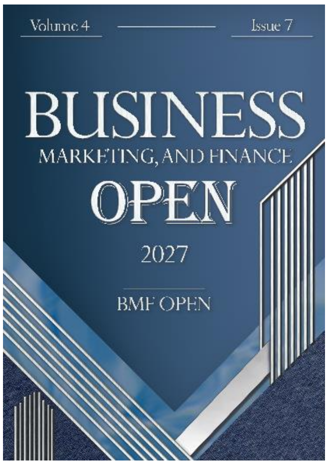
# The Role of Dual Holders in Enhancing Information Transparency: An Analysis of Their Impact on Accounting Information Disclosure with Emphasis on the Moderating Role of Corporate Governance

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**Abstract:** The purpose of this study is to examine the effect of dual holders on accounting information disclosure, with particular emphasis on the moderating role of corporate governance monitoring mechanisms. Accounting information disclosure, as one of the most important mechanisms for reducing information asymmetry and enhancing capital market transparency, plays a critical role in investors' decision-making. In this context, dual holders—investors who simultaneously hold both the equity and debt of a firm—may exert a substantial influence on corporate disclosure policies because of their access to private information and their enhanced influence over management. The statistical population of the study consisted of 105 companies listed on the Tehran Stock Exchange during the period 2015–2023. The data were analyzed using panel-data techniques and multivariate regression models. The findings indicate that dual holders have a positive and significant effect on accounting information disclosure; specifically, as the ownership concentration of dual holders increases, the quality of information disclosure improves. The results further demonstrate that corporate governance monitoring mechanisms significantly strengthen the positive effect of dual holders on information disclosure. These findings suggest that, when accompanied by an effective corporate governance system, dual holders can function as a complementary monitoring mechanism that enhances corporate information transparency and reduces information asymmetry. Based on the findings, it is recommended that capital market policymakers strengthen corporate governance mechanisms and improve the transparency of ownership structures in order to facilitate more effective utilization of the monitoring capacity of dual holders.

**Keywords:** dual holders, accounting information disclosure, corporate governance, information transparency, Tehran Stock Exchange.

## 1. Introduction

The quality and transparency of corporate information are fundamental components of efficient capital markets and effective corporate decision-making. Investors, creditors, regulators, analysts, and other stakeholders depend on financial and nonfinancial disclosures to assess firms' economic performance, risk exposure, financial position, and future prospects. When firms provide timely, relevant, reliable, and sufficiently comprehensive information, market participants are better able to evaluate investment opportunities and allocate resources efficiently. Conversely, weak disclosure practices can intensify information asymmetry, increase uncertainty, impair the pricing of securities, and provide managers with greater opportunities to conceal unfavorable information or pursue private interests. Financial reporting quality is therefore not merely an accounting concern but also an important dimension of corporate governance, capital market efficiency, and managerial accountability. The reliability and usefulness of accounting information are particularly important when markets face uncertainty or when managers possess information that is unavailable to outside stakeholders [1-3].

Accounting information disclosure constitutes one of the principal mechanisms through which firms reduce information asymmetry between insiders and external capital providers. High-quality disclosure enables investors to better distinguish firms with strong economic fundamentals from those with poor prospects and reduces the informational advantage enjoyed by management. It may also facilitate more accurate assessment of earnings quality, cash-flow sustainability, investment efficiency, and financial risk. Within the Iranian capital market, disclosure quality has similarly attracted considerable attention because of its implications for investors' ability to evaluate listed companies. Previous evidence from companies listed on the Tehran Stock Exchange indicates that firm-specific characteristics, ownership structures, and monitoring mechanisms can influence the extent and quality of corporate disclosure [4-6]. Moreover, higher-quality disclosure has been associated with improved stock liquidity, emphasizing that corporate transparency can affect not only information users but also broader market functioning [7].

The concept of disclosure quality is closely connected to the broader quality of financial reporting. Financial reports are intended to represent economic events in a manner that enables users to make informed decisions, yet managerial discretion in recognition, measurement, estimation, and reporting can affect the reliability of reported accounting numbers. One important stream of accounting research has therefore focused on accrual quality and discretionary accruals as indicators of reporting quality. The performance-matched discretionary accrual framework developed by Kothari et al. provides a widely used basis for assessing abnormal accrual behavior and the informational quality of accounting reports [8]. Related Iranian research has also employed accounting-quality concepts to investigate audit quality, investment efficiency, and the credibility of financial information [9]. Such approaches are especially relevant when disclosure quality is viewed not only as the quantity of information released but also as the reliability and informativeness of the accounting numbers communicated to the market.

The importance of disclosure extends beyond shareholders because accounting information is also central to debt contracting and creditor monitoring. Creditors use financial statements to assess default risk, determine contractual terms, establish covenants, and monitor borrowers throughout the lending relationship. Firms with higher accounting quality can potentially reduce information problems in debt markets and support more efficient contracting between borrowers and lenders [10]. Private lending arrangements may further provide creditors with access to information that is not immediately available to public-market investors. Research on syndicated lending shows that loan-market participants can acquire and disseminate private information, thereby contributing to price discovery across capital markets [11]. Contractual arrangements can also formally facilitate creditors' access to borrower-specific private information, reinforcing the informational role of lending relationships [12].

The simultaneous participation of institutional investors in both equity and debt markets introduces an especially important governance and information environment. Such investors, commonly described as **dual holders**, simultaneously hold a firm's equity securities and debt claims. Unlike conventional shareholders, who are primarily concerned with increasing equity value, or creditors, who generally emphasize downside protection and repayment capacity, dual holders possess claims that expose them to both the upside potential of equity and the downside risk associated with debt. This combined position can provide distinctive incentives to monitor managerial behavior, obtain private information, and influence corporate policies. Early evidence on simultaneous equity and debt ownership demonstrates that nonbank institutional investors holding both types of claims may exert meaningful effects on firms because their dual financial interests modify the traditional separation between shareholders and creditors [13].

Dual holders may enjoy informational advantages arising from their participation in lending relationships. Institutional investors involved in loan markets can obtain borrower-specific information that may subsequently influence their equity-market decisions. Evidence that institutional investors trade stocks based on information generated through lending markets illustrates the informational connections between debt and equity ownership [14]. Similarly, hedge funds participating in syndicated loans appear capable of benefiting from private information acquired through their credit relationships, demonstrating the potentially important informational advantages associated with simultaneous participation in different corporate securities [15]. These findings suggest that dual holders may be particularly well positioned to assess firms' underlying financial condition and to demand information that is more timely, reliable, and decision-useful.

The influence of dual holders, however, extends beyond information acquisition. Holding both debt and equity may also strengthen investors' ability to monitor management and affect corporate decisions. Strong relationships between borrowing firms and financial institutions can shape firms' capital structures and other financial choices, indicating that creditors with substantial informational and economic exposure may exercise meaningful influence over management [16]. More directly, simultaneous equity ownership by creditors has been shown to affect firms' investment policies and the role of debt covenants, suggesting that dual ownership can alter managerial incentives and corporate decision-making [17]. Evidence concerning corporate tax avoidance likewise indicates that simultaneous debt-equity holdings may influence managerial policies through monitoring and incentive channels [18]. These studies collectively indicate that dual holders should be considered active governance participants rather than passive providers of capital.

A particularly relevant implication of dual ownership concerns financial reporting quality and corporate disclosure. Because dual holders possess economic interests on both sides of the capital structure, they may value high-quality accounting information for multiple purposes, including evaluating equity performance, monitoring credit risk, enforcing contractual protections, and assessing management's actions. Research has documented a relationship between dual holdings of debt and equity and financial reporting quality, suggesting that these investors can affect the quality of information produced by firms [19]. Subsequent evidence indicates that dual holders are also associated with firms' voluntary disclosure behavior, supporting the proposition that their monitoring incentives can extend directly to disclosure policies [20]. More recent evidence concerning institutional dual holders further demonstrates the importance of these investors in shaping corporate disclosure, strengthening the theoretical expectation that simultaneous debt-equity ownership can improve the corporate information environment [21].

Institutional ownership more generally has long been regarded as an important determinant of corporate transparency. Large institutional investors typically possess greater expertise, analytical capacity, and economic incentives to monitor management than dispersed individual investors. Evidence suggests that institutional ownership can increase firm transparency and stimulate information production, thereby improving the information available to market participants [22]. Institutional investors may also constrain opportunistic earnings management because their monitoring capabilities make managerial manipulation more difficult [23]. In addition, institutional investors and outside directors have been associated with properties of management earnings forecasts, indicating that ownership and board monitoring structures can affect managers' disclosure decisions [24]. Evidence from the Tehran Stock Exchange similarly shows that institutional ownership can contribute to higher information disclosure quality [25]. Dual holders may therefore represent an especially influential subset of institutional investors because they combine the conventional monitoring advantages of institutional ownership with additional information and control channels arising from their creditor status.

Nevertheless, the effectiveness of investor monitoring is unlikely to be independent of a firm's broader corporate governance environment. Corporate governance establishes the mechanisms through which managers are directed, controlled, and held accountable to providers of capital and other stakeholders. Effective governance structures can constrain opportunistic managerial behavior, improve oversight, strengthen internal controls, enhance the credibility of financial statements, and promote more transparent reporting practices. Corporate governance has therefore become an important explanatory factor in research on disclosure and financial reporting quality. Evidence from international settings indicates a positive relationship between corporate governance arrangements and financial reporting transparency [26], while evidence obtained during the COVID-19 pandemic suggests that governance quality can remain important for preserving financial reporting quality even under conditions of severe economic uncertainty [27].

The Iranian corporate environment provides additional evidence of the importance of governance mechanisms. Corporate governance in Iran has developed as an institutional framework intended to strengthen managerial accountability, protect stakeholder interests, and enhance the reliability of corporate reporting [28]. Empirical research has documented relationships between governance mechanisms and earnings management, suggesting that stronger monitoring structures can reduce managerial discretion over financial reporting [29]. Governance arrangements have also been examined in relation to the efficiency of working capital management, further demonstrating their role in shaping managerial financial decisions [30]. Most importantly for the present study, evidence from companies listed on the Tehran Stock Exchange indicates that corporate governance mechanisms are associated with the quality of information disclosure [31].

Contemporary research has further emphasized that the effectiveness of governance depends not simply on the formal existence of governance structures but also on their actual monitoring quality and interaction with managerial conduct. Weak ethical behavior among managers can undermine governance systems and financial reporting quality, indicating that formal controls may be insufficient when managerial incentives favor opacity or opportunism [32]. Similarly, the relationship between corporate governance and financial reporting quality may be affected by financial misconduct, suggesting that governance mechanisms operate within a broader behavioral and institutional context [33]. Recent evidence from the Tehran Stock Exchange also highlights the importance of corporate governance factors in conjunction with information disclosure for broader corporate and economic outcomes [34]. Accordingly, the consequences of ownership structures such as dual holdings should be examined jointly with governance mechanisms rather than in isolation.

From a complementary-monitoring perspective, strong governance mechanisms and dual holders may reinforce one another. Independent and non-executive directors, separation of the chief executive officer and board chair positions, institutional ownership, auditor quality, and other governance characteristics can increase managerial accountability and create organizational conditions in which sophisticated investors can exercise their monitoring influence more effectively. Dual holders may possess valuable private information and strong incentives to demand transparency, but their ability to transform these advantages into improved disclosure may depend on whether corporate governance arrangements provide effective channels for oversight. Conversely, governance systems may become more effective when influential capital providers actively use disclosed and privately acquired information to evaluate managerial performance. This complementarity suggests that corporate governance monitoring mechanisms may strengthen the positive relationship between dual holders and accounting information disclosure.

The need for effective information monitoring is particularly pronounced when firms face financial uncertainty. Financial distress can intensify incentives for managers to manipulate reporting or delay the disclosure of adverse information, while investors and creditors simultaneously become more dependent on reliable accounting information. Iranian research on bankruptcy prediction has demonstrated the relevance of firm-specific financial distress measures for assessing corporate financial health [35]. Financial characteristics and ownership structures may also influence the timeliness of financial reporting, implying that disclosure outcomes are shaped by both economic conditions and governance characteristics [36]. These considerations support the inclusion of financial distress, leverage, profitability, firm size, growth, ownership, and market-related characteristics when assessing the independent effect of dual holders on disclosure.

Disclosure decisions may additionally reflect the legal and external monitoring environment surrounding the firm. Managers consider potential benefits and costs when deciding how much information to provide, and these incentives may vary according to litigation exposure, investor scrutiny, proprietary costs, and the materiality of information. Research demonstrates that litigation risk can meaningfully influence corporate disclosure behavior [37], while materiality considerations interact with voluntary disclosure incentives in determining firms' reporting decisions [2]. In emerging capital markets, where ownership may be more concentrated and external information intermediaries less developed than in mature markets, these incentives make the presence of sophisticated monitors particularly consequential. Dual holders can potentially reduce the need for purely external enforcement by creating an additional market-based mechanism through which management is pressured to provide credible information.

Despite the growing literature on dual ownership, several important issues remain unresolved. Much of the foundational evidence on dual holders has been developed in mature financial markets characterized by extensive institutional ownership, well-developed syndicated loan markets, sophisticated information intermediaries, and relatively strong legal enforcement [13, 19-21]. The extent to which these findings apply to the Tehran Stock Exchange cannot be assumed. Differences in ownership concentration, governance practices, institutional investor behavior, financing structures, regulatory enforcement, and the accessibility of corporate information may alter both the incentives of dual holders and their capacity to influence disclosure. Existing Iranian research has extensively studied disclosure quality, institutional ownership, governance, firm characteristics, reporting timeliness, and market consequences of transparency, but the specific role of simultaneous debt-equity holders has received comparatively limited attention [5, 6, 25, 31, 36].

A second gap concerns the interaction between dual holders and corporate governance. Prior studies provide persuasive evidence that dual holders can affect reporting, disclosure, investment, and other corporate policies, while a separate literature demonstrates that corporate governance can enhance reporting transparency and constrain managerial opportunism. Yet treating these two monitoring mechanisms independently may overlook an important feature of the corporate information environment. The influence of dual holders may be stronger where governance mechanisms facilitate monitoring, reduce managerial entrenchment, and strengthen the credibility of financial reporting. Conversely, weak governance may limit the capacity of even highly informed investors to improve public disclosure. Examining corporate governance as a moderating mechanism can therefore provide a more comprehensive explanation of when and under what organizational conditions dual ownership contributes to information transparency.

This issue is important for managers, investors, creditors, regulators, and policymakers. For corporate managers, understanding the disclosure consequences of dual ownership can clarify how capital structure and ownership relationships affect expectations for transparency. For shareholders and creditors, the findings can indicate whether dual holders function as effective monitors whose presence improves the information environment. For regulators of the Tehran Stock Exchange, evidence on the interaction between dual holders and governance can assist in designing policies that strengthen ownership transparency, institutional monitoring, and corporate disclosure standards. More broadly, identifying complementary governance mechanisms may contribute to reducing information asymmetry, improving the credibility of accounting information, supporting more efficient capital allocation, and enhancing confidence in the capital market.

Accordingly, the aim of this study is to examine the effect of dual holders on accounting information disclosure among companies listed on the Tehran Stock Exchange and to determine whether corporate governance monitoring mechanisms strengthen this relationship.

## 2. Methodology

### *2.1. Research Type*

In terms of its nature, this study is correlational because it examines the relationships among the research variables using regression models. In terms of purpose, it is also classified as applied research because, through the application of existing models, methods, and theories, it seeks to solve problems or improve decision-making within the research domain.

### *2.2. Statistical Population and Sample*

The statistical population of this study consisted of companies listed on the Tehran Stock Exchange during the period 2015–2023. The systematic elimination method was used to select the sample. The sample selection criteria were as follows:

1. To ensure the comparability of information, the companies' fiscal year had to end at the end of Esfand, corresponding approximately to March 20/21.
2. To ensure the homogeneity of information, banks, financial and credit institutions, insurance companies, and leasing companies were excluded.
3. During the study period, the company's shares had to have been traded at least once every three months.
4. The company must not have changed its fiscal year during the study period.
5. The information required to calculate the variables selected for this study had to be available.

After applying the above restrictions, 105 companies were selected as the final sample.

### *2.3. Data Collection Instruments and Procedures*

The library research method was used to develop the theoretical literature and review the research background. Documentary analysis was employed to collect the data required to calculate the study variables. For this purpose, information published by the Tehran Stock Exchange, audited financial statements and accompanying explanatory notes, and the Rahavard Novin financial information software constituted the principal sources of data.

### 2.4. *Research Variables*

#### 2.4.1. *Dependent Variable: Accounting Information Disclosure (Disclosure)*

In this study, the model proposed by Kothari et al. (2005) was used to measure accounting information disclosure. The model is presented in Equation (1).

Accounting information disclosure (Disclosure): Some studies, such as Saghafi and Motamedi Fazel (2011) and Zamani et al. (2020), have used the accrual quality measure proposed by Kothari et al. (2005) to measure the quality of accounting information disclosure. Accordingly, in the present study, accounting information disclosure is measured using the model of Kothari et al. (2005), as specified in Equation (1):

**Equation (1)**

$$\frac{TCA_{it}}{Assets_{it}} = \beta_0 + \beta_1 \frac{CFO_{it-1}}{Assets_{it}} + \beta_2 \frac{CFO_{it}}{Assets_{it}} + \beta_3 \frac{CFO_{it+1}}{Assets_{it}} + \varepsilon_{it}$$

where:

$TCA_{it}$: total accruals, calculated as operating income minus operating cash flow, for firm $i$ in year $t$;

$Assets_{it}$: total assets of firm $i$ in year $t$;

$CFO_{it-1}$: operating cash flow of firm $i$ in year $t-1$;

$CFO_{it}$: operating cash flow of firm $i$ in year $t$;

$CFO_{it+1}$: operating cash flow of firm $i$ in year $t+1$.

#### 2.4.2. *Independent Variable*

**Dual Holders (DUAL).** To calculate the dual-holder variable, the Herfindahl–Hirschman Index (HHI) was employed in accordance with Tang et al. (2022). The calculation procedure was as follows:

1. The percentage ownership of dual holders was calculated, with values ranging from 0 to 100%. Information on dual holders was extracted from board of directors' reports and the notes accompanying the financial statements.
2. The cumulative industry average for dual holders was calculated.
3. The ratio of the company's dual-holder ownership to the cumulative industry average was calculated and squared, as shown in Equation (2):

**Equation (2)**

$$HHI = \sum_{i=1}^{N} \left(\frac{s_i}{S}\right)^2$$

where:

$HHI$: Herfindahl–Hirschman Index;

$s_i$: percentage ownership held by the company's dual holders;

$S$: cumulative industry average of dual-holder ownership.

The calculated percentage of dual-holder ownership was compared with the industry median. If the calculated value was greater than the industry median, the firm was classified as a high-dual-holder firm (HIGHDUAL); otherwise, it was classified as a low-dual-holder firm (LOWDUAL).

#### 2.4.3. *Moderating Variable*

**Corporate Governance Monitoring Mechanisms (GOV).** To calculate the corporate governance monitoring mechanisms index, six factors were employed based on Nikoomaram and Mohammadzadeh Salteh (2010) and Hashemi and Younesi (2013):

1. Separation of the positions of chief executive officer and chair of the board of directors: coded 1 if the positions are separated and 0 otherwise.
2. Proportion of non-executive board members: coded 1 if the proportion is above the sample mean and 0 otherwise.
3. Share ownership held by institutional investors: coded 1 if there are three institutional shareholders whose combined ownership exceeds 50%, and 0 otherwise.
4. Subsidiary status of the company: coded 1 if more than 50% of the company's shares are owned by another company and 0 otherwise.
5. Degree of government influence and ownership: coded 1 if the government owns more than 20% of the company's shares and 0 otherwise.
6. Auditor type: coded 1 if the company is audited by the Audit Organization or by a large Grade-A audit firm and 0 otherwise.

The final corporate governance index was calculated using Equation (3):

**Equation (3)**

$$GINDEX = \frac{\sum d}{\sum h}$$

In this equation, $\sum d$ represents all items assigned a score of 1, whereas $\sum h$ represents the total number of items for which values of either 0 or 1 were assigned. In other words, in Equation (11), the numerator is a value ranging from 0 to 6, while the denominator is equal to 6. Thus, the corporate governance index calculated for each company ranges from 0 to 1.

#### 2.4.4. *Control Variables*

The control variables employed in this study were as follows:

**Financial Leverage (LEV):** The ratio of total liabilities to total assets.

**Market-to-Book Ratio (MTB):** The ratio of the market value of equity—calculated as the number of outstanding shares multiplied by the market price per share—to the book value of equity.

**Profitability (ROA):** The ratio of net income to total assets.

**Firm Size (SIZE):** The natural logarithm of the market value of equity.

**Sales Growth (GSales):** Current-year sales minus previous-year sales, divided by previous-year sales.

**Institutional Ownership (Inst.Ownership):** The percentage of the company's shares held by institutional shareholders. According to the definition provided in Paragraph 27 of Article 1 of the Securities Market Act of the Islamic Republic of Iran, any natural or legal person who purchases more than 5% of the securities being issued or securities with a nominal value exceeding IRR 5 billion is classified as an institutional investor (Mastaneh & Pakmaram, 2016).

**Stock Return Volatility (Volatility):** The standard deviation of stock returns over a three-year period.

**Financial Distress (Z-score):** In this study, financial distress was measured in accordance with Nasirzadeh and Marandi (2021), using the localized model developed by Kordestani and Tatli (2014), as presented in Equation (12). In this equation, the $Z$-score is an inverse measure of financial distress; a higher (lower) value indicates greater financial health (greater financial distress). Consequently, the values obtained from this measure are multiplied by $-1$.

**Equation (4)**

$$Z\text{-}score_{it} = 0.626\frac{RE_{it}}{TA_{it}} + 0.137\frac{OI_{it}}{TA_{it}} + 0.679\frac{NI_{it}}{TA_{it}} - 0.583\frac{TL_{it}}{TA_{it}}$$

where:

$FD_{it}$: financial distress of firm $i$ in year $t$;

$TA_{it}$: total assets of firm $i$ in year $t$;

$RE_{it}$: retained earnings of firm $i$ in year $t$;

$OI_{it}$: operating income of firm $i$ in year $t$;

$NI_{it}$: net income of firm $i$ in year $t$;

$TL_{it}$: total liabilities of firm $i$ in year $t$;

Firm FE: firm fixed effects;

Year FE: year fixed effects.

### 2.5. Research Models

To test the research hypotheses, multivariate regression models were estimated using panel-data techniques.

**Model 1: Testing Hypothesis 1**

**Equation (5)**

$$\begin{gathered} Disclosure_{it} = \beta_0 + \beta_1 DUAL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \beta_4 MTB_{it} \\ +\beta_5 GSales_{it} + \beta_6 \text{Inst. Ownership}_{it} + \beta_7 ROA_{it} + \beta_8 \text{Volatility}_{it} \\ +\beta_9 Z\text{-}score_{it} + \text{Firm FE} + \text{Year FE} + \varepsilon_{it} \end{gathered}$$

**Model 2: Testing Hypothesis 2**

**Equation (6)**

$$\begin{gathered} Disclosure_{it} = \beta_0 + \beta_1 DUAL_{it} + \beta_2 GOV_{it} + \beta_3 (DUAL_{it} \times GOV_{it}) \\ +\beta_4 SIZE_{it} + \beta_5 LEV_{it} + \beta_6 MTB_{it} + \beta_7 GSales_{it} \\ +\beta_8 \text{Inst. Ownership}_{it} + \beta_9 ROA_{it} + \beta_{10} \text{Volatility}_{it} \\ +\beta_{11} Z\text{-}score_{it} + \text{Firm FE} + \text{Year FE} + \varepsilon_{it} \end{gathered}$$

### 2.6. Statistical Methods

The Limer F-test and Hausman test were used to determine the appropriate panel-data specification. To examine the assumptions of the classical regression model, the Wooldridge test was used to detect autocorrelation, while the Wald test was employed to examine heteroskedasticity. When autocorrelation or heteroskedasticity was present, the generalized least squares (GLS) method was used to estimate the models. The overall significance of each model was assessed using the $F$-statistic, while the statistical significance of individual regression coefficients was evaluated using the $t$-statistic.

## 3. Findings and Results

Table 1 presents the descriptive statistics for the research variables.

**Table 1. Descriptive Statistics of the Research Variables**

| Variable | Symbol | Mean | Median | Maximum | Minimum | Standard Deviation |
|---|---|---|---|---|---|---|
| Accounting information disclosure | DISCLOSER | 0.00000 | -0.01816 | 3.47970 | -2.06867 | 0.22417 |
| Dual holders | DUAL | 0.01786 | 0.00000 | 0.82440 | 0.00000 | 0.06508 |
| Firm size | SIZE | 15.35317 | 15.57813 | 21.97365 | 9.54342 | 2.05764 |
| Financial leverage | LEV | 0.71244 | 0.58227 | 0.99489 | 0.03143 | 0.61235 |
| Market-to-book ratio | MTB | 5.20998 | 3.30167 | 31.69707 | 0.03960 | 8.78789 |
| Sales growth | GSALES | 0.48880 | 0.31625 | 15.84308 | -0.09921 | 1.19627 |
| Institutional ownership | INST | 0.70003 | 0.75000 | 0.99700 | 0.02410 | 0.21065 |
| Profitability | ROA | 0.10557 | 0.10870 | 0.83804 | -0.60872 | 0.21266 |
| Stock return volatility | VOLATILITY | 0.87245 | 0.58496 | 4.08289 | 0.00075 | 0.80760 |
| Financial distress | Z_SCORE | 0.08536 | 0.07776 | 0.35106 | 0.00000 | 0.08295 |
| Corporate governance | GOV | 0.56755 | 0.50000 | 1.00000 | 0.16667 | 0.17374 |

Given that the study period covers nine years, from 2015 to 2023, and includes 105 cross-sectional units represented by firms, the data used in this study constitute a short panel. In such datasets, stationarity or unit-root tests generally have limited statistical power, and their results may therefore be less reliable. Nevertheless, to ensure full compliance with standard econometric procedures, the Levin–Lin–Chu (LLC) stationarity test was conducted. The results, presented in Table 2, indicate that all variables are stationary.

**Table 2. Results of the Stationarity Tests for the Research Variables**

| Symbol | Test Statistic | Probability |
|---|---|---|
| DISCLOSER | -22.4367 | 0.0000 |
| DUAL | -1962.92 | 0.0000 |
| SIZE | -6.98029 | 0.0000 |
| LEV | -7.84885 | 0.0000 |
| MTB | -14.0479 | 0.0000 |
| GSALES | -30.2051 | 0.0000 |
| INST | -11.0266 | 0.0000 |
| ROA | -11.8880 | 0.0000 |
| VOLATILITY | -14.2949 | 0.0000 |
| Z_SCORE | -910.734 | 0.0000 |
| GOV | -8.67030 | 0.0000 |

The results of the Limer F-test and Hausman test are presented in Table 3. Because the probability values for both tests are less than 0.05, the fixed-effects method was selected for estimating the models.

**Table 3. Limer F-Test and Hausman Test**

| Model | Limer F-Test Statistic | Probability | Result | Hausman Statistic | Probability | Result |
|---|---|---|---|---|---|---|
| Model 1 | 3.637790 | 0.0000 | Panel data | 161.296806 | 0.0000 | Fixed effects |
| Model 2 | 3.719869 | 0.0000 | Panel data | 160.626294 | 0.0000 | Fixed effects |

The results of the Wooldridge test presented in Table 4 indicate that, for both models, the probability value of the test statistic is less than 0.05. Therefore, the null hypothesis of no autocorrelation is rejected. To address this problem, generalized least squares (GLS) estimation was employed.

**Table 4. Wooldridge Test for Autocorrelation**

| Model | F-Statistic | Probability | Result |
|---|---|---|---|
| Model 1 | 14.023 | 0.0003 | Autocorrelation is present |
| Model 2 | 14.913 | 0.0002 | Autocorrelation is present |

The results of the Wald test presented in Table 5 indicate that, for both models, the null hypothesis of homoskedasticity is rejected, indicating the presence of heteroskedasticity. Accordingly, generalized least squares (GLS) estimation was employed to address this problem.

**Table 5. Wald Test for Homoskedasticity**

| Model | Statistic | Probability |
|---|---|---|
| Second | 17990.38 | 0.0000 |
| Fifth | 19216.82 | 0.0000 |

The results of the variance inflation factor (VIF) test presented in Table 6 indicate that the VIF values for all independent variables are below 5. Therefore, there is no problematic multicollinearity among the independent variables.

**Table 6. Results of the Multicollinearity Test**

| Model | Statistic | Probability |
|---|---|---|
| Model 1 | 14.023 | 0.0000 |
| Model 2 | 14.913 | 0.0002 |

One of the major challenges in empirical accounting research is the possibility of reverse causality between the independent and dependent variables. In other words, firms with higher disclosure quality may attract more dual holders, which could influence the research findings. To investigate this issue, the Hausman test was initially employed to detect potential endogeneity of the dual-holder variable. The results indicate that there is no statistically significant difference between the coefficients estimated using the fixed-effects and random-effects approaches, suggesting the absence of serious endogeneity in the model.

In addition, a one-lag Granger causality test was conducted to investigate reverse causality. The results indicated that the information disclosure variable does not Granger-cause the dual-holder variable, whereas the dual-holder variable does Granger-cause information disclosure. This finding confirms that the direction of causality runs from dual holders to information disclosure rather than in the opposite direction. Based on these results, it can be concluded that endogeneity and reverse causality do not exert a substantial influence on the findings and that the estimated models possess sufficient robustness.

Given that the study period of nine years is relatively short compared with the number of cross-sectional units comprising 105 firms, the likelihood of cross-sectional dependence in the short panel is reduced. Nevertheless, to ensure that this issue did not materially affect the findings, the bootstrap method with 1,000 replications was used to calculate standard errors. The resulting standard errors did not differ substantially from those reported in Tables 7 and 8. Therefore, it can be concluded that cross-sectional dependence does not have a material effect on the study findings.

To assess the robustness of the findings, an additional robustness test was performed after excluding outlier firms. Firms with values of the main study variables exceeding three standard deviations from the mean were removed from the sample, and the research models were re-estimated. The results, which are not reported for reasons of brevity, indicate that the coefficient of DUAL in Model 1 ($0.102$, $p = 0.038$) and the coefficient of the interaction term $DUAL \times GOV$ in Model 2 (1.104, $p = 0.028$) remained positive and statistically significant. Therefore, the study findings exhibit sufficient robustness.

The results of estimating Model 1 are presented in Table 7. The coefficient of the dual-holder variable (DUAL) is 0.108681, and the probability value associated with the $t$-statistic is 0.0469, which is lower than the 0.05 significance level. Moreover, the coefficient is positive. Therefore, the first research hypothesis, which proposes that dual holders have a positive and significant effect on accounting information disclosure, is supported at the 5% significance level. In other words, as the ownership concentration of dual holders increases, the quality of accounting information disclosure improves.

**Table 7. Results of Model 1 Estimation**

| Variable | Symbol | Coefficient | Standard Error | t-Statistic | Probability |
|---|---|---|---|---|---|
| Corporate dual holders | DUAL | 0.108 | 0.054 | 1.990 | 0.046 |
| Firm size | SIZE | 0.028 | 0.003 | 8.731 | 0.000 |
| Financial leverage | LEV | -0.017 | 0.007 | -2.396 | 0.016 |
| Market-to-book ratio | MTB | -0.001 | 0.0002 | -4.873 | 0.000 |
| Sales growth | GSALES | 0.010 | 0.008 | 1.316 | 0.188 |
| Institutional ownership | INST | 0.109 | 0.023 | 4.579 | 0.000 |
| Firm profitability | ROA | 0.517 | 0.030 | 17.024 | 0.000 |
| Stock return volatility | VOLATILITY | 0.009 | 0.005 | 1.625 | 0.104 |
| Financial distress | Z_SCORE | 0.082 | 0.073 | 1.117 | 0.264 |
| Constant | C | -0.574 | 0.052 | -10.88 | 0.000 |
| Firm fixed effects | Firm FE | Included | | | |
| Year fixed effects | Year FE | Included | | | |
| $R^2$ | | 0.517 | F-statistic | 7.900 | |
| Adjusted $R^2$ | | 0.452 | Probability of F-statistic | 0.000 | |

The results of estimating Model 2 are presented in Table 8. The coefficient of the interaction term between dual holders and corporate governance monitoring mechanisms ($DUAL \times GOV$) is 1.134958, and the probability value associated with the $t$-statistic is 0.0232, which is lower than the 0.05 significance level. Moreover, the coefficient is positive. Therefore, the second research hypothesis, which states that corporate governance monitoring mechanisms strengthen the positive effect of dual holders on accounting information disclosure, is supported at the 5% significance level.

**Table 8. Results of Model 2 Estimation**

| Variable | Symbol | Coefficient | Standard Error | t-Statistic | Probability |
|---|---|---|---|---|---|
| Corporate dual holders | DUAL | 0.562 | 0.293 | 1.919 | 0.055 |
| Corporate governance monitoring mechanisms | GOV | 0.083 | 0.022 | 3.736 | 0.0002 |
| Dual holders × corporate governance monitoring mechanisms | DUAL × GOV | 1.134 | 0.498 | 2.274 | 0.023 |
| Firm size | SIZE | 0.029 | 0.003 | 7.926 | 0.000 |
| Financial leverage | LEV | -0.018 | 0.007 | -2.589 | 0.009 |
| Market-to-book ratio | MTB | -0.0009 | 0.0002 | -4.227 | 0.000 |

| | | | | | |
|---|---|---|---|---|---|
| Sales growth | GSALES | 0.010 | 0.008 | 1.327 | 0.184 |
| Institutional ownership | INST | 0.092 | 0.023 | 3.993 | 0.0001 |
| Firm profitability | ROA | 0.518 | 0.029 | 17.344 | 0.000 |
| Stock return volatility | VOLATILITY | 0.005 | 0.005 | 1.003 | 0.315 |
| Financial distress | Z_SCORE | 0.085 | 0.068 | 1.260 | 0.207 |
| Constant | C | -0.614 | 0.062 | -9.782 | 0.000 |
| Firm fixed effects | Firm FE | Included | | | |
| Year fixed effects | Year FE | Included | | | |
| $R^2$ | | 0.522 | F-statistic | 7.897 | |
| Adjusted $R^2$ | | 0.456 | Probability of F-statistic | 0.000 | |

## 4. Discussion and Conclusion

The present study examined the effect of dual holders on accounting information disclosure and investigated whether corporate governance monitoring mechanisms strengthen this relationship among companies listed on the Tehran Stock Exchange. The findings provide support for both research hypotheses. First, the results of Model 1 indicated that dual holders have a positive and statistically significant effect on accounting information disclosure. Specifically, the coefficient for DUAL was positive (beta = 0.108) and statistically significant at the 5% level ((p = 0.046)). This finding suggests that as the concentration of ownership held by investors who simultaneously hold a firm's equity and debt increases, the quality of accounting information disclosure also improves. Second, the results of Model 2 showed that the interaction between dual holders and corporate governance monitoring mechanisms was positive and significant (beta = 1.134), (p = 0.023). Therefore, effective corporate governance monitoring mechanisms strengthen the positive relationship between dual holders and accounting information disclosure. Collectively, these findings indicate that dual holders can serve as an important monitoring force in the corporate information environment and that their monitoring effectiveness becomes greater when it operates within a stronger corporate governance framework.

The positive effect of dual holders on accounting information disclosure can primarily be explained by their distinctive economic position within the firm's capital structure. Unlike ordinary shareholders, who are mainly concerned with equity appreciation, or conventional creditors, who primarily focus on repayment capacity and downside protection, dual holders simultaneously possess both equity and debt claims. Consequently, they have incentives to evaluate the firm from multiple perspectives and to demand information that enables them to monitor both firm value and credit risk. This dual exposure increases the economic value of high-quality accounting information to such investors and creates stronger incentives for them to monitor managers, discourage opportunistic reporting, and encourage greater transparency. This interpretation is consistent with Jiang et al., who showed that simultaneous holdings of debt and equity by institutional investors can materially influence corporate policies because dual holders occupy a distinctive position between shareholders and creditors [13]. It is also aligned with evidence that investors participating simultaneously in debt and equity markets possess both stronger monitoring incentives and informational advantages relative to investors operating in only one market [19].

The findings are particularly consistent with prior studies directly examining dual ownership and disclosure behavior. Peyravan reported that simultaneous debt and equity holdings are associated with financial reporting quality, indicating that dual holders can improve the quality of the information environment by exerting stronger oversight over reporting practices [19]. Similarly, Peyravan and Wittenberg-Moerman found that dual holders influence voluntary disclosure decisions, providing evidence that these investors encourage firms to communicate more information to external stakeholders [20]. More recent evidence from Cheng et al. also demonstrates that institutional dual holders are significantly associated with corporate disclosure policies [21]. The result obtained in the present study therefore extends this stream of evidence to the Tehran Stock Exchange and suggests that the informational consequences of dual ownership are not limited to developed capital markets.

Another explanation for the positive association between dual holders and disclosure quality relates to access to private information. Investors participating in credit markets, especially sophisticated institutional investors, may obtain firm-specific information through lending relationships, covenant monitoring, negotiations, and interactions with managers. Research has shown that information generated in loan markets can subsequently influence investors' activities in equity markets. Ivashina and Sun demonstrated that institutional investors can trade stocks based on information acquired through their participation in syndicated loans [14]. Massoud et al. similarly documented evidence that hedge funds participating in syndicated lending may trade on private borrower information [15]. Bushman et al. further showed that loan syndicate participants contribute to the discovery and dissemination of private information [11]. Because dual holders may possess superior information about firms, management may face stronger pressure to ensure that publicly reported accounting information is credible and consistent with underlying economic conditions.

The monitoring interpretation is also supported by evidence concerning creditors' effects on corporate decision-making. Dass and Massa showed that strong banking relationships can materially influence the financial policies of borrowing firms [16]. Chava et al. found that creditors' simultaneous equity holdings affect investment policies and the effectiveness of debt covenants, demonstrating that dual holders can exercise governance influence extending beyond the traditional creditor role [17]. Tang et al. likewise documented that simultaneous debt-equity ownership affects corporate tax avoidance behavior, further illustrating the capacity of dual holders to constrain or redirect managerial decisions [18]. These studies support the argument that the positive association observed in the present research results from dual holders' ability not only to acquire information but also to exert meaningful monitoring pressure on management.

The finding is also compatible with the broader institutional ownership literature. Institutional investors generally possess greater financial expertise, analytical resources, bargaining power, and monitoring capabilities than dispersed individual investors. Boone and White found that institutional ownership enhances corporate transparency and information production [22]. Chung et al. reported that institutional ownership constrains opportunistic earnings management, indicating that sophisticated investors can reduce managerial discretion in financial reporting [23]. Ajinkya et al. also demonstrated that institutional investors and outside directors are associated with improved properties of management earnings forecasts [24]. In the Iranian market, Esmaeili Kia and Gholami similarly found that institutional ownership is related to higher information disclosure quality among companies listed on the Tehran Stock Exchange [25]. The present findings suggest that dual holders may represent an especially influential category of institutional investors because their simultaneous creditor and shareholder positions provide additional incentives and channels for monitoring.

The second major finding of the study showed that corporate governance monitoring mechanisms significantly strengthen the positive effect of dual holders on accounting information disclosure. This result implies that the monitoring role of dual holders does not operate independently of the organizational governance environment. Instead, dual holders appear to be more effective in promoting transparency when firms have stronger monitoring arrangements, such as separation of the CEO and board chair positions, greater representation of non-executive directors, appropriate institutional monitoring, stronger audit quality, and other governance characteristics. Strong governance structures may provide formal channels through which sophisticated investors can exercise their influence, constrain managerial discretion, and demand more credible reporting. Thus, dual holders and corporate governance mechanisms appear to function as complementary rather than substitutive monitoring mechanisms.

This finding is consistent with previous evidence demonstrating a positive connection between corporate governance and transparency. Salehi et al. reported that stronger corporate governance is associated with greater financial reporting transparency [26]. Hsu and Yang likewise found that corporate governance contributed to maintaining financial reporting quality during the COVID-19 pandemic, when uncertainty and reporting challenges were particularly pronounced [27]. In the Iranian context, Ahmadpour et al. documented a significant relationship between corporate governance mechanisms and information disclosure quality among companies listed on the Tehran Stock Exchange [31]. The present findings extend these results by showing that governance mechanisms may not only directly enhance transparency but may also increase the effectiveness of another monitoring mechanism—dual ownership.

The significant positive coefficient of GOV in Model 2 also reinforces this interpretation. Corporate governance monitoring mechanisms were positively associated with accounting information disclosure independently of the interaction effect. This result is compatible with the conceptual view that effective governance reduces agency problems by strengthening managerial accountability and limiting managers' ability to withhold, manipulate, or selectively release information. Early discussions of corporate governance in the Iranian context emphasized its role in protecting investors and strengthening corporate accountability [28]. Nikoomaram and Mohammadzadeh Salteh subsequently showed that governance structures are related to earnings management, suggesting that effective monitoring can constrain discretionary reporting behavior [29]. Hashemi and Younesi further highlighted the relevance of governance arrangements for managerial financial decisions [30]. Together, these findings support the proposition that governance structures create an institutional environment conducive to higher-quality reporting.

The moderating result can also be interpreted through the interaction between formal and market-based monitoring. Corporate governance mechanisms constitute formal internal and external controls over management, whereas dual holders provide an ownership-based source of market discipline. When both mechanisms are strong, managers may face more intensive scrutiny and fewer opportunities to engage in opaque reporting. Non-executive directors and high-quality auditors can increase the credibility of reporting, while dual holders can employ their informational advantages and economic influence to demand more transparent disclosure. Consequently, a firm's disclosure environment may improve more substantially when these monitoring mechanisms operate simultaneously. This interpretation is also consistent with the recent findings of Farahmand et al., who emphasized the importance of corporate governance factors and information disclosure in the Tehran Stock Exchange environment [34].

The moderating role of governance is particularly important because formal governance mechanisms may differ in their actual effectiveness across firms. Moradi et al. showed that weaknesses in managerial ethical behavior can impair corporate governance systems and reduce financial reporting quality [32]. Alizadeh and Valizadeh Oghani likewise demonstrated that the relationship between governance and financial reporting quality is influenced by financial misconduct [33]. These findings indicate that governance cannot be understood solely as a set of formal structural attributes; rather, its monitoring effectiveness depends on whether these structures meaningfully constrain managerial behavior. The current findings suggest that when corporate governance mechanisms function effectively, they can amplify the monitoring capacity of dual holders and translate their informational advantages into higher-quality public disclosure.

The control-variable results provide additional insight into the determinants of disclosure quality. Firm size had a positive and significant coefficient in both models, suggesting that larger companies tend to exhibit higher-quality accounting information disclosure. Larger firms generally face greater public visibility, wider analyst and investor scrutiny, more complex financing arrangements, and stronger regulatory attention, all of which may increase incentives for transparency. This result is compatible with prior research indicating that firm characteristics are important determinants of voluntary disclosure [4] and with evidence that ownership and financial characteristics influence reporting timeliness [36]. Institutional ownership was also positive and significant, reinforcing the monitoring explanation and supporting earlier evidence from both international and Iranian settings [22, 25].

Profitability was positively and significantly associated with disclosure quality in both models. More profitable firms may have stronger incentives to disclose high-quality information because favorable performance allows managers to communicate positive signals regarding operational efficiency and future prospects. Conversely, financial leverage had a negative and significant relationship with disclosure, suggesting that heavily leveraged companies may face greater financial constraints, reporting incentives, or agency conflicts that negatively affect information quality. The market-to-book ratio was likewise negatively significant, possibly indicating that firms with relatively high market valuations have stronger incentives or opportunities to manage the informational environment surrounding market expectations. These results reinforce the importance of accounting quality in debt contracting and corporate valuation [1, 10].

In contrast, sales growth, stock-return volatility, and financial distress were not statistically significant predictors of disclosure quality in the estimated models. The absence of significant effects suggests that, after controlling for firm and year fixed effects and the other financial and ownership variables, these factors did not independently explain variation in accounting information disclosure within the sample period. Nevertheless, their inclusion remains important because corporate financial conditions may alter reporting incentives. Financial distress measures, for example, remain relevant for assessing firms' underlying financial health and bankruptcy risk [35]. Similarly, the effects of disclosure can extend to capital-market outcomes such as stock liquidity [7], while disclosure policies may vary according to firms' incentives, risks, and external monitoring pressures [2, 37].

Overall, the results contribute to the disclosure and corporate governance literature by demonstrating that dual holders can serve as a complementary monitoring mechanism in an emerging capital market. Prior Iranian research has shown that disclosure quality is shaped by firm characteristics, institutional ownership, governance mechanisms, and market conditions [5, 6]. The present study advances this literature by identifying simultaneous debt-equity ownership as another relevant component of the corporate information environment and, importantly, by demonstrating that its effect depends partly on the strength of corporate governance monitoring mechanisms. The findings therefore indicate that the informational benefits associated with dual holders are greatest when ownership-based monitoring is embedded within an effective governance framework.

Several limitations should be considered when interpreting the findings of this study. First, the sample was restricted to 105 companies listed on the Tehran Stock Exchange during 2015–2023; therefore, the findings may not be directly generalizable to unlisted firms, financial institutions, smaller companies, or firms operating in other capital markets. Second, the measurement of dual holders was dependent on information available in board reports and financial statement notes, and limitations in the completeness or consistency of ownership disclosures may have affected the precision of the measure. Third, corporate governance was operationalized through a composite index consisting of six observable mechanisms. Although this approach provides a systematic measure of governance quality, it may not fully capture less observable dimensions such as board effectiveness, director expertise, managerial ethics, audit committee quality, informal influence, or the actual intensity of investor engagement. Fourth, although fixed effects, GLS estimation, endogeneity checks, Granger causality analysis, bootstrap standard errors, and robustness testing were employed, observational panel data cannot completely eliminate all potential sources of omitted-variable bias or establish causality with the certainty available from experimental research.

Future studies could extend the present research in several directions. Researchers could examine longer time horizons and larger samples or conduct comparative studies involving multiple emerging and developed capital markets to determine whether institutional and regulatory environments alter the effect of dual holders on disclosure. Future research could also distinguish among different types of dual holders, such as banks, mutual funds, pension funds, investment companies, and other institutional investors, because their monitoring incentives and access to private information may differ considerably. Alternative measures of disclosure quality, including voluntary disclosure indices, disclosure timeliness, readability, management forecasts, earnings-call characteristics, digital reporting quality, and market-based information measures, could be employed to assess whether the findings are robust across different dimensions of transparency. Researchers could further investigate other moderating or mediating mechanisms, such as audit committee effectiveness, board expertise, ownership concentration, managerial overconfidence, financial constraints, audit quality, political connections, or information asymmetry. Finally, quasi-experimental designs, instrumental-variable approaches, dynamic panel estimators, or natural experiments could provide stronger evidence regarding the causal effect of dual ownership on corporate disclosure.

The findings have several practical implications for corporate managers, investors, regulators, and policymakers. Capital market regulators should improve the transparency of corporate ownership structures so that simultaneous holdings of debt and equity by institutional investors can be identified more accurately and monitored effectively. Companies should strengthen governance arrangements by increasing board independence, separating the roles of chief executive officer and board chair where appropriate, improving auditor quality, and establishing effective oversight mechanisms that facilitate constructive engagement with sophisticated institutional investors. Managers should recognize dual holders as potentially valuable monitoring stakeholders whose informational demands can contribute to higher-quality reporting rather than treating their oversight solely as an additional constraint. Institutional investors holding both debt and equity should develop explicit monitoring policies and actively use their informational advantages to encourage timely, reliable, and comprehensive corporate reporting. Stock exchange authorities and securities regulators may also consider developing disclosure requirements that clarify significant cross-holdings of debt and equity, thereby enabling other market participants to better understand the firm's ownership and monitoring environment. Strengthening both ownership transparency and corporate governance mechanisms can ultimately help improve confidence in financial reporting, reduce information asymmetry, and enhance the efficiency of capital allocation in the market.

**Authors' Contributions**

Authors equally contributed to this article.

## Ethical Considerations

All procedures performed in this study were under the ethical standards.


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## Conflict of Interest

The authors report no conflict of interest.


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