

The impact of conditional and unconditional conservatism on operating cash flow in companies listed on the Tehran Stock Exchange

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Abstract

One of the ways to prevent management fraud and increase the quality of financial information is to observe the quality characteristics of financial information, including conservatism. This research examines the effect of conditional and unconditional conservatism on operating cash flows in companies listed on the Tehran Stock Exchange. A sample consisting of 131 companies was systematically selected over a 6-year period from 2016 to 2021 and analyzed using a logistic model for panel data. The results of data analysis indicated that conditional conservatism has a direct and significant impact on operating cash flow. Additionally, unconditional conservatism has a direct and significant effect on operating cash flow. Therefore, it can be recommended to managers and accountants to carefully and appropriately determine the level of conservatism used in financial statements when preparing them.

Keywords: conservatism, operating cash flow, panel model
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1 Introduction

Managers have the ability to perform operations that can engage them in managing operating cash flow. Operating cash flow refers to the funds generated from the recurring operational activities of a business. Cash flow management is defined as the ability of managers to select activities aimed at altering financial reporting to mislead external users by creating positive results in order to achieve bonus contracts [17]. One way to reduce the agency problem is conservatism. Conservatism can be seen as a structure that, if applied correctly, will solve many of the agency problems arising from information asymmetry, which generally results from the growing gap between managers and the providers of financial resources in business units. If conservatism truly plays a role in reducing agency problems between managers and shareholders, it is expected that the greater the misalignment of interests between managers and shareholders, the higher the demand for conservatism. Preventive tools to improve the quality of information in companies' financial statements are necessary. One such tool is the application of conservatism in preparing financial statements. Conservatism is adopting a pessimistic approach in conditions of uncertainty. Conservatism has been divided into two types: conditional conservatism and unconditional conservatism, both of which are used in this study [18]. A conservative reporting system can improve the quality of information and reduce the effect of information

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asymmetry between informed and uninformed investors. Conservatism can influence the quality of reported earnings. The use of conservative accounting practices leads to lower reported profits and increases the quality of accounting earnings. It is an effective mechanism for reducing agency costs and a method for dealing with uncertain conditions, which will ultimately increase the company's value [20]. One of the methods to prevent management fraud and enhance the quality of financial information is adhering to the characteristics of financial information quality, including the characteristic of conservatism. Adopting a conservative approach, on one hand, increases the quality of financial information, reduces informational risk, and consequently lowers the equity capital cost of the business unit. On the other hand, by presenting an unfavorable picture of the business unit's situation, it increases the risk of not recovering the principal and profit of the investment, thereby raising the equity capital cost of the business unit.

Conservatism, through the timely recognition of losses, facilitates monitoring of projects and ends the life of unsuitable projects. Researchers have identified two types of conservatism: conditional and unconditional conservatism. If a company applies conditional conservatism, it is difficult to delay the recognition of accounting costs and losses from an unprofitable project until the next management period [23]. In these circumstances, there is a greater likelihood that managers will recognize this accounting cost or loss during their tenure. Thus, the monitoring of managers' investment decisions is more stringent, and it is likely that managers will avoid starting investment projects not only with a negative net present value but also with a positive net present value that has low initial profitability [5, 12]. Regarding unconditional conservatism, it can be stated that an increase in this type of conservatism raises the risk-taking behavior of management, which can lead to over-investment and have a negative impact on investment efficiency and shareholder value. On the other hand, unconditional conservatism increases the proactive monitoring process, which can lead to investment efficiency. As a result, by stimulating the risk-taking behavior of the manager, it prevents under-investment. In fact, the effect of unconditional conservatism on the relationship between investment and stock returns can have both a positive and a negative effect [19, 23]. Since conservatism reduces information asymmetry, it reduces the expected benefits and opportunism of informed investors within the company. As a result, it reduces informational risk for uninformed investors [21].

Therefore, the primary objective of this research is to expand the theoretical foundations related to the topic of conservatism and operating cash flows. The secondary objective is to empirically show financial analysts, investors, managers, and other users of accounting information whether conditional and unconditional conservatism can be an effective mechanism in operating cash flows or not.

2 Theoretical foundations and research background

Conservatism is one of the prominent features of financial reporting, which has gained more attention in recent years due to financial scandals (in companies such as Enron and WorldCom) [3]. Each company has its own specific characteristics that are reflected in its financial reports. For example, the attitude towards accounting and financial planning may represent the characteristics of conservative companies or those with a tendency toward conservative accounting practices in their financial reports. Additionally, if a company has relatively conservative management and financial operations, it may exhibit a more conservative approach in its accounting reports and financial data. Such a company is considered to have conservative characteristics. Furthermore, companies that exhibit less conservatism in their financial reports have less experience in investment activities after the onset of a crisis compared to those that are more conservative [4]. According to the study by LaFond and Watts [21], conservatism, as a strategic mechanism, limits the incentives and capabilities of management to accelerate the disclosure of good news and delay the disclosure of bad news. In their view, conservatism, due to the requirement for asymmetric verifiability in recognizing profits and losses, leads to the acceleration of recognizing bad news as losses rather than good news as profits. This matter limits managers' incentives to withhold bad news and accelerate the disclosure of good news. As a result, bad news, compared to good news, enters the market in a timelier manner as it is less verifiable. In other words, it is expected that conservative accounting will prevent the accumulation of bad news within the company and thus reduce the likelihood of a sudden influx of bad news into the market [22].

2.1 Conditional conservatism

Conditional conservatism can be considered the type of conservatism required by accounting standards. This type of conservatism was first introduced by Basu [6] as an important aspect of conservatism. The primary motivation for this type of conservatism is to counteract managers' incentives to report biased upward accounting information (in cases where unfavourable events have occurred). Conditional conservatism refers to the timely recognition of losses in the presence of bad or unfavourable news and the non-recognition of profits in the presence of good or favourable news. For example, practices such as the cost or market rule, impairment testing for goodwill, and asymmetric recognition

of potential losses versus potential profits are examples of this type. Generally, accounting principles require the recognition of decreases (due to bad news) related to inventory, goodwill, and potential losses, but prohibit the recognition of increases (due to good news). Basu [6] states that conditional conservatism contains new information due to the faster recognition of bad news (losses) compared to good news (the time asymmetry in recognizing profits). This type of conservatism is also referred to as profit and loss conservatism, retrospective or post-event conservatism, news-dependent conservatism, and time-asymmetric profit conservatism [14]. Conditional conservatism or time-asymmetric profit recognition refers to the timely recognition of items in the income statement, which is considered one of the indicators of timely financial reporting. The focus on accounting profit is due to its influential role in the decision-making of users. Conditional conservatism limits the managers' motivations and ability to overstate and conceal unfavourable information from investors, which in turn reduces the risk of stock price declines [19]. As a result, the main motivation for conditional conservatism is to neutralize managers' tendency to release favourable information in situations where unfavourable events have occurred. Conditional conservatism is also referred to as post-event conservatism, named for its dependence on news [13].

2.2 Unconditional conservatism

Unconditional conservatism is a type of conservatism that is not required by accounting standards. The main motivation for unconditional conservatism is the difficulty of evaluating assets and liabilities. This type of conservatism results from the use of accounting practices that reduce profits independently of current economic news. In unconditional conservatism, when identifying assets, the book value of assets is shown to be less than their actual value. This understatement of assets can be seen as a quicker recognition of economic losses compared to profits. For example, immediately recognizing advertising and research and development expenses as costs, even if the expected future cash flows are positive, not recognizing goodwill and other intangible assets generated within the business, using the FIFO method versus LIFO for inventory valuation, or using a faster depreciation method in the early years of acquisition are examples of this type of conservatism. This conservatism is also called balance-sheet conservatism, forward-looking conservatism, or news-independent conservatism [14]. Therefore, unconditional conservatism prevents the overstatement of accounting profits and limits the claims of stakeholders on company assets. These factors lead to an increase in the quality and credibility of financial reports, and financial institutions are more inclined to extend credit to these companies [1]. Unconditional conservatism is prevalent in companies with large size, high leverage, low growth, and especially in companies with financial constraints or low credit levels [16]. In general, both conditional and unconditional conservatism help reduce bankruptcy risk in companies by increasing cash reserves and information transparency. When bankruptcy risk increases, the demand from capital providers and auditors for a higher level of conservatism in financial reporting rises [8].

2.3 Cash flows

Financial statement users need information about how cash is generated and used by the business unit. This need exists regardless of the nature of the business unit's activities and whether or not cash is considered the product of the unit, because despite the differences between these units in terms of their revenue-generating activities, their need for cash primarily stems from a similar reason. In other words, business units require cash to manage operations, settle obligations, and pay dividends.

According to the theoretical concepts of financial reporting, economic decision-making by financial statement users requires an assessment of the business unit's ability to generate cash, the timing, and its certainty. This ability ultimately determines the capacity of the business unit to make payments such as salaries and benefits to employees, payments to suppliers of goods and services, financial expenses, investments, repayment of borrowed funds, and distribution of profits to shareholders [2].

Cash flows from operating activities are one of the key indicators for assessing a business unit's ability to repay loans, maintain operational capacity, and pay dividends without relying on external resources. In cases where certain cash flows cannot be allocated to a specific category, these items are classified as cash flows from operating activities [27]. The following discusses studies conducted in the area of conservatism:

Biddle et al. [8] conducted a study examining the relationship between accounting conservatism and bankruptcy risk in a large sample of companies listed on the U.S. stock exchange. The results indicated that conservatism reduces bankruptcy risk. Additionally, cash flow plays a decisive role in the relationship between accounting conservatism and bankruptcy risk. Ugwunta and Ugwuanyi [28], in a study titled 'Accounting conservatism and performance of Nigerian consumer goods firms: An examination of the role of accruals,' examined the negative relationship between accounting conservatism and the performance of companies in the Nigerian Stock Exchange. This study was conducted in the

consumer goods industry. Contrary to theoretical foundations, the results showed a positive relationship between conservatism and performance. This suggests that companies in this industry do not practice conservatism and have low-quality financial reporting. Sugiarto and Fachrurrozie [26] conducted a study titled 'The determinant of accounting conservatism on manufacturing companies in Indonesia.' The results of their research indicated that financial distress and financial leverage can lead to an increase in accounting conservatism, while managerial ownership can reduce the level of accounting conservatism. Biddle et al. [7] in his study examined the role of risk management and conservatism for operating cash flow. The results of the study indicate that unconditional conservatism helps reduce the downward trend in operating cash flow.

Watts and Zuo [29] in their study examined the effects of accounting conservatism on the value of companies during financial crises. Their research findings indicated that companies that adopted conservative policies before the crisis period had better access to borrowing resources during the crisis and also experienced lower stock return reductions. Donovan et al. [9] in their study examined the relationship between conservatism and the recovery rate of creditors for companies that have defaulted on principal or interest payments or are at risk of bankruptcy. Their research findings showed that creditors of more conservative companies demand higher interest rates for loan recovery, but at the same time, these companies recover more quickly from bankruptcy or the inability to repay their loans, achieving higher returns during this period.

Haghighat Shahrestani et al. [15] investigated the effect of conditional and unconditional conservatism on future investment levels and stock value. The results showed that business units that apply a high level of conditional conservatism tend to make lower levels of investment. On the other hand, business units with high levels of unconditional conservatism tend to make higher levels of investment. Another finding of the research indicated that both conditional and unconditional conservatism enhance the impact of company investment on stock value. Saghafi and Motamedi Fazel [25] examined the relationship between conditional and unconditional conservatism and bankruptcy risk. The results of their study indicate that there is a significant relationship between unconditional conservatism and bankruptcy risk, whereas no significant relationship was found between conditional conservatism and bankruptcy risk.

Etemadi and Farajzadeh Dehkordi [10] examined the impact of earnings management and capital structure on earnings conservatism. The researchers state that earnings management, whether it is increasing or decreasing, affects earnings conservatism and leads to an increase in conservatism. Companies that engage in income-decreasing earnings management report more conservative earnings, indicating higher conservatism. On the other hand, companies that use positive accruals to engage in income-increasing earnings management apply less conservatism in their reporting. Capital structure also influences the level of earnings conservatism. Companies that rely more on equity financing apply more conservatism in their earnings measurement.

Fakhari and Arab [11] examined the relationship between accounting conservatism and cash management in companies. The results of their study showed a significant negative relationship between conservatism and the amount of cash during the period, as well as between conservatism and changes in cash flows relative to free cash flows. Nikbakht and Haji Azimi [24] investigated the impact of conditional conservatism on the reliability of information and the timeliness of disclosures. Their results indicated a negative relationship between disclosure quality and conditional conservatism. In other words, conditional conservatism and increased disclosure quality are used as substitute information policies. Additionally, the results showed that conditional conservatism has a significant negative relationship with the timeliness of disclosures, leading to a decrease in managers' willingness to provide timely information. Furthermore, the findings from this study suggested that the application of conditional conservatism reduces the reliability of disclosed information and increases the volatility in forecasts and their deviation from actual values.

3 Research methodology

The present study is a fundamental empirical research. From a process perspective, it is quantitative research, meaning it focuses on collecting and analyzing quantitative data. This research will be conducted within the framework of deductive-inductive reasoning. It is an inductive study, aiming to design a general model based on empirical observations and the collection of quantitative data. In terms of the nature of the research, it is original (first-hand), and ultimately, based on the research design, it is semi-experimental, utilizing a post-event approach (based on past information). The post-event method is used when the researcher examines the subject after the events have occurred, and there is no possibility of manipulating the independent variables. Given the aforementioned details, since this research investigates the impact of conditional and unconditional conservatism on operating cash flow in companies listed on the Tehran Stock Exchange, it is descriptive-correlational in nature and method. In this study, for data collection and gathering of information, a library-based approach will be initially used. In the library section, the

theoretical foundations of the research will be gathered from specialized Persian and English books and journals. Additionally, to collect the necessary data and information, the required data will be gathered from the Rahavard Novin software. For data analysis in this research, both descriptive and inferential statistics will be used. Descriptive statistics (mean, variance, correlation, covariance, etc.) will be employed to summarize and describe the collected data, while inferential statistics will be used to analyze and test the research hypotheses. To determine the type of data, the F-Limer and Hausman tests will be used. For hypothesis testing, t-statistics will be employed, and to test the model's validity, the F-statistic will be used. For data analysis and extracting research results, Excel and EViews software will be used. The statistical population of this research consists of all companies listed on the Tehran Stock Exchange over a six-year period from 2016 to the end of 2021. The sampling method is systematic exclusion (selecting a regular number of individuals from a list), and the sample size will be the number of companies in the statistical population that meet the following conditions:

To ensure the comparability of the information, the fiscal year-end of the companies should coincide with the end of Esfand (March 20), and they should not have changed their financial period during the study period.

The companies should not be part of the financial intermediation sector (such as banks, investment companies, leasing companies, and insurance companies).

Their stocks should not have had a trading suspension for more than three months in the market.

They should not be companies that were listed on the stock exchange after 2016.

Given the conditions and limitations applied, and using the systematic elimination method, a total of 786 companies were selected as the sample from the companies listed on the Tehran Stock Exchange.

3.1 Research model and how to measure variables

$$CFO_{it} = B_0 + B_1CC_{it} + B_2UCC_{it} + B_3SIZE_{it} + B_4LEV_{it} + B_5RET_{it} + e_i \quad (3.1)$$

CC: Conditional Conservatism, UC: Unconditional Conservatism, SIZE: Company Size, CFO: Operating Cash Flow, RET: Stock Return, and Lev: Financial Leverage

In this research, conservatism is used as the independent variable, which is divided into two types: conditional conservatism and unconditional conservatism. Each type is measured using the following methods:

Conditional conservatism (CC): To measure conditional conservatism, two criteria are used: the negative coefficient of the sum of discretionary accruals to total assets, and the ratio of net income before extraordinary items to the market value of shareholders' equity.

$$CONS C = \frac{\text{Operating Income} + \text{Depreciation Expense} + \text{Operating Cash flow}}{\text{Total Assets}} \times (-1) \quad (3.2)$$

Operating Income: Operating income is the profit generated as a result of a company's future activities. Operating income in economic units is calculated as follows:

$$\text{Operating Income} = \frac{\text{Earnings before Interest and Taxes (EBIT)}}{\text{Total Disposition}} \quad (3.3)$$

Operating Cash Flow (CFO) is directly obtained from the cash flow statement.

Unconditional Conservatism (UCC): In this study, unconditional conservatism is measured using two criteria: the book-to-market ratio of net assets and the negative accruals-to-average total assets ratio.

$$CONS US = \frac{\text{Book Value of Equity}}{\text{The Market Value of Equity}} \times (-1) \quad (3.4)$$

Dependent variable:

Operating Cash Flow (CFO): It represents the company's cash flow, which has been normalized based on the company's total assets.

Control variables:

Size: It represents the size of company i in year t, which is obtained by taking the natural logarithm of the company's total assets.

Financial Leverage (LEV): It represents the extent of debt usage in the company's financial structure, which is obtained by dividing the company's debts by its assets.

Stock Return: RET

$$R_t = (1 + a)P_{t+1} + DPS_t - C/P_t \quad (3.5)$$

R_t : Stock return in period t ,

P_t : Stock price at the end of the period,

P_{t+1} : Stock price at the end of period $t + 1$ (next period),

t : Cash dividend of common stock during the period DPS_t (it is assumed that the cash dividend is evenly distributed throughout the year, with one twelfth considered for each month).

a : Percentage of capital increase from reserves, cash contributions, or receivables.

C : Cash contributions during capital increase (according to the Commercial Code, a capital increase of 1000 rials per share is acceptable).

Additionally, the indices used in the present study to achieve the specific objectives of the research are listed below:

Mean:

The mean of a dataset is calculated by summing all values and dividing by the total number of values.

$$\text{Mean} = \bar{X} = \frac{1}{N} \sum_{i=1}^N X_i \quad (3.6)$$

N is the total number of observations.

X_i represents each individual value.

Median:

The median is the middle value in an ordered dataset.

- If N (number of observations) is odd:

$$\text{Median} = X_{\frac{N+1}{2}} \quad (3.7)$$

- If N is even:

$$\text{Median} = \frac{X_{\frac{N}{2}} + X_{\frac{N}{2}+1}}{2} \quad (3.8)$$

Standard Deviation:

Standard deviation shows the amount of variation or dispersion in a set of values.

$$\sigma = \sqrt{\frac{1}{N} \sum_{i=1}^N (X_i - \bar{X})^2} \quad (3.9)$$

The Jarque-Bera test:

The Jarque-Bera test is a statistical test that checks whether sample data has the skewness and kurtosis matching a normal distribution. Here's the formula:

$$JB = \frac{n}{6} \left(S^2 + \frac{(K - 3)^2}{4} \right) \quad (3.10)$$

where, n is the sample size, S is the skewness of the sample, K is the kurtosis of the sample. Skewness S measures the asymmetry of the data distribution:

$$S = \frac{\frac{1}{n} \sum_{i=1}^n (X_i - \bar{X})^3}{\left(\frac{1}{n} \sum_{i=1}^n (X_i - \bar{X})^2 \right)^{\frac{3}{2}}} \quad (3.11)$$

Kurtosis K measures the "tailedness" of the distribution

$$K = \frac{\frac{1}{n} \sum_{i=1}^n (X_i - \bar{X})^4}{\left(\frac{1}{n} \sum_{i=1}^n (X_i - \bar{X})^2 \right)^2} \quad (3.12)$$

The Jarque-Bera statistic (JB) follows a chi-square (χ^2) distribution with 2 degrees of freedom.

- A higher JB value suggests a departure from normality.
- The p-value is used to interpret the result, where a low p-value indicates that the sample data significantly deviates from a normal distribution.

The chi-square (χ^2) statistic is used to test the association between categorical variables or to assess the goodness of fit. The formula is:

$$\chi^2 = \sum_{i=1}^n \frac{(O_i - E_i)^2}{E_i} \quad (3.13)$$

where, O_i is the observed frequency (actual count) for each category i , E_i is the expected frequency for each category i , n is the number of categories or groups.

Levin-Lin test:

Levin-Lin's test is used to assess the equality of variances for a variable calculated for two or more groups. It tests the null hypothesis that the population variances are equal (homogeneity of variances). Here's the formula for Levin-Lin's test:

Step 1: Calculate Group Deviations

For each observation in group i (where i indicates the group, and j indicates the observation within that group), calculate the deviation of each observation from the group mean or median. The test has two common forms based on the measure of central tendency used:

- Mean-based Levin-Lin's test: Uses the group mean
- Median-based Levin-Lin's test (recommended if data is skewed): Uses the group median

The deviation for each observation Z_{ij} is calculated as:

$$Z_{ij} = |Y_{ij} - \tilde{Y}_i| \quad (3.14)$$

where, Y_{ij} is the j -th observation in group i , $\tilde{Y}_i$ is the central tendency (mean or median) of group i , Z_{ij} is the absolute deviation of Y_{ij} from the group central tendency.

Step 2: Conduct an ANOVA on Deviations

Levin-Lin's test statistic is based on an ANOVA conducted on the absolute deviations Z_{ij} . The test statistic W is calculated as:

$$W = \frac{(N - k)}{k - 1} \cdot \frac{\sum_{i=1}^k n_i (\bar{Z}_i - \bar{Z})^2}{\sum_{i=1}^k \sum_{j=1}^{n_i} n_i (Z_{ij} - \bar{Z}_i)^2} \quad (3.15)$$

where, N is the total number of observations across all groups, k is the number of groups, n_i is the number of observations in group i , $\bar{Z}_i$ is the mean of the deviations for group i , $\bar{Z}$ is the overall mean of the deviations for all groups combined.

The test statistic W follows an F -distribution with degrees of freedom $(k - 1, N - k)$. A high W value indicates evidence against the null hypothesis, suggesting that at least one group variance differs significantly from the others.

Im, Pesaran, and Shin (IPS) Unit Root Test:

The hypotheses of the Im, Pesaran, and Shin tests are based on the same usual unit root hypotheses. The difference between this test and the LLC test is mainly reflected in their hypotheses. In the H_1 hypothesis of this test, the ρ_i 's can have different values in such a way that cross-sectional units do not have equal coefficients and are allowed to change between the sections. ($H_0 : \rho_i = 0$ for all i) and the alternative hypothesis indicates the presence of a unit root in some of the cross-sectional units.

$$H_1 : \begin{cases} \rho_i > 0, & i = 1, 2, \dots, N_1 \\ \rho_i = 0, & i = N_1 + 1, N_1 + 2, \dots, N \end{cases} \quad (3.16)$$

$$0 < N_1 < N$$

Based on these hypotheses, some sections may have a unit root. Therefore, instead of conducting the test for panel data, the unit root test is conducted separately for each section. In this test, the average of the t-statistics, denoted as t_{NT}^- , is used to calculate the Z^- statistic. If $t_{iT}(\pi_i, \beta_i)$ represents the t-statistic based on the ADF test statistic for the unit root test of the i-th section, with lag π_i and test coefficients β_i , the standard statistic t_{NT}^- is defined as follows:

$$t_{NT}^- = \frac{1}{N}(\pi_i, \beta_i) \sum_{i=1}^N t_{iT}. \quad (3.17)$$

As N and T approach infinity, this statistic tends towards a standard normal distribution. In order to create a standard t-statistic, IPS calculated the values of $E(t_{iT}(\pi_i, \beta_i))$ and $var(t_{iT}(\pi_i, \beta_i))$, which were obtained through simulation.

$$Z^- = \sqrt{N}(t^- - E(t^-))/\sqrt{var(t^-)}. \quad (3.18)$$

Due to the presence of autocorrelation, it has been suggested to use two methods for calculating the asymptotic measures of mean and variance, and the standardized statistic using the mean and variance ($t_{iT}(\pi_i, 0)$) under the assumption of $\rho_i = 0$ is used as follows:

$$W_{t^-} = \frac{\sqrt{N}[t_{NT}^- - N^{-1} \sum_{i=1}^N E(t_{iT}(\pi_i, 0))/\rho_i = 0]}{\sqrt{N^{-1} \sum_{i=1}^N var[t_{iT}(\pi_i, 0)/\rho_i = 0]}} \Rightarrow N(0, 1). \quad (3.19)$$

After calculating this statistic, if the calculated value of the statistic is smaller than the tabulated statistic, the null hypothesis of the unit root cannot be rejected. In addition to the standardized t-statistic calculated by the ADF test statistic, the LM statistic can also be used:

$$\Gamma_{LM^-} = \frac{\sqrt{N}[LM_{NT}^- - E[LM_{iT}\rho_i = 0]]}{\sqrt{var[LM_{iT}/\rho_i = 0]}} \Rightarrow N(0, 1). \quad (3.20)$$

4 Research findings

Descriptive statistics include a set of methods used for collecting, summarizing, classifying, and describing numerical facts. The descriptive statistics of the research variables are presented in Table 1. The results for conditional and unconditional conservatism were 0.0001 and -0.63, respectively. Additionally, the results for operating cash flow show that its mean is 4.47, with the mean and median of the data being close to each other, and the standard deviation having a quantitative measure. Therefore, the data is approximately normal.

Table 1: Descriptive statistics related to the independent and dependent variables of the research

Variables	Mean	Median	Standard Deviation	Min.	Max.
Conditional conservatism	0.0001	0.00001	0.199	-0.68	1.19
Unconditional conservatism	-0.63	-0.53	0.58	-8.54	-0.04
Stock returns	0.13	1.20	6.75	-4.76	14.89
Operating cash flow	4.47	4.87	1.63	0.0007	7.03
Financial leverage	0.66	0.66	0.18	0.05	1.07
Company size	4.00	5.93	0.58	4.56	8.54

Jarque-Bera test determines the type of distribution of variables and is used to assess the normality of the distribution of variables. This aspect has been examined in all hypotheses. Based on the Jarque-Bera statistic in the research hypotheses, it was found that the data are normal.

Before estimating the model, it is necessary to examine the stationarity of the variables. A variable is considered stationary if its mean, variance, and autocorrelation coefficients remain constant over time. In the present study, Levin-Lin, Im, Pesaran, and Shin tests were used to check stationarity. It was observed that all variables were stationary at level, except for the stock return variable, which became stationary after differencing once.

Then, the F-Limer test is used to examine the heterogeneity of units or to select the fixed effects model as opposed to the pooled model. The test statistic is as follows:

$$F = (n - 1, n_t - n - k) = \frac{(RSS_R - RSS_{UR})/(n - 1)}{(RSS_{UR}/(n_t - n - k))}. \quad (4.1)$$

In this function, n represents the number of sections, t the length of the time period, and k the number of parameters. RSS_R is the sum of squared residuals for the restricted model, RSS_{UR} is the sum of squared residuals for the unrestricted model, where UR denotes the unrestricted model and R the restricted model with a common constant for all groups. If the calculated F-value is greater than the tabulated F-value with degrees of freedom $(n - 1)$ and $(nt - n - k)$, the null hypothesis is rejected. In this study, it is observed that the calculated F-value is greater than the tabulated F-value, leading to the rejection of the null hypothesis, and therefore, the fixed or random effects methods must be used. Table 2 shows the results from this estimation.

Table 2: Study model selection results (F-Limer test and Hausman test)

Test type	Test statistics	The value of the test statistic	Statistical probability
F-Limer test	F	22.38	0.000
Hausman test	H	82.08	0.000

It is observed that the models under review are not integrated, and one of the fixed effects or random effects models must be selected. To determine which method to use, the Hausman test is conducted. In the Hausman test, the null hypothesis and the alternative hypothesis are as follows: The null hypothesis in the Hausman test implies no correlation between the disturbance term related to the intercept and the explanatory variables, indicating independence. However, the alternative hypothesis suggests a correlation between the disturbance term and the explanatory variable. If the null hypothesis is rejected, the fixed effects method is consistent. In this study, based on the Hausman test results shown in Table 2, rejecting the null hypothesis indicates that the fixed effects method should be used.

In examining the results of the heteroskedasticity test in the models, it was found that the significance level of the model is greater than 5%. Therefore, the null hypothesis is not rejected, indicating that the research variables exhibit homoscedasticity. The Durbin-Watson test was used to check for autocorrelation, where a value between 1.5 and 2.5 indicates no autocorrelation. Given that the value of this statistic in the model is 1.76, it suggests that there is no autocorrelation. Finally, the specified model to examine the effect of explanatory variables on operating cash flow was estimated using the fixed effects method, and the corresponding results are reported in Table 3.

Table 3: Results of model estimation based on combined data

Variables	Coefficient	T statistic	Sig. level
Conditional conservatism	0.23	4.43	0.000
Unconditional conservatism	0.11	2.22	0.03
Company size	0.31	0.99	0.39
Financial leverage	-0.31	-3.01	0.001
Stock returns	-0.21	-0.98	0.44
Width from the origin	1.22	3.75	0.00
The coefficient of determination	0.59	Durbin-Watson	1.76
	0.57		

The adjusted coefficient of determination in the model is also 57%, this coefficient indicates that the independent and control variables in this model can justify more than 57% of the changes in the levels of the dependent variable.

According to the results of table 3, the conditional conservatism variable has a positive relationship with the operating cash flow variable, and the t-statistic is equal to 4.43, indicating the significant effect of this variable. This means that with the increase of conditional conservatism, the operating cash flow increases. Based on the estimated coefficient, an increase of one unit in conditional conservatism leads to an increase of 0.23 units in operating cash flow.

The variable of unconditional conservatism has a positive relationship with the operating cash flow variable, and the t-statistic of 2.22 indicates the significance of this effect. This means that with an increase in unconditional conservatism, the operating cash flow increases. Based on the estimated coefficient, an increase of one unit in unconditional conservatism leads to an increase of 0.11 units in operating cash flow. The financial leverage coefficient is negative and equal to 0.31, with a t-statistic of 3.01. This means that with an increase in financial leverage, operating cash flow decreases. Based on the estimated coefficient, an increase of one unit in financial leverage results in a decrease of 0.31 units in operating cash flow.

5 Discussion and conclusion

This study aims to examine the impact of conditional and unconditional conservatism on operating cash flow. The management of cash flows is defined as the ability of managers to select activities that alter financial reporting to mislead external users by creating positive outcomes, in an effort to achieve bonus contracts. One way to reduce the agency problem is through conservatism. Conservatism can be viewed as a structure that, when applied correctly, addresses many agency issues and informational asymmetries that generally arise from the growing gap between managers and the providers of financial resources in business entities.

Based on the research findings, it was observed that conditional conservatism has a direct and significant impact on operating cash flow. These findings are consistent with the studies of Biddle et al. [7], Watts and Zuo [29], and Donovan et al. [9]. An increase in conditional conservatism can provide strong information about the current performance of companies. Additionally, the identification of losses may prompt managers to address deficiencies within the company. Therefore, the higher the quality of disclosure, which reflects more conservatism in financial statements, the greater the operating cash flows of companies. Conservative reporting, by reducing future stock prices, leads to increased information accuracy, enhanced company value, and improved operating cash flows. It was also observed that unconditional conservatism has a direct and significant impact on operating cash flow, which aligns with the findings of Biddle et al. [7], Watts and Zuo [29], and Donovan et al. [9]. Unconditional conservatism, based on healthy skepticism, helps reduce the effects of information asymmetry and agency costs, thereby increasing operating cash flow. Implementing conservatism enhances credit ratings and reduces the company's information risk; consequently, investor confidence in the company's financial reports increases, leading to higher operating cash flows.

It is recommended that managers pay attention to the findings of this study. Furthermore, based on these results, managers and accountants are advised to carefully determine the level of conservatism applied in financial statements during their preparation. Since it is challenging and almost impossible to determine an optimal level of conservatism, standard-setting organizations should strive to approximate this level. It is suggested to adopt an appropriate level of conditional and unconditional conservatism that maximizes stakeholder wealth. Additionally, shareholders, investors, and market analysts should recognize that a portion of the capital cost for companies using a conservative approach arises from this approach. Therefore, the intrinsic value of shares in companies adopting conditional and unconditional conservatism is likely higher than the market value of such securities.

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