

Original Research Article

The Relationship between Corporate Governance Factors and Accounting Conservatism (Based on Basu's Model Evaluation)

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The purpose of this study is to investigate the effect of corporate governance, the ownership percentage of major and institutional shareholders, auditor change, audit committee independence, and information asymmetry on accounting conservatism. Basu's model (1997) has been used to evaluate the relationship among variables. The present study is a post-event study, and the research sample includes 165 companies during eleven years from 2010 until 2020. Panel data and fixed effects model have been used to analyze the relationship between research variables. The results of the Basu's model test in measuring accounting conservatism show that in the sample companies, variables of board independence, the ownership percentage of institutional investors have a positive and significant relationship with accounting conservatism and the CEO duality has a negative and significant relationship with accounting conservatism. On the other hand, variables of board size, ownership concentration, auditor rotation, auditor tenure, independence of audit committee, and information asymmetry have no significant relationship with accounting conservatism. Also, among these variables, the separation of the CEO from the board's chairman has the most significant impact on accounting conservatism.

Keywords: Board Independence, Ownership Concentration, Institutional Ownership, CEO Duality, Auditor Tenure.

JEL Classification: G10, L1, M41, M42

1 Introduction

Basu (1997) interprets conditional conservatism as capturing accountants' tendency to require a higher degree of verification for recognizing good news than bad news in financial statements. Accounting conservatism plays a vital role in facilitating the flow of firm-specific information from corporate

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insiders to outside investors and helps to improve the company's information environment (Hu et al., 2014). Conservatism is a key characteristic of a company's accounting system that can help managers reduce heavy losses, thereby increasing firm and equity values (Watts, 2003; Ahmed & Duellman, 2007).

Managers may opportunistically increase assets and revenues or reduce debts to increase personal rewards and wealth. Conservatism would understate assets and earnings and offset managers' opportunistic behavior (Watts, 2003). Thus, conditional conservatism increases the usefulness of reported accounting information. Therefore, conditional conservatism is demanded by shareholders, lenders and other stakeholders because it gives them a clear view of the strengths and weaknesses of the company and helps them to choose the right investment (Guay & Verrecchia, 2007; Iatridis, 2011). Watts (2003) argues that accounting conservatism is an efficient contract that helps in reducing losses caused by agency problems.

Various factors can affect accounting conservatism. Among the most important in-company factors are the leading corporate factors and ownership structure that significantly impact how decisions are made, the application of various procedures, decisions related to financing, and investment by management. Therefore, it is predicted that corporate governance variables and ownership structure are among the most important factors affecting the company's application of accounting conservatism. Also, other important variables are the impact of the independent auditor and the internal audit committee on the demand for conservative procedures by the company. Information asymmetry between investors and managers also creates a demand for accounting conservatism.

Fama and Jensen (1983) introduce the board of directors as the main factor of the organization's monitoring and control system. Given that directors need reliable information to monitor, and conservatism can help in reducing corporate losses, it is interesting to examine the relationship between conservatism and board characteristics (Ahmed & Duellman, 2007).

Liu and Wang (2006) studied the influence of corporate governance on accounting conservatism and found that debt and ownership structure affects accounting conservatism (Xu & Lu, 2008).

Hu et al. (2014) found that conservatism has a positive relationship with improving the corporate information environment. Accounting conservatism is higher in companies that have appropriate corporate governance

mechanisms. Companies with more independent executives identify losses more timely than companies with fewer independent managers (Beekes et al., 2004; Ahmed & Duellman, 2007; Lara et al., 2009; Amran & Abdul Manaf, 2014). Agency theory expresses that a higher proportion of non-executive directors increases the board's effectiveness. Previous studies show that companies with a higher proportion of non-executive directors on the board are more conservative (Beekes et al., 2004; Ahmed & Duellman, 2007; Lim, 2011; Amran & Abdul Manaf, 2014).

LaFond and Watts (2008) found that higher information asymmetries between managers and shareholders leads to more conservative reporting. Conservatism reduces the motivation and ability of managers to exaggerate revenue (Watts, 2003). To the extent that managerial compensation is tied to earnings, conservatism promptly penalizes managers for their failures (economic losses). However, they postpone economic gains until their benefits are realized, thereby reduces managers' incentive and ability to overstate the value they create (Ramalingegowda & Yu, 2012).

On the other hand, the separation of the CEO and the chair of the board of directors is an indicator of the power and oversight motivations of the external director because if the CEO is also the chairman of the board, they are more likely to influence appointments and selections than when the position has been separated (Ahmed & Duelman, 2007).

Therefore, considering the importance of corporate governance variables, ownership structure, and auditing factors, as well as the impact of these variables on the use of conservative methods by management, this study investigates the relationship among the variables of board characteristics as corporate governance factors (Includes board independence, board size, CEO duality), ownership structure (ownership concentration, ownership of institutional investors), auditor characteristics (auditor rotation and auditor tenure), audit committee independence, and information asymmetry with conditional accounting conservatism according to Basu's model (1997). Another purpose is to determine which variables have the most significant impact on accounting conservatism.

Most of the existing literature focuses on the influence of one specific factor on accounting conservatism rather than on their combined effects. Therefore, it is important to study the impact of more influential variables in-company on accounting conservatism. The necessity of this research is to investigate the impact of these variables together on the application of conservative procedures.

The framework of the article is as follows: The second section of the article includes expressing the literature review and research hypotheses. In the third section, the research design, the variables and the research model are stated. The fourth section contains the research findings and the result of the research model test. Also, the conclusion is stated in the last part of the article.

2 Literature Review and Research Hypothesis

Basu (1997) interprets conservatism as capturing accountants' tendency to require a higher degree of verification for recognizing good news than bad news in financial statements. For instance, Statement of Financial Accounting Concepts (SFAC) 2 (FASB, 1980), para. 95 states: "if two estimates of amounts to be received or paid in the future are about equally likely, conservatism dictates using the less optimistic estimate."

Conservatism is an essential attribute of high-quality reporting, and it is often used to assess the quality of companies accounting reports. Ahmed and Duellman (2007) argue that accounting conservatism can help reduce agency costs of firms.

In an efficient market, economic events are reflected in share prices on a timely basis. Thus, the stock return can be used as a proxy for good or bad news, and accounting conservatism is a tool to increase the quality of accounting information.

According to Kieso et al. (2016), relatively associated with minimum unwanted consequences, accounting conservatism is an approach to take when in doubt about choosing a procedure that would not unfavorably reflect the assets and profit higher than the actual values. Conservative behavior is an approach that prioritizes lower incomes (compared to higher incomes) and higher costs (compared to lower costs), and thus while identifying the unpredicted losses, it does not identify the unrealized profits.

Also, companies that seek to increase capital in financial markets are expected to provide more useful accounting information to market participants in order to show a better prospects of the capital issue (Bushman & Smith, 2001; Iatridis, 2011).

In this study, we want to investigate the impact of various factors on the use of accounting conservatism according to the Basu model, which is described as follows.

2.1 Relation between Board Independence and Accounting Conservatism (BI)

An independent board with more external directors is a vital governance mechanism designed to reduce conflicts of interest between directors and shareholders. Research has shown that independent directors are active observers who play an important role in limiting the behavior of managers in their personal interests (Brickley & James, 1987; Duchin et al., 2010; Knyazeva et al., 2013; Lu & Wang, 2018).

Although outside directors are essential in ensuring the board's independence, they will not have sufficiently strong incentives to monitor (and, if necessary, confront) managers if they do not have significant equity stakes in the firm (Jensen, 1993). Prior researches show that higher ownership of outside director is associated with less fraud in financial statements and company's higher ratings, suggesting that outside director ownership enhances monitoring incentives for directors (Ahmed & Duellman, 2007).

However, a board with more inside directors will face less monitoring, and in this situation, managers may adopt an aggressive accounting policy (Xia & Zhu, 2009; Honarbakhsh et al., 2020).

Lin et al. (2012) show that listed companies in China have accounting conservatism in their accounting policies. An increase in the number of independent directors on the board leads to an increase in accounting conservatism.

Enache and Garciaa-Meca (2019), in a study, have classified independent managers according to skills, abilities, communication, and knowledge in three different categories: business experts, support specialists, and other experts in the community. Their study confirms that all independent managers are not equally effective in monitoring and contractual activities and that certain types of independent managers, such as politicians, can even reduce revenue sensitivity to bad news, and it is vital to differentiate managers according to their skills and abilities to understand how the board affects accounting conservatism (Honarbakhsh et al., 2020). Defereent studies indicate that a higher proportion of independent directors on board is more conservative (Beekes et al., 2004; Ahmed & Duellman, 2007; Lim, 2011; Lin, 2012; Amran & Abdul Manaf, 2014). As a result, according to the above, the following hypothesis is proposed:

Hypothesis 1: There is a meaningful relationship between board independence and accounting conservatism.

2.2 Relation between Board Size and Accounting Conservatism (BS)

On the one hand, it is stated that the larger boards than the smaller boards are less efficient due to coordination problems and engagement with a large group (Jensen, 1993). Large boards can also suffer from the issue of "free ride," meaning that each board member relies on other members to oversee management (Honarbakhsh et al., 2021). Hermalin and Weisbach (2003) discussed some evidence of these problems, and they stated the relationship between board size and company value is negative.

The competitive view is that large boards allow managers to specialize. For example, Klein (2002) found that the independence of the audit committee was positively correlated with the size of the board. Therefore, a giant board leads to each manager's most minor assignment of tasks to enable managers to specialize. More expertise can lead to more effective monitoring. Board size is measured as the natural logarithm of the total number of directors. Finally, the percentage of outside managers' stocks is used to indicate managers' supervisory. Although external managers are essential in ensuring the board's independence, if they do not have significant shares in the company; they do not have a strong enough motivation to supervise managers (Ahmed & Duellman, 2007). Experimental findings have shown that board size is inversely related to accounting conservatism (Mohamed Yunos et al., 2014).

As a result, according to the above, the following hypothesis is proposed:

Hypothesis 2: There is a meaningful relationship between board size and accounting conservatism.

2.3 Relation between CEO Duality and Accounting Conservatism (CEOD)

We measure CEO/chair duality as a bidirectional variable set equal to one if the same managers occupy the positions of CEO and chairman of the board, otherwise zero (Ahmed & Duellman, 2007).

The separation of the roles of CEO from the chairman increases the independence of the board and improves the monitoring of management (Xia & Zhu, 2009). Agency theory argues that the chief executive officer (CEO) and chairman of the board's roles should be separated since the board's responsibility is to monitor the management, including the CEO. However, the stewardship theory perceives that the CEO duality improves leadership as there is no information breakdown between the CEO and the board (Honarbakhsh et al., 2020). Jensen (1993) argues that the separation of the

role of CEO and chairman of the board will increase the independence of the board, which will improve management oversight.

Despite this subject, it is stated that firms with CEOs who simultaneously serve as chairpersons of the boards tend to be more conservative (Chi et al., 2009).

Nevertheless, Muniandy (2007); Krishnan and Visvanathan (2008) found that separating the CEO from the board's chairmanship increases accounting conservatism.

As a result, according to the above, the following hypothesis is proposed:

Hypothesis 3: There is a meaningful relationship between CEO duality and accounting conservatism.

2.4 Relation between Ownership Concentration and Accounting Conservatism (Concentrate)

Shareholders can influence on the company's important policies, including financing and investment. Most researches show that the greater the ownership concentration, the less the application of accounting conservative (Fan & Wong, 2002; Song, 2015; Lin et al., 2018). All these studies argue that firms with concentrated ownership prefer to resolve information asymmetry through private information instead of public financial information. Accordingly, they reduce the demand for accounting conservatism. These studies imply that controlling shareholders tend to play an expropriation role and seize the interests of minority shareholders. Because the largest shareholders usually act solely in their self-interest (Lin et al., 2018; Honarbakhsh et al., 2021).

As a result, according to the above, the following hypothesis is proposed:

Hypothesis 4: There is a meaningful relationship between ownership concentration and accounting conservatism.

2.5 Relation between Ownership of Institutional Investors and Accounting Conservatism (Inv)

Institutional investors play a critical role in corporate governance in financial markets. Jensen (1993) argues that institutional investors are active observers who are important to the good functioning of the corporate governance system because their independence and financial interests lead to impartial oversight of the company's management and policies. Consequently, institutional investors require timely and reliable information to better monitor the firm's activities and participate in business strategy making (Jensen, 1993; Bushman et al., 2004; Liu, 2019). In line with this view, Gaspar et al. (2005) and Chen

et al. (2007) document that institutional investors with long investment horizons are more likely to monitor and communicate with corporate management consistently and thus, demand higher levels of accounting conservatism. Further, Ramalingegowda and Yu (2012) provide empirical evidence that greater institutional ownership is associated with more conservative financial reporting in US firms (Liu, 2019).

Ball (2001) and Watts (2003) argue that institutional investors are an important source of demand for accounting conservatism as a good governance tool. Recent empirical evidence supports this proposition. Ramalingegowda and Yu (2012) state: "consistent with equity investors creating demand for conservatism, LaFond and Roychowdhury (2008) show that conservatism is greater when the separation of ownership and control is more pronounced. These findings raise an important question: Which equity investors demand conservatism? A large group of research suggest that individual and small investors trade for reasons unrelated to information, such as liquidity or rank speculation (Odean, 1999; Barber & Odean, 2008; Barber et al., 2009). Accordingly, it is very unlikely that individuals will follow up on whether or not the company frequently uses conservative methods, while institutional investors have this important complexity and capability (Hand, 1990; Chan & Lakonishok, 1995; Walther, 1997; Sias et al., 2006). Therefore, if conservative reporting creates benefits for the company, institutional investors understand these benefits and demand conservative practices from company managers. On the other hand, as institutional investors likely have privileged access to management and inside information, they may rely more on direct monitoring and less on monitoring through accounting numbers (Ramalingegowda & Yu, 2012).

As a result, according to the above, the following hypothesis is proposed:

Hypothesis 5: There is a meaningful relationship between institutional investors' ownership and accounting conservatism.

2.6 Relation between Auditor Rotation and Accounting Conservatism (Rotation)

The concern of the threat of auditor tenure on audit quality has been the subject of regulatory intervention. Proponents of mandatory auditor rotation have alleged that the more extended auditor–client relationships impair auditor independence, leading to auditors accepting clients' more aggressive accounting. However, the opponents of mandatory auditor rotation claim no evidence of this impaired auditor independence; instead, they provide

evidence that shows a positive relationship between auditor tenure and audit quality (Li, 2010).

In practice, accounting conservatism is approved by auditors, and they mostly support conservative accounting practices (Ball et al., 2000). Lack of consensus among managers and auditors on applying conservative accounting practices encourages managers to change auditors.

Mauts and Sharaf (1961) acknowledged that a long-term relationship raises doubts about the auditor's independence. Krishnan (2007) has emphasized a direct relationship between conservatism and auditor change, and companies change the auditor because of dissatisfaction with the auditor's emphasis on using conservative accounting procedures (Honarbakhsh et al., 2020). Li (2010) said: Myers et al. (2003) Found that the auditor's tenure was positively correlated with discretionary accruals as a representative of earnings quality. Ghosh and Moon (2005) document a positive association between market perception of audit quality (measured by earnings response coefficient) and auditor tenure. These studies generally find little evidence supporting mandatory auditor rotation: That is, the findings show that the quality of auditing and financial reporting increases during the relationship between the auditor and the client. It implies that mandatory limits on the duration of the auditor–client relationship will likely impose unintended costs on capital markets."

As a result, according to the above, the following hypothesis is proposed:

Hypothesis 6: There is a meaningful relationship between auditor rotation and accounting conservatism.

2.7 Relation between Auditor Tenure and Accounting Conservatism (Tenure)

Geiger and Raghunandan (2002) suggest that auditors are less likely to modify opinions on financial statements immediately preceding bankruptcy during the initial years of engagement with a client. Carcello and Nagy (2004) find that fraudulent reports are more common in the early years of an auditor-client relationship. Stanley and DeZoort (2007) find a negative relation between the length of the auditor–client relationship and the likelihood of financial restatement. On the other hand, Li (2010) said, "regulators and the press allege that a long-term auditor–client relationship creates a level of closeness that impairs auditor independence and reduces audit quality. A long-term relationship is likely to lead to a close relationship between the auditor and management, and the likelihood of the auditor surrendering to management demands increases, and the likelihood of auditor-employer collusion

increases. Proponents of mandatory auditor rotation claim that auditor rotation can create a fresh new 'eye' on management and then reestablish a clean atmosphere between auditors and their clients to maintain auditors' objectivity. Dopuch et al. (2001) experimentally assess whether mandatory rotation increases independence by examining auditors' willingness to issue a report biased in favor of management. The results are consistent with the prediction that mandatory auditor rotation can improve an auditor's independence".

As a result, according to the above, the following hypothesis is proposed:

Hypothesis 7: There is a meaningful relationship between auditor tenure and accounting conservatism.

2.8 Relation between Independent Directors on the Audit Committee and Accounting Conservatism (IDAC)

Researches show that audit committees with more independent directors improve the quality of corporate financial reporting by employing specific auditors, utilizing an internal audit unit, and more conservatism (Goodwin, 2003).

Some evidence suggests that the independence of the audit committee reduces agency disputes (Rahmat et al., 2009). However, the analysis conducted by Pomeroy and Thornton (2008) shows that the audit committee independence effectively improves the quality of financial statements.

Krishnan and Visvanathan (2008) found that the independence of the audit committee does not affect accounting conservatism in American companies. Empirical studies have shown that the independence of the audit committee has led to reduced debt costs, reduced fraud, and increased accounting conservatism (Owens-Jackson et al., 2009; Honarbakhsh et al., 2020).

As a result, according to the above, the following hypothesis is proposed:

Hypothesis 8: There is a meaningful relationship between independent directors on the audit committee and accounting conservatism.

2.9 Relation between Information Asymmetry and Accounting Conservatism (INFOASY)

Accounting conservatism can serve as a mechanism to balance managers' and shareholders' interests and reduce the effects of information asymmetry (Cullinan et al., 2012; Honarbakhsh et al., 2021).

Conservative reporting helps reducing the information asymmetry between managers and stakeholders and reduces agency costs (Watts, 2003).

LaFond and Watts (2008) find that conservatism reduces information asymmetry and that information asymmetry between inside and outside equity investors generates the demand for conservatism in financial statements.

A principal-agent relation exists among creditors, shareholders, and management (Jensen & Meckling, 1976), That information asymmetry among them creates a demand for accounting conservatism (LaFond & Watts, 2008; Xia & Zhu, 2009).

As a result, according to the above, the following hypothesis is proposed:

Hypothesis 9: There is a meaningful relationship between information asymmetry and accounting conservatism.

3 Research Design

In this research, cross-sectional information is used. The research was performed in an eleven-year period during 2010-2020. The sampling method was an elimination method and finally, 165 companies were selected as samples, and panel data and fixed effects model were used to analyze the relationship among research variables.

3.1 Dependent Variable

In this study, the degree of accounting conservatism is a dependent variable that is calculated based on Basu's model (1997).

3.2 Independent Variables

These variables are calculated as follows:

Board Independence (BI): We measure board independence as the fraction of outside directors on the board (Lu & Wang, 2018). Finally, we use the percentage of outside directors as a proxy for the strength of outside directors monitoring incentives (Amran & Abdul Manaf, 2014).

Board Size (BS): We measure board size as the natural log of the total number of directors on the board (Ahmed & Duellman, 2007).

CEO duality (CEOD): We measure CEO/chair duality as a bidirectional variable set equal to one if the same managers occupy the positions of CEO and chairman of the board, otherwise zero (Ahmed & Duellman, 2007).

Ownership concentration (Concentrate): Ownership concentration is the percentage of the shares held by the largest single shareholder (Cullinan et al., 2012).

Ownership of Institutional investors (Inv): Percentage of shares held by institutional investors (Chi et al., 2009; Mosavi et al., 2013).

Auditor rotation (Rotation): It is a dummy variable that is equal to one for companies that have changed their auditor in the study year and otherwise zero (Li, 2010).

Auditor tenure (Tenure): Auditor tenure is the number of years since the auditors have been employed (Li, 2010)

Independent directors on the audit committee (IDAC): Proportion of independent directors on the audit committee (Mohamed Yunos et al., 2014)

Information asymmetry (INFOASY): To measure the information asymmetry between investors, we use the domain of suggested price of buy and sell of shares (Venkatesh & Chiang, 1986). The model is as follows:

$$\text{Information asymmetry}_{i,t} = \frac{(AP-BP) * 100}{(AP+BP)/2} \quad (1)$$

Information asymmetry = the domain of difference of suggested buy and sell price of shares for firm *i* in fiscal year *t*.

AP = the average suggested sell price of shares for firm *i* in fiscal year *t*.

BP = the average suggested buy price of shares for firm *i* in fiscal year *t*.

Accordingly, if the domain of difference of suggested buy and sell price of shares is a larger digit, it indicates more information asymmetry. In testing hypotheses, the absolute value of the resulting digit is used.

3.3 Control Variables

These variables include firm age, return of asset, sales growth, agency costs which are calculated as follows:

Firm age (Age): The number of years the company has been listed on the stock exchange before 2010 (Chi et al., 2009).

Return of asset (ROA): Net profit before extraordinary items divided by total assets (Iatridis, 2011).

Sales growth (Salegrow): Sales changes during the period divided by the sale at the beginning of the period (Garcia Lara et al., 2016).

Agency costs (Agency): Agency costs are calculated by dividing the sum of administrative, distribution and sales expenses by the sum of end-of-period assets (Henry, 2010).

3.4 Research Model

Basu (1997) defines conservatism as the accountant's tendency to use a higher degree of validity to identify good news in profit than to identify bad news in loss. Since annual returns capture news arrival during the year, this definition has implications for the earnings–return relation. In a regression of annual

earnings on returns, Basu (1997) predicts and finds that earnings respond more to negative returns (bad news) than to positive returns (good news). He calls this differential response the asymmetric timeliness of earnings and uses it to measure conservatism (Roychowdhury & Watts, 2006). Basu's model is as follows:

$$X_{it} / P_{it-1} = B_0 + B_1 DR_{i,t} + B_2 RET_{i,t} + B_3 DR_{i,t} * RET_{i,t} + \varepsilon_{i,t}$$

Where X_{it}/P_{it-1} is the earnings per share for firm i in fiscal year t scaled by beginning price; X_{it} is net income before extraordinary items divided by the number of common shares outstanding; P_{it-1} is the price of per share at the beginning of fiscal year t ; $RET_{i,t}$ is the stock return for firm i , $DR_{i,t}$ is a dummy variable equal to one if the stock return is negative, zero otherwise; and $\varepsilon_{i,t}$ is the error term in year t for firm i . In the model, β_2 measures the association between earnings and the positive abnormal return rate, suggesting timeliness of the recognition of good news in earnings. $\beta_2 + \beta_3$ reflect the relationship between earnings and the negative abnormal return rate, namely, the timeliness of confirming bad news. B_3 , the coefficient of conservatism, indicates the gap in the timeliness of the recognition of bad news and good news. In conservative accounting, bad news is reported more quickly than good news, such that a positive β_3 implies the presence of conservatism, and the higher the β_3 , the greater the extent of the conservatism (Li et al., 2018).

The following model is used to examine the relationship among accounting conservatism and other variables.

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$$\begin{aligned}
X_{it}/P_{it-1} = & B_0 + B_1DR_{i,t} + B_2RET_{i,t} + B_3DR_{i,t} * RET_{i,t} + B_4BI_{i,t} + \\
& B_5BI_{i,t} * DR_{i,t} + B_6BI_{i,t} * RET_{i,t} + B_7BI_{i,t} * DR_{i,t} * RET_{i,t} + B_8BS_{i,t} + \\
& B_9BS_{i,t} * DR_{i,t} + B_{10}BS_{i,t} * RET_{i,t} + B_{11}BS_{i,t} * DR_{i,t} * RET_{i,t} + \\
& B_{12}CEOD_{i,t} + B_{13}CEOD_{i,t} * DR_{i,t} + B_{14}CEOD_{i,t} * RET_{i,t} + B_{15}CEOD_{i,t} * \\
& DR_{i,t} * RET_{i,t} + B_{16}Concentrate_{i,t} + B_{17}Concentrate_{i,t} * DR_{i,t} + \\
& B_{18}Concentrate_{i,t} * RET_{i,t} + B_{19}Concentrate_{i,t} * DR_{i,t} * RET_{i,t} + \\
& B_{20}Inv_{i,t} + B_{21}Inv_{i,t} * DR_{i,t} + B_{22}Inv_{i,t} * RET_{i,t} + B_{23}Inv_{i,t} * DR_{i,t} * \\
& RET_{i,t} + B_{24}Rotation_{i,t} + B_{25}Rotation_{i,t} * DR_{i,t} + B_{26}Rotation_{i,t} * \\
& RET_{i,t} + B_{27}Rotation_{i,t} * DR_{i,t} * RET_{i,t} + B_{28}Tenure_{i,t} + \\
& B_{29}Tenure_{i,t} * DR_{i,t} + B_{30}Tenure_{i,t} * RET_{i,t} + B_{31}Tenure_{i,t} * DR_{i,t} * \\
& RET_{i,t} + B_{32}IDAC_{i,t} + B_{33}IDAC_{i,t} * DR_{i,t} + B_{34}IDAC_{i,t} * RET_{i,t} + \\
& B_{35}IDAC_{i,t} * DR_{i,t} * RET_{i,t} + B_{36}Infoasy_{i,t} + B_{37}Infoasy_{i,t} * DR_{i,t} + \\
& B_{38}Infoasy_{i,t} * RET_{i,t} + B_{39}Infoasy_{i,t} * DR_{i,t} * RET_{i,t} + B_{40}Age_{i,t} + \\
& B_{41}Age_{i,t} * DR_{i,t} + B_{42}Age_{i,t} * RET_{i,t} + B_{43}Age_{i,t} * DR_{i,t} * RET_{i,t} + \\
& B_{44}ROA_{i,t} + B_{45}ROA_{i,t} * DR_{i,t} + B_{46}ROA_{i,t} * RET_{i,t} + B_{47}ROA_{i,t} * \\
& DR_{i,t} * RET_{i,t} + B_{48}Salegrow_{i,t} + B_{49}Salegrow_{i,t} * DR_{i,t} + \\
& B_{50}Salegrow_{i,t} * RET_{i,t} + B_{51}Salegrow_{i,t} * DR_{i,t} * RET_{i,t} + \\
& B_{52}Agency_{i,t} + B_{53}Agency_{i,t} * DR_{i,t} + B_{54}Agency_{i,t} * RET_{i,t} + \\
& B_{55}Agency_{i,t} * DR_{i,t} * RET_{i,t} + \varepsilon_{i,t}
\end{aligned} \tag{4}$$

Multiplication of independent and control variables in DR * RET provides how they relate to accounting conservatism ($\beta_3, \beta_7, \beta_{11}, \beta_{15}, \beta_{19}, \beta_{23}, \beta_{27}, \beta_{31}, \beta_{35}, \beta_{39}, \beta_{43}, \beta_{47}, \beta_{51}, \beta_{55}$).

4 Finding

4.1 Descriptive Statistics

Table 1 displays the descriptive statistics of research variables. The proximity of the mean with median indicates the symmetry of the data distribution.

Table 1
Summary statistics

	Mean	Median	Maximum	Minimum	Std. Dev.	N
X/P	0.210485	0.184414	7.023845	-2.109875	0.220764	1815
DR	0.378526	0	1	0	0.418073	1815
RET	0.285469	0.150543	8.108279	-0.892085	0.682051	1815
BI	0.612341	0.58	1	0	0.203059	1815
BS	0.680285	0.635998	0.852087	0.598524	0.024208	1815
CEOD	0.289882	0	1	0	0.402038	1815
CONCENTRATE	0.499802	0.503	0.991	0.02	0.195281	1815
INV	0.703346	0.791	0.991	0.01	0.222571	1815
ROTATION	0.202093	0	1	0	0.382674	1815
TENURE	4.928310	4	18	1	4.552087	1815
IDAC	0.311308	0	1	0	0.320816	1815
INFOASY	0.427209	0.095086	4.025604	0.000157	0.642085	1815
AGE	18.02084	13	53	1	8.107623	1815
ROA	0.140837	0.124381	0.768524	-0.510837	0.140827	1815
SALEGROW	0.228571	0.158742	5.108452	-0.798521	0.418076	1815
AGENCY	0.061807	0.059821	0.372058	0.003308	0.044801	1815

Source: Research Findings

X/P= Earnings per share-to-price per share; DR=dummy variable equal to one if the return is negative, otherwise zero, RET= the stock return; BI= Board Independence; BS= Board Size; CEOD= CEO duality; CONCENTRATE= Ownership concentration; INV= Ownership of Institutional investors; ROTATION = Auditor rotation; Tenure= Auditor tenure; IDAC= Independent directors on audit committee; INFOASY= Information asymmetry; Age= Firm age; ROA=Return of asset; Salegrow= Sales growth; AGENCY= Agency costs.

4.2 Correlation Matrix

Table 2 shows the correlation matrix of research variables. Correlation of variables in the range $\{-1, 1\}$ is shown.

Table 2
Correlation matrix

	X/P	DR	RET	BS	BI	Concentrate	INV	CEOD	ROTATION	TENURE	IDAC	INFOASY	AGE	ROA	SALEGROW	AGENCY
X/P	1.000000															
DR	-0.199573	1.000000														
RET	0.301174	-0.362517	1.000000													
BS	0.011473	0.010876	0.016387	1.000000												
BI	0.033820	0.003140	0.011209	0.070208	1.000000											
Concentrate	0.029973	0.016991	-0.000682	-0.081851	-0.068420	1.000000										
INV	0.021342	0.019207	-0.033082	-0.041288	0.020228	0.495087	1.000000									
CEOD	-0.008117	-0.018120	-0.002113	0.003031	-0.171830	0.039083	-0.025517	1.000000								
ROTATION	-0.019283	-0.022807	0.001005	0.033215	0.003884	-0.002204	-0.035586	-0.017715	1.000000							
TENURE	-0.062206	0.001221	-0.006163	0.019994	-0.052570	-0.040018	-0.000591	0.070112	-0.303381	1.000000						
IDAC	-0.060207	0.008009	-0.007119	-0.015510	0.013309	0.020973	-0.001431	0.090207	0.035084	-0.006118	1.000000					
INFOASY	-0.002920	-0.019923	-0.018199	0.029982	-0.013852	-0.019104	0.039920	-0.049997	-0.005967	-0.040018	-0.089241	1.000000				
AGE	0.033320	0.036706	0.017738	-0.009021	0.001440	-0.040983	-0.180537	0.039927	-0.001905	0.275280	0.199274	-0.040208	1.000000			
ROA	0.452235	0.170715	0.191182	-0.011950	0.142423	0.050664	0.133318	-0.044108	-0.033308	-0.072775	0.012208	0.030307	-0.141182	1.000000		
SALEGROW	0.188829	-0.190120	0.203085	-0.031209	0.029998	0.007720	0.009028	-0.005520	-0.014251	-0.022206	0.058867	-0.001817	0.043395	0.277415	1.000000	
AGENCY	0.055523	0.070719	0.029257	-0.050105	-0.003105	-0.022741	-0.066620	-0.027764	0.018825	-0.027226	0.033328	-0.008082	0.091109	-0.086627	0.033998	1.000000

Source: Research Findings

4.3 The Result of the Research Model Test

Results of examining the impact of variables of board characteristics (board independence, board size, CEO duality), ownership structure (ownership concentration, ownership of institutional investors), auditor characteristics (auditor rotation and auditor tenure), audit committee independence, and information asymmetry on accounting conservatism according to Basu's model (1997) are presented in Table 3.

Table 3
Regression results of research model test

Variable		Coefficient	Std. Error	t-Statistic	Prob.
C	β_0	0.053128	0.018845	2.819208	0.0049
DR	β_1	0.204687	0.087913	2.328286	0.0200
RET	β_2	0.245810	0.063142	3.892972	0.0001

DR*RET	β_3	-0.065937	0.023397	-2.818234	0.0049
BI	β_4	0.075094	0.094511	0.794553	0.4270
BI*DR	β_5	-0.044944	0.055165	-0.814726	0.4153
BI*RET	β_6	0.211393	0.109503	1.930480	0.0537
BI*DR*RET	β_7	0.141559	0.015471	2.686254	0.0073
BS	β_8	0.238840	0.098832	2.416630	0.0158
BS*DR	β_9	0.125360	0.207427	0.604357	0.5457
BS*RET	β_{10}	0.263443	0.152835	1.723704	0.0849
BS*DR*RET	β_{11}	0.659891	0.363610	1.814834	0.0697
CEOD	β_{12}	0.589392	0.058886	10.00901	0.0000
CEOD*DR	β_{13}	-0.319039	0.231227	-1.379768	0.1678
CEOD*RET	β_{14}	0.219962	0.274994	0.799877	0.4239
CEOD*DR*RET	β_{15}	-0.416620	0.187458	-2.222477	0.0264
CONCENTRATE	β_{16}	-0.000393	0.000315	-1.249945	0.2115
CONCENTRATE *DR	β_{17}	0.000220	0.000527	0.416921	0.6768
CONCENTRATE *RET	β_{18}	-0.000557	0.000375	-1.486377	0.1374
CONCENTRATE *DR*RET	β_{19}	0.001178	0.001786	0.659467	0.5097
INV	β_{20}	0.001563	0.019137	0.081676	0.9349
INV*DR	β_{21}	0.017151	0.017335	0.989423	0.3226
INV*RET	β_{22}	0.023764	0.012142	1.957247	0.0505
INV*DR*RET	β_{23}	0.067820	0.033238	2.040461	0.0415
ROTATION	β_{24}	0.548398	0.321746	1.704444	0.0885
ROTATION *DR	β_{25}	-0.385898	0.359857	-1.072364	0.2837
ROTATION *RET	β_{26}	-0.262099	0.152971	-1.713390	0.0868
ROTATION *DR*RET	β_{27}	0.222481	0.688530	0.323124	0.7466
TENURE	β_{28}	-0.029816	0.020221	-1.474487	0.1405
TENURE*DR	β_{29}	0.072769	0.042490	1.712636	0.0870
TENURE*RET	β_{30}	-0.145633	0.528798	-0.275404	0.7830
TENURE*DR*RET	β_{31}	-0.039131	0.073059	-0.535614	0.5923
IDAC	β_{32}	-0.009747	0.008036	-1.212873	0.2254
IDAC*DR	β_{33}	0.001085	0.012287	0.088272	0.9297
IDAC*RET	β_{34}	0.002309	0.008665	0.266501	0.7899
IDAC*DR*RET	β_{35}	-0.028536	0.033890	-0.842001	0.3999
INFOASY	β_{36}	-0.013403	0.007656	-1.750811	0.0802
INFOASY*DR	β_{37}	0.006762	0.009085	0.744292	0.4568
INFOASY*RET	β_{38}	0.009843	0.006992	1.407859	0.1594
INFOASY*DR*RET	β_{39}	-0.048102	0.036197	-1.328881	0.1841
AGE	β_{40}	-0.087921	0.053817	-1.633706	0.1025
AGE*DR	β_{41}	0.039360	0.021365	1.842248	0.0656
AGE*RET	β_{42}	0.025742	0.020576	1.251045	0.2111
AGE*DR*RET	β_{43}	0.080002	0.013781	5.805411	0.0000
ROA	β_{44}	0.090904	0.071929	1.263798	0.2065
ROA*DR	β_{45}	-0.059689	0.030716	-1.943266	0.0522
ROA*RET	β_{46}	-0.067432	0.036430	-1.850969	0.0644
ROA*DR*RET	β_{47}	0.393166	0.020065	4.643275	0.0000
SALEGROW	β_{48}	-0.000547	0.001605	-0.341073	0.7331
SALEGROW*DR	β_{49}	0.001111	0.002516	0.441788	0.6587
SALEGROW*RET	β_{50}	0.002026	0.001797	1.127335	0.2598
SALEGROW*DR*RET	β_{51}	-0.002533	0.002740	-0.924482	0.3554
AGENCY	β_{52}	-0.015043	0.004272	-3.520838	0.0004
AGENCY*DR	β_{53}	0.010128	0.005509	1.838262	0.0662
AGENCY*RET	β_{54}	0.009220	0.004255	2.166520	0.0304
AGENCY*DR*RET	β_{55}	0.025935	0.012304	2.107838	0.0352

Weighted Statistics

R-squared	0.772185	Mean dependent var	0.333087
Adjusted R-squared	0.743342	S.D. dependent var	0.411973

S.E. of regression	0.192107	Sum squared resid	57.20853
F-statistic	18.320495	Durbin-Watson stat	1.782731
Prob(F-statistic)	0.000000		

Source: Research Findings

The results of the fixed effects model indicate that the variables of board independence, CEO duality, ownership of institutional investors, firm age, return of assets, and agency costs are significant at the 5% level and have a significant relationship with accounting conservatism. The significance of the Fisher statistic is zero, indicating the overall significance of the estimated model. The results show that independent variables explain about 74% of changes in the accounting conservatism variable. Durbin-Watson's statistic is equal to 1.7. Since this statistic is in the range of 1.5 to 2.5, we accept the assumption of lack of correlation between errors and the independence of the residuals.

5 Conclusion

The results of the Basu's model test in measuring accounting conservatism show that in the sample companies, among the factors related to board characteristics, board independence has a positive and significant relationship and the duality of the CEO has a negative and significant relationship with accounting conservatism; and the board size has not a significant relationship with accounting conservatism. In fact, non-executive directors are more effective in supervising managers and protecting the interests of shareholders thus reducing the agency problem. On the other hand, the separation of the CEO and the chair of the director's board is an indicator of the power and supervisory motivations of the external director, because if the CEO is also the chairman of the board, they will probably have a greater impact on appointments and selections than when these situations are separate. Separation of the role of CEO and chairman of the board will increase the independence of the board, which will improve management monitoring. In addition, internal managers tend to expropriate foreign minority shareholders, which such separation increases the level of shareholder support. Therefore, given the impact of variables of board independence and CEO duality on accounting conservatism and CEO influence on board members' decisions, organizations should pay more attention to making better regulations to control board independence as well as CEO membership in the board. The results of the relationship between board independence and accounting conservatism are consistent with the research findings of Beekes et al., 2004; Ahmed & Duellman, 2007; Lim, 2011; Lin, 2012; Amran & Abdul Manaf,

2014. The result of the relationship between CEO duality and accounting conservatism is consistent with the research findings of Muniandy (2007); Krishnan and Visvanathan (2008) and it is inconsistent with the research findings of Chi et al., 2009.

On the other hand, among the factors related to ownership structure, the percentage of ownership of institutional investors has a positive and significant relationship, and ownership concentration has no significant relationship with accounting conservatism. Compared to individual investors, institutional investors are able to monitor the managers at a lower cost and are able to prevent the opportunistic behavior of managers. Institutional investors play a very influential role in corporate governance in developed markets and have a great influence on managers' decisions. Therefore, special attention should be paid to the role of institutional investors in the use of conservative practices by the company's management. The results of the relationship between the percentage of ownership of institutional investors and conservatism are consistent with the research findings of Gaspar et al., 2005; Chen et al., 2007; Ramalingegowda and Yu 2012; Liu, 2019; Ball 2001; Watts, 2003.

Among the factors related to an auditor, none of the variables of auditor rotation and auditor tenure have a significant relationship with accounting conservatism. Also, independence of the audit committee has not a significant relationship with accounting conservatism. The results are inconsistent with the research findings of Krishnan, 2007; Stanley and DeZoort 2007; and they are consistent with the research findings of Krishnan and Visvanathan, 2008.

Also variable of information asymmetry has not a significant relationship with accounting conservatism and the result is inconsistent with the research findings of LaFond and Watts, 2008; Xia & Zhu, 2009.

On the other hand, the variable of sale's growth has not a significant relationship with accounting conservatism, and the variables of firm age and return on assets have a positive and significant relationship with accounting conservatism. In the other words, companies with higher returns and older companies have a higher level of accounting conservatism.

Also, considering that the agency costs have a positive and significant relationship with accounting conservatism, regulations should be enacted to control agency costs. This item is also should be considered in the calculation of accounting conservatism.

It has been found that the separation of the CEO from the chairman of the board has the greatest impact on the application of accounting conservatism and companies need to pay more attention to the fact that they do not put the board chairmanship in the hands of the CEO.

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