independence, and ownership of large and institutional shareholders are considered dummy variables. The mean (or average) is a standard measure of central tendency calculated for each variable. The standard deviation (Std Dev.) indicates the average distance between the mean and each variable. The median shows the middle of the sample for all variables. The mean firm size (SIZE) is 14.2097, higher than the mean of other variables. The mean value of the Jones model is 0.1093, and the standard deviation is 0.10778.

Moreover, for the D.D. model, the mean value is 0.097, and the standard deviation is 0.0923. The mean value of the independent variable (SCORE) is -0.0323 , which is greater than the median (-0.0168). According to the findings, the minimum earnings quality based on the modified Jones model (1995) is 0.0001, and the maximum is 0.6901. For the earnings quality based on Dechow and Dichev's (2002) model, the minimum amount is 0.00003, and the maximum is 0.6694.

4.2. The Results of Testing Hypotheses

The results are shown in Tables 2–6 as follows:

4.2.1. The Results of Testing the First Hypothesis

The first hypothesis assumes that there is a direct and significant relationship between accounting conservatism and earning quality. The model that is used to test this hypothesis is presented below. Table 2 exhibits the results of this model.

$$\text{Earnings quality}_{it} = \alpha + \beta_1 \text{conservatism}_{it} + \beta_2 \text{SIZE}_{it} + \beta_3 \text{LEV}_{it} + \beta_4 \text{MB}_{it} + \beta_5 \text{LOSS}_{it} + \beta_6 \text{AUD}_{it} + \beta_7 \text{CFO}_{it} + \beta_8 \text{SALES} + \beta_9 \text{Fyear} + \beta_{10} \text{Cperiod} + \sum_{k=11}^{17} \beta_k \text{Industry} + e_{it}$$

The significance level of the two models modified by Jones and the D.D. model (lower than five percent) shows that these models are significant measures of earnings management. The significance level of conservatism (examined by modified Jones and D.D. models) shows a meaningful relationship between accounting conservatism and earning quality. The variable's coefficient based on the first model is -0.212 , and the second model is -0.147 . So, both models suggest a negative relationship between accounting conservatism and earnings quality. Therefore, H1 is not supported by these findings.

Table 2. The results of the first hypothesis model.

Independent Variable	Coefficient		Std. Dev.		T. Statistic		Sig.	
	Jones Model	DD Model	Jones Model	DD Model	Jones Model	DD Model	Jones Model	DD Model
Constants	0.035	0.067	0.0416	0.038	0.84	1.761	0.4033	0.078
Conservatism	-0.212	-0.147	0.0224	0.019	-9.49	-7.666	<0.001	<0.001
SIZE	0.003	-0.004	0.0023	0.002	-1.15	-2.012	0.2524	0.044
LEV	0.061	0.033	0.0175	0.015	3.5	2.11	0.0005	0.035
MB	0.002	0.002	0.0005	0	4.4	4.641	<0.001	<0.001
LOSS	0.058	0.089	0.0119	0.01	4.9	8.633	<0.001	<0.001
AUD	0.006	-0.004	0.0088	0.008	0.66	-0.521	0.5116	0.602
CFO	0.057	0.078	0.0193	0.017	2.94	4.644	0.0033	<0.001
SALES	0.029	0.034	0.0159	0.014	1.83	2.425	0.0672	0.015
Fyear	0.029	0.019	0.020362	0.024	1.1	0.795	0.2718	0.427
Cperiod	-0.01	-0.008	0.0445	0.039	-0.23	-0.207	0.8159	0.836

Table 2. Cont.

Independent Variable	Coefficient		Std. Dev.		T. Statistic		Sig.	
	Jones Model	DD Model	Jones Model	DD Model	Jones Model	DD Model	Jones Model	DD Model
<i>Industry effects</i>					<i>controlled</i>			
Adj. R-square (Jones model)		0.26			Adj. R-square DD model		0.26	
F statistic (Jones model)		344.8			Sig. (Jones model)		<0.001	
F statistic (DD model)		636.7			Sig. DD model		<0.001	

4.2.2. The Results of Testing the Second Hypothesis (Moderating Effect of Managerial Ownership)

The second hypothesis examines the moderating effect of managerial ownership on the relationship between accounting conservatism and earnings quality. The following model is used to test this hypothesis, and the results are shown in Table 3.

$$\text{Earnings quality}_{it} = \alpha + \beta_1 \text{conservatism}_{it} + \beta_2 \text{MOWN}_{it} + \beta_3 \text{conservatism}_{it} * \text{MOWN}_{it} + \beta_4 \text{SIZE}_{it} + \beta_5 \text{LEV}_{it} + \beta_6 \text{MB}_{it} + \beta_7 \text{LOSS}_{it} + \beta_8 \text{AUD}_{it} + \beta_9 \text{CFO}_{it} + \beta_{10} \text{SALES}_{it} + \beta_{11} \text{Fyear}_{it} + \beta_{12} \text{Cperiod}_{it} + \sum_{k=13}^{19} \beta_k \text{Industry}_{it} + e_{it}$$

The significance level of the two implemented models (0.0000) suggests that these two models are proper to examine H₂. The significance level of the effect of managerial ownership (as a moderating factor) in the modified Jones model is 0.325, and the coefficient of the variables is −0.038. So, the findings suggest that managerial ownership has a negative effect on the relationship between accounting conservatism and earnings quality, but this effect is not significant. Furthermore, the significance level of organisational ownership (as a moderating factor) based on the D.D. model is 0.298, and the coefficient is −0.035. So, the findings (based on the D.D. model) suggest that managerial ownership has no significant effect on the relationship between main variables. Therefore, these findings could not support the second hypothesis (H₂).

Table 3. The results of the second hypothesis model.

Independent Variable	Coefficient		Std. Dev.		T. Statistic		Sig.	
	Jones Model	DD Model	Jones Model	DD Model	Jones Model	DD Model	Jones Model	DD Model
Constants	0.039	0.066	0.042	0.038	0.937	17.22	0.349	0.085
Conservatism	−0.193	−0.127	0.031	0.026	−6.274	−4.806	<0.001	<0.001
MOWN	−0.005	0.005	0.007	0.006	−0.753	0.816	0.452	0.415
Conservatism MOWN	−0.038	−0.035	0.039	0.033	−0.985	−1.040	0.325	0.298
SIZE	−0.003	−0.004	0.002	0.002	−1.171	−2.080	0.242	0.038
LEV	0.063	0.031	0.018	0.015	3.565	2.005	<0.001	0.045
MB	0.002	0.002	0.000	0.000	4.372	4.507	<0.001	<0.001
LOSS	0.0196	0.0518	0.0109	0.0127	1.8041	4.0867	<0.001	<0.001
AUD	0.005	−0.003	0.009	0.008	0.604	−0.446	0.546	0.656
CFO	0.059	0.077	0.019	0.017	3.018	4.587	0.003	<0.001
SALES	0.029	0.035	0.016	0.014	1.797	2.461	0.072	0.014
Fyear	0.027	0.021	0.026	0.024	1.036	0.902	0.30	0.367
Cperiod	−0.011	−0.005	0.045	−0.039	−0.248	−0.13	0.804	0.896

Table 3. Cont.

Independent Variable	Coefficient		Std. Dev.		T. Statistic		Sig.	
	Jones Model	DD Model	Jones Model	DD Model	Jones Model	DD Model	Jones Model	DD Model
<i>Industry effects</i>					<i>controlled</i>			
Adj. R-square (Jones model)		0.265			Adj. R-square DD model		0.263	
F statistic (Jones model)		346.1			Sig. (Jones model)		0.0000	
F statistic (DD model)		638.8			Sig. (DD model)		0.0000	

4.2.3. The Results of Testing the Third Hypothesis (Moderating Effect of the Board Independence)

The third hypothesis assumes that the board of directors' independence has a negative and significant effect on the relationship between accounting conservatism and earnings quality. The following model is used to test this hypothesis, and the findings are displayed in Table 4.

$$\text{Earnings quality}_{it} = \alpha + \beta_1 \text{conservatism}_{it} + \beta_2 \text{BRDIND}_{it} + \beta_3 \text{conservatism}_{it} * \text{BRDIND}_{it} + \beta_4 \text{SIZE}_{it} + \beta_5 \text{LEV}_{it} + \beta_6 \text{MB}_{it} + \beta_7 \text{LOSS}_{it} + \beta_8 \text{AUD}_{it} + \beta_9 \text{CFO}_{it} + 10 \text{SALES} + \beta_{11} \text{Fyear} + \beta_{12} \text{Cperiod} + \sum_{k=13}^{19} \beta_k \text{Industry} + e_{it}$$

Table 4. The results of the third hypothesis model.

Independent Variable	Coefficient		Std. Dev.		T. Statistic		Sig.	
	Jones Model	DD Model	Jones Model	DD Model	Jones Model	DD Model	Jones Model	DD Model
Constants	0.034	0.07	0.042	0.039	0.799	1.801	0.425	0.072
Conservatism	−0.013	−0.026	0.054	0.046	−0.238	−0.559	0.812	0.576
BRDIND	−0.011	−0.013	0.010	0.009	−1.190	−1.538	0.234	0.124
Conservatism BRDIND	−0.229	−0.139	0.056	0.048	−4.084	−2.878	<0.001	0.004
SIZE	−0.003	−0.004	0.002	0.002	−1.091	−1.997	0.275	0.046
LEV	0.062	0.032	0.018	0.015	3.532	2.047	<0.001	0.041
MB	0.002	0.002	0.0003	0.000	4.511	4.703	<0.001	<0.001
LOSS	0.049	0.083	0.012	0.010	4.081	7.996	<0.001	<0.001
AUD	0.007	−0.003	0.009	0.008	0.793	−0.405	0.428	0.685
CFO	0.054	0.075	0.019	0.017	2.805	4.512	0.005	<0.001
SALES	0.026	0.032	0.016	0.014	1.613	2.261	0.107	0.024
Fyear	0.031	0.023	0.027	0.024	1.167	0.952	0.243	0.341
Cperiod	−0.005	−0.003	0.044	0.039	−0.122	−0.065	0.903	0.948
<i>Industry effects</i>					<i>controlled</i>			
Adj. R-square (Jones model)		0.27			Adj. R-square DD model		0.265	
F statistic (Jones model)		363.3			Sig. (Jones model)		0.000	
F statistic (DD model)		647.6			Sig. DD model		0.000	

The significance level of interactive variables of board independence and Conservatism (Conservatism* BRDIND) for the modified Jones model is lower than 0.001. The D.D. model is 0.004 (as presented in Table 4). Moreover, the coefficient of the variables based on both models is −0.229 and −0.139 accordingly. The findings show that board independence has

a significant and negative effect on the relationship between accounting conservatism and earnings quality. The results further suggest that the severity of such a negative relationship may have been increased because of board independence (based on the modified Jones model but not based on the D.D. model). So, the findings provide supporting evidence for H₃ based on the modified Jones model but not based on the D.D. model.

4.2.4. The Results of Testing the Fourth Hypothesis (Moderating Effect of the Ownership of Large Shareholders)

The fifth hypothesis proposes that the ownership of large shareholders (as a moderating variable) has a negative and significant effect on the relationship between accounting conservatism and earnings quality. To test this hypothesis, the following model is used, and the results of this model are presented in Table 5.

$$\text{Earnings quality}_{it} = \alpha + \beta_1 \text{conservatism}_{it} + \beta_2 \text{HHI}_{it} + \beta_3 \text{conservatism}_{it} * \text{HHI}_{it} + \beta_4 \text{SIZE}_{it} + \beta_5 \text{LEV}_{it} + \beta_6 \text{MB}_{it} + \beta_7 \text{LOSS}_{it} + \beta_8 \text{AUD}_{it} + \beta_9 \text{CFO}_{it} + 10 \text{SALES} + \beta_{11} \text{Fyear} + \beta_{12} \text{Cperiod} + \sum_{k=13}^{19} \beta_k \text{Industry} + e_{it}$$

Table 5. The results of the fourth hypothesis model.

Independent Variable	Coefficient		Std. Dev.		T. Statistic		Sig.	
	Jones Model	DD Model	Jones Model	DD Model	Jones Model	DD Model	Jones Model	DD Model
Constants	0.041	0.073	0.041	0.038	0.991	1.939	0.322	0.053
Conservatism	−0.16	−0.101	0.029	0.025	−5.514	−4.037	<0.001	<0.001
HHI	−0.008	0.005	0.007	0.006	−1.187	0.926	0.235	0.354
Conservatism HHI	−0.110	−0.009	0.038	0.033	−2.875	−2.751	0.004	0.006
SIZE	−0.003	−0.005	0.002	0.002	−1.277	−2.305	0.202	0.021
LEV	0.065	0.031	0.018	0.015	3.71	2.036	<0.001	<0.001
MB	0.002	0.002	0.000	0.000	4.371	4.449	<0.001	<0.001
LOSS	0.024	0.055	0.0109	0.0127	2.2048	4.3452	0.0277	0.000
AUD	0.006	−0.003	0.009	0.008	0.704	−0.359	0.482	0.719
CFO	0.057	0.075	0.019	0.017	2.936	4.488	0.003	<0.001
SALES	0.027	0.034	0.016	0.014	1.738	2.421	0.082	0.015
Fyear	0.029	0.02	0.026	0.023	1.097	0.859	0.273	0.39
Cperiod	−0.011	−0.004	0.044	0.039	−0.252	−0.101	0.801	0.919
Industry effects					controlled			
Adj. R-square (Jones model)	0.27				Adj. R-square DD model		0.27	
F statistic (Jones model)	353.5				Sig. (Jones model)		0.0000	
F statistic (DD model)	646.2				Sig. DD model		0.0000	

The significance level of interactive variables of large shareholders and conservatism (*Conservatism* HHI*) for the modified Jones model is 0.004, and for the D.D. model is 0.006. The coefficient of interactive variables for the Jones and D.D. models is −0.110 and −0.009, respectively. So, the findings suggest an adverse effect of large shareholders on the relationship between accounting conservatism and earning quality. The results indicate that the moderating effect of large shareholders on the relation between accounting conservatism and earnings quality reduces the severity of the negative relationship between them under both models. So, the findings provide supporting evidence for H₄.

4.2.5. The Results of Testing the Fifth Hypothesis (Moderating Effect of the Institutional Ownership)

The last hypothesis proposes that institutional ownership in a firm (as a moderating variable) negatively affects the relationship between accounting conservatism and earning quality. The findings of testing this hypothesis are shown in Table 6. The model used to test this hypothesis is presented below:

$$\text{Earnings quality}_{it} = \alpha + \beta_1 \text{conservatism}_{it} + \beta_2 \text{IOWN}_{it} + \beta_3 \text{conservatism}_{it} * \text{IOWN}_{it} + \beta_4 \text{SIZE}_{it} + \beta_5 \text{LEV}_{it} + \beta_6 \text{MB}_{it} + \beta_7 \text{LOSS}_{it} + \beta_8 \text{AUD}_{it} + \beta_9 \text{CFO}_{it} + 10 \text{SALES} + \beta_{11} \text{Fyear} + \beta_{12} \text{Cperiod} + \sum_{k=13}^{19} \beta_k \text{Industry} + e_{it}$$

Table 6. The results of the fifth hypothesis model.

Independent Variable	Coefficient		Std. Dev.		T. Statistic		Sig.	
	Jones Model	DD Model	Jones Model	DD Model	Jones Model	DD Model	Jones Model	DD Model
Constants	0.038	0.071	0.042	0.038	0.918	1.857	0.359	0.063
Conservatism	−0.178	−0.117	0.028	0.024	−6.354	−4.853	<0.001	<0.001
IOWN (Institutional Shareholders)	−0.010	−0.001	0.007	0.006	−1.524	−0.151	0.127	0.88
Conservatism IOWN	−0.081	−0.066	0.039	0.033	−2.096	−2.011	0.036	0.044
SIZE	−0.003	−0.004	0.002	0.002	−1.144	−2.152	0.253	0.031
LEV	0.066	0.034	0.018	0.015	3.741	2.164	<0.001	0.03
MB	0.002	0.002	0.0004	0.0004	4.429	4.599	<0.001	<0.001
LOSS	0.055	0.087	0.012	0.01	4.656	8.487	<0.001	<0.001
AUD	0.006	−0.003	0.009	0.008	0.682	−0.411	0.495	0.681
CFO	0.057	0.076	0.019	0.017	2.975	4.553	0.003	<0.001
SALES	0.028	0.033	0.016	0.014	1.741	2.372	0.082	0.018
Fyear	0.028	0.02	0.026	0.024	1.056	0.842	0.291	0.4
Cperiod	−0.014	−0.008	0.044	0.039	−0.310	−0.211	0.756	0.833
Industry effects					controlled			
Adj. R-square (Jones model)		0.27			Adj. R-square DD model		0.265	
F statistic (Jones model)		350.6			Sig. (Jones model)		0.0000	
F statistic DD model		640.8			Sig. DD model		0.0000	

The significance level of interactive variables of institutional ownership (as shareholders) and conservatism (*Conservatism***IOWN*) for the modified Jones model is 0.036. The D.D. model is 0.044, suggesting that institutional ownership significantly affects the relationship between accounting conservatism and earning quality. The coefficient of interactive variables for the Jones model is 0.081, and for the D.D. model is −0.066. So, the findings indicate that institutional ownership has a negative effect on the relationship between accounting conservatism and earnings quality. These results suggest that institutional ownership's moderating and interactive impact (on the relation between accounting conservatism and earnings quality) reduces the severity of the negative relationship between them under both models. So, the findings support H₅.

Research on the relationship between accounting conservatism and earnings quality has produced inconsistent, mixed, and to some degree, even contradictory results (Crockett and Jahangir 2015; Zeghal and Lahmar 2018; Zhang et al. 2019; Lim 2011). For example, Utomo et al. (2018) report a positive relationship between accounting conservatism and quality of earnings, while Penman and Zhang (2002) and Veronica (2013) show a negative relationship between accounting conservatism and earnings quality. Caskey and Laux

(2017) suggest that conservatism can lead managers to manipulate accounting information and distort the quality of earnings.

However, the adjusted R² for anticipating earnings quality based on both models described in the paper is lower than 30% (in Tables 2–6), considering various contextual factors (including conservatism factors). The results suggest that all influential factors included in the models can explain only less than 30% of changes in earning quality. So, there must be some other contextual factor/s that might be able to explain the remaining (more than 70%) of changes in earning quality. Further research is recommended to address and investigate the impact of other relevant contextual factors on earnings quality.

5. Conclusions

The study on the relationship between accounting conservatism and earnings quality is not new. However, the results are inconsistent and mixed and even contradictory to some degree. This study aims to provide some explanations for these mixed results in the literature by investigating the effect of corporate governance mechanisms, as a moderator variable, on the relationship between accounting conservatism and earnings quality based on Dechow and Dichev model and the modified Jones model. The findings suggest that the corporate governance mechanisms and the selected models (Dechow and Dichev model and the modified Jones model) can have a moderating impact on the relationship between accounting conservatism and earnings quality.

The findings suggest a significant and negative relationship between accounting conservatism and earning quality. These findings imply that despite using various conservative accounting methods to prevent management from overstating earnings, firms with more conservative procedures are more likely to report earnings with lower quality. One possible reason for such a relationship is that using conservative practices may create some distrust for the users of financial statements (and might be regarded as manipulation of earnings figures).

The findings suggest no significant effect for managerial ownership on the relationship between conservatism and earnings quality under two models (modified Jones and D.D. models). However, the results show that the board's independence significantly affects the relationship between accounting conservatism and quality and increases the severity. The findings further support the view that the ownership of the large shareholders could moderate the relationship between accounting conservatism and earnings quality.

The moderating effect of board independence increases the severity of the negative relationship between these variables based on the modified Jones model and reinforces this negative relationship. However, it has no considerable effect on this relationship under the D.D. model. This study suggests that the existence of board independence (as a moderating factor) could reinforce the existed relation between accounting conservatism and earnings quality (based on the modified Jones model).

Moreover, the findings suggest that institutional has a significant moderating effect on the relationship between accounting conservatism and earnings quality and reduces the severity of the negative relationship between these variables. Organisations can use the findings to improve the quality of their earnings. Firms can further use the results to provide additional assurance for the stakeholders and the community regarding the quality of earnings reported in their financial reports.

The present study is subject to some limitations. The most important limitation is that most targeted populations have been under strict economic and financial restrictions because of the monetary sanction. The second limitation is the country's very high inflation rate (two digits for more than 40 years). Furthermore, 469 observations could be considered too few to draw a general conclusion in this study. The information used in this study is related to forms' financial statements for the periods 2012 to 2017, which is the pre-COVID-19 period. Further studies are recommended to include information during and after the COVID-19 period. Furthermore, we used two models (the modified Jones model (1995) and the Dechow and Dichev model) in this study; other models such as Basu's model

and Ball and Shivakumar's model can be used to measure conditional conservatism in future studies to see if they produce the same results. Therefore, generalizing the findings to other markets may not be very applicable. However, we believe this limitation had no significant impact on the validity and reliability of the models and the obtained results.

Future researchers can also measure other aspects of earnings quality, such as earnings persistence and earnings predictability. Moreover, the interactive effects of different corporate governance mechanisms such as CEO duality, independent auditor, board size, and internal audit can be further investigated in terms of the relationship between conservatism and earnings quality.

Author Contributions: Conceptualization, methodology, software, validation, formal analysis, investigation, resources, data curation, writing—original draft preparation: F.N.Z. and S.A.A.; writing—review and editing and revision, and administration: D.A. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Tehran Stock Exchange (seinitiative.org accessed on 14/09/2018).

Conflicts of Interest: The authors declare no conflict of interest.

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