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Impact of Earnings Management on Corporate Tax Avoidance: The Moderating Role of Corporate Governance – Insights from Asian Markets

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Abstract

Purpose - This study aims to investigate how corporate governance moderates the relationship between earnings management and corporate tax avoidance.

Methodology - Data were collected from 620 non-financial companies in six Asian markets. A two-step generalized method of moments (GMM) approach was used to analyze the relationship between the variables.

Findings - The study reveals that higher levels of earnings management are associated with greater degrees of corporate tax avoidance. However, strong corporate governance practices, such as board independence and gender diversity, can mitigate this relationship, reducing corporate tax avoidance even in the presence of earnings management.

Implications - The findings have significant theoretical and practical implications for regulators, policymakers, and managers. They highlight the necessity of adapting tax regulations to account for the influence of corporate governance and earnings management. Additionally, the study underscores the importance of organizations enhancing their internal audit systems and regularly examining internal controls and procedures to ensure the accuracy and integrity of financial statements.

Originality/Value - This study provides novel insights into the relationship between earnings management, corporate governance, and corporate tax avoidance, particularly in Asian markets. It offers valuable recommendations for strengthening corporate governance practices and aligning them with effective tax regulatory models. This study contributes to the field of decision sciences by presenting a rigorous quantitative framework that allows regulators, investors, and corporate leaders to make informed decisions, particularly when dealing with corporate governance issues and tax regulations. The analysis of Asian markets shows how institutional factors such as legal traditions, cultural norms, and governance capability influence the efficacy of corporate control.

The study addresses a significant gap in the literature by focusing on Asian economies and using a thorough Corporate Governance Index (CGI) that represents the complexity of governance. Furthermore, the comparative analysis of industrialized and developing countries provides novel perspectives on how governance practices influence corporate performance in a range of economic issues.

Keywords: Tax Avoidance; Earnings Management; Corporate Governance; Asian Markets; Generalized Method of Moments.

JEL Classifications: G34; H26; L25

1. Introduction

Tax revenue is considered an integral part of government financing, yet it denotes a significant financial obligation for corporations (Kalbuana et al., 2023). Business enterprises are required to pay taxes to the tax authorities in accordance with the prescribed policies. It is associated with sustaining the welfare of the nation instead of delivering a direct monetary compensation (Ernawati et al., 2021). Corporations mitigate their tax burdens by adopting a tax avoidance approach and also consider it as a legitimate, due to which each year firms lose billions of dollars in that way, denying governmental tax authorities of further resources that might be used for welfare programs like building roads, hospitals, poverty alleviation, education, and other governmental projects (Kim & Lee, 2023). The Asian market is considered a region of institutional diversity and dynamic practices; thus, this study gives a novel contribution to the literature on Earning Management and tax avoidance by focusing mainly on the moderating role of CG. The study establishes important gaps in the negative influence of corporate governance standards on CTA activities, while the CG Index is used to show evidence across nations in both developed (Japan, Hong Kong, and Singapore) and developing (India, Pakistan, and China) Asian economies.

This study examines Asian markets such as China, Japan, Hong Kong, Singapore, India, and Pakistan, which have different levels of CG competence, regulatory complexity, and economic development. Among these countries, Japan, Hong Kong, and Singapore are considered developed countries as they have strong financial systems, robust tax systems, and high CG standards. Whereas countries such as India, China, and Pakistan are considered to be developing, as they have more corporate challenges, including regulatory fragmentation, weak enforcement mechanisms, and legislative gaps, which may lead corporations to practice tax avoidance. Among these countries, Pakistan still faces severe financial challenges. However, China and India have improved corporate accountability and reformed their tax systems. Challenges such as weak compliance and ineffective regulatory oversight impact the tax system, which has contributed almost \$10.4 billion in revenue losses caused by CTA yearly. Which influences the ability of the government to implement welfare projects and address poverty. This comparative study across countries suggests a framework to examine the association between EM and CTA in Asian economies by investigating the role of institutional capabilities and CG performance.

Over the last few decades, research has mainly focused on CTA and Asian economies, primarily due to policy debates surrounding equitable taxation, fiscal sustainability, and the effectiveness of revenue mobilization strategies. Kim and Lee (2023) found the impact of product market competition on tax avoidance in South Korea. Chen et al. (2019) investigated the effect of board characteristics on CTA in Taiwan. Guo et al. (2024) reported that ownership concentration, firm size, and profitability have a profound impact on CTA in China.

According to Khan et al. (2022), CG and corporate social responsibility have no impact on CTA in Pakistan. Oad Rajput and Marwat (2019) revealed that managers in Pakistani non-financial firms take advantage of tax avoidance strategies to manipulate profitability signals.

Research on the influence of tax avoidance remains inadequate, particularly from the perspective of developing economies. Prior research examining the relationship between CG and CTA has mainly addressed broader governance issues, with comparatively little attention given to CTA as a distinct area of analysis (Choi & Park, 2022; Zhang et al., 2022).

Recent research has examined a number of variables that influence tax avoidance behavior, such as firm size, profitability, leverage, ownership structure, CG, industry type, and the effectiveness of tax enforcement and regulation. Despite the great advancements in understanding these variables and their impacts, there are still areas of uncertainty that need further investigation. There has been a lack of research available on the impact of EM on firm-level tax avoidance. The study aims to fill a knowledge gap by investigating the impact of EM on tax avoidance, including the moderating effect of CG practices on corporate tax rates. CTA activities decrease due to better EM, and the implementation of sound CG standards contains gender diversity and board independence. A variety of evidence leads to the tax system's inadequate revenue efficiency and productivity, including considerable tax rebates, low compliance rates, and tax avoidance as a consequence of high tax rates and unproductive tax management. Consequently, researchers are now using publicly accessible accounting data (Desai & Dharmapala, 2006; Manzon & Plesko, 2002). The purpose of the study is to analyze how tax disclosure and CG information are beneficial for shareholders and to provide valuable information to academics, practitioners, and policymakers. It provides a comprehensive study of tax avoidance in developed and developing Asian economies, including China, Japan, Hong Kong, Singapore, India, and Pakistan. The choice of the sample is interesting as multinational corporations tend to locate in nations like Singapore and Hong Kong, due to their low and lenient tax regulations and secrecy laws (Chen et al., 2019; Dyreng et al., 2010), China, and India due to sizable industrial bases and sophisticated supply chains (Delgado et al., 2023). Japan is broadly viewed as a desirable place for tax planning, essentially because its apparent regulatory structure and established judicial system provide a foreseeable institutional setting for corporate financial actions. (Klassen et al., 2017).

This empirical investigation adds to both the theoretical literature and the field of decision sciences by providing regulators, investors, and managers with a robust quantitative base for dealing with difficult CG practices and incorporating theories into tax laws associated with agency theory, tax planning, CTA, and stakeholder activism. These theories strengthen the understanding of the preceding and subsequent effects of EM on CTA in both developing and developed Asian economies. This research explores various aspects that have an impact on CTA, taking into account firm-based characteristics such as firm size, property, plant, and equipment, profitability, leverage, and intangible assets. Additionally, it investigates how agency theory, stakeholder theory, and corporate tax planning theory influence the relationship between CTA and EM (Desai & Dharmapala, 2006). The prime objective of this study is to examine how EM impacts CTA behavior, with the moderating role of CG.

The remaining part of the research is arranged as follows: Section 2 discusses the review of literature; Section 3 explains the data and methodology; Section 4 shows the empirical findings; and Section 5 discusses conclusions with future research.

2. Literature Review

To achieve the research objectives of the study, the following literature explains the relationship between CTA and EM.

Phillips et al. (2004) examine EM strategies for Canada's deferred tax payments, including details on the relationship between financial reporting alternatives and tax management strategies. Dhaliwal et al. (2004) gave empirical evidence to support their argument that companies with goals for EM experienced greater gaps between book and taxable income. Desai and Dharmapala (2006) examine how CG systems impact tax planning and EM in India, with special focus on how the market for corporate control, governance structures, and earnings quality relate. Their research reveals that information produced from book-tax differences (BTDs) is critical in supporting stakeholders in making prudent decisions. Despite variations in study methods and factors, the extant evidence consistently shows that BTDs are linked with lower earnings quality. The sources of information represented in BTDs have also been the subject of earlier research, with a focus on tax management as a significant contributing element.

Chen et al. (2010) research contributes to the literature by investigating tax aggressiveness in Australian family-owned corporations and linking their behavior with that of non-family-based corporations. It further analyzes how variances in ownership structure impact tax planning strategies and EM practices in Australian-based institutions and in general economic prospects. Becker and Fuest (2010) investigate how CTA impacts R&D activities in Germany, additionally, examining the impact of EM activities and tax credit encouragements on firm performance. Dyreng et al. (2010) revealed the association between auditor opinion on BTDs and earnings quality. The researcher examined how auditors use lower BTDs as a signal of lower earnings quality and how auditors use higher BTDs as a sign of higher audit performance and revised audit opinions. They discussed how auditors applied BTDs to examine earnings quality; BTDs indicate that auditors should put in more effort to maintain good audit quality. The link between CG mechanisms and EM in Brazil offers an understanding of how CG practices influence financial reporting choices and tax planning strategies (Sá & Alves, 2018). Armstrong and Larcker (2009) investigate the reasons for tax planning in the United Kingdom, and how corporations balance the trade-offs between CTA, EM, and other strategic factors.

Guenther (2014) examined the determinants of pretax financial accounting income's lower sustainability in firms with significant BTD variations between a fiscal profit or taxable income and an accounting profit or commercial profit, which are known as BTDs. Their research reveals two important findings: First, regardless of the size of their BTDs, companies that employ EM exhibit weaker earnings consistency. Second, large BTDs are linked with lower earnings persistence even when EM is taken into consideration.

Obigbemi et al. (2016) studied how board composition influenced EM practices involved in the firms operating in Nigeria. The performance-adjusted modified Jones model is used to determine discretionary accruals. The empirical findings reveal a significant relationship between EM and board composition. Additionally, the study discovered a small but significant link between the composition of EM, the board of directors, firm size, and gender diversity. This indicates that higher board sizes, more gender diversity, and a more diverse board membership are related to lower levels of EM.

Additionally, the results show an uncertain yet statistically significant affirmative link between chairman responsibilities in EM and CEO duality.

Simpson and Stevens (2016) examine the association among tax avoidance, financial stability, and income inequality in South Africa, presenting information on the social and economic variables that impact tax avoidance, and EM approaches within the South African economy. Kurniasih and Suranta (2017) investigate the relationship between EM and CTA. Their findings reveal a robust positive association, a sizable incentive for tax avoidance, and EM. Moreover, they determined that tax avoidance is particularly effectively mitigated by CG best practices, the presence of audits performed by a member of the Big Four auditing firms.

Wang et al. (2018) used Chinese manufacturing listed firms to evaluate the relationship between operating cash flow, EM, and tax avoidance, using sample data from 2011 to 2015. Additionally, the research explores the relationship between CTA and operating cash flow. The outcomes reveal that CTA is negatively related to operating cash flow when pre-tax operating cash flow is negative, whereas a positive relationship is seen when operating cash flow is greater than zero.

Kovermann and Velte (2019) investigate how CG practices influence CTA activities. They state that governance factors, such as stakeholder pressure, market monitoring, board composition, ownership structure, managerial incentives, audit quality, and regulatory enforcement, heavily influence company tax planning decisions. Their results raise questions about the generally accepted assumption that effective governance automatically balances the advantages and disadvantages of tax avoidance. However, they suggest that these results are insufficiently explained by traditional principal-agent theory. Consequently, they highlight the importance of more comprehensive theoretical models that take the corporate environment and the goals of a number of stakeholders into account. In general, the study reveals that when the risks associated with exceeding expected positive outcomes are considered, established governance structures may both promote value-enhancing tax-saving strategies and establish constraints on them.

Oad Rajput and Marwat (2019) investigate how managers might influence short-term earnings by using tax avoidance. They find that managers use CTA strategies not only to achieve earnings management, but also to increase profitability targets established in the previous year. Further, they determine that those firms that are involved in avoiding corporate tax observe higher stock returns, thereby demonstrating that the stock market frequently views these strategies favorably. Similarly, Wali (2021) studied the association of corporate tax reductions and EM practices to increase discretionary EM. They found that firms have considerable incentive to use corporate income tax planning to strategically manage earnings. Moreover, firms that decrease their tax liability with discretionary accounting activities have no impact on reported financial outcomes.

Additionally, Hong et al. (2022) explore the impact of EM on CTA. They found that increasing EM is related to more CTA. Furthermore, they recommended that managers use EM to increase shareholder value. In order to achieve this goal, managers control reported earnings and increase income tax savings by using discretionary accruals. The findings reveal a positive link between CTA and EM, showing that corporations involved in EM usually show lower ETR.

Whereas Delgado et al. (2023) studied the relationship between discretionary accruals and tax avoidance and found that EM plays a role in the differences between financial accounting and taxes by showing a relationship between discretionary accruals and tax avoidance. They also highlighted that the percentage of independent directors on the board determines how much EM affects corporate tax behavior. Therefore, board independence moderates the relationship between EM and CTA. Similarly, Sirot et al. (2023) employ multiple linear regression analysis to investigate the impact of financial distress and EM on CTA. Their results reveal that the financial crisis strongly impacts CTA.

2.1 Theoretical Framework

2.1.1 Agency Theory

Fama and Jensen (1983) show that managers may control profitability in order to mitigate agency disputes and more effectively align their objectives with the interests of shareholders. Similarly, managers may try to minimize corporate tax payments to maximize shareholder wealth. Conflicts of interest could, however, develop because managers might put their interests ahead of maximizing shareholder profit. (see equation in Appendix A)

2.1.2 Signaling Theory

Dechow and Skinner (2000) document that, concerning signaling theory, managers utilize financial reporting techniques to communicate information about the financial stability and prospects to stakeholders and investors, whereas CTA and EM remain used to show productivity and financial viability. Several studies investigate how corporations strategically adjust earnings and taxes to convey good signals to the market. The influence of signaling through tax avoidance and EM on investor sentiment and corporate value has been further investigated. (see equation in Appendix B)

2.1.3 Stakeholder Theory

Freeman (2010) explores stakeholder theory, taking into account how corporate actions may affect society more broadly. Stakeholder theory established research attempts to explain how corporations manage earnings and avoid submitting tax payments while considering the interests of various stakeholders, such as consumers, shareholders, employees, and community members. This corpus of work investigates the moral implications of tax avoidance and EM, as well as how they impact stakeholder relations and corporate image. (See equation in Appendix-C)

2.1.4 Tax Planning Theory

Hanlon and Heitzman (2010) discuss tax planning theory, which discusses strategic aspects of CTA as a means of decreasing tax burdens while violating the law. Corporate managers perform EM with the help of tax planning, as discussed in the tax planning theory. This study reveals the significance of financial reporting strategies for tax planning by considering the relationship between CTA approaches and EM. (see equation in Appendix D)

2.2 Hypothesis Development

2.2.1 Earnings Management and Corporate Tax Avoidance

The evidence reveals a complex yet primarily positive association between EM and CTA, in compliance with the main objective of enhancing corporate value and accomplishing strategic financial objectives. According to research, managers frequently use discretionary accruals and actual profits activities to not only develop financial statements but also to lower taxable income through aggressive tax management (Amidu et al., 2019). Information asymmetry permits managers to engage in opportunistic behavior like tax avoidance and to minimize rent extraction or to achieve earnings benchmarks that lead to award bonuses based on performance, as discussed in the concept of Agency theory (Assidi & Omri, 2017; Rashid et al., 2022). Studies such as Delgado et al. (2023) and Purba (2018) reveal that as the intensity of EM increases, it leads to an increase in corporate tax evasion, which can be determined by a decline in the ETR. Lee (2017) explained that managers may provide priority to "book-tax conforming" approaches, which comprise steps to control earnings and, at the same time, reduce taxable income, linking the objectives of financial reporting with tax savings. Based on the above findings, it is hypothesized that:

H₁: EM has a positive effect on CTA.

2.2.2 Corporate Governance Role as Moderating Variable

Recently, numerous studies have examined the influence of EM on CTA in both developed and developing economies. However, several studies highlight the significance of corporate governance as a moderator role between EM and CTA.

The moderating role of CG in the relationship between EM and CTA in Asian developed and emerging economies has not been previously examined. Therefore, the current study is conducted to investigate such phenomena and fill the research gap that exists in the current literature. Desai and Dharmapala (2006) reported that CG plays a significant role in deciding the amount of company tax avoidance. Further, they document that when the level of CG decreases, the probability of the firm engaging in tax avoidance practices increases. Similarly, Obigbemi et al. (2016) reported that firms with strong CG practices adhere to reporting credible information in financial reporting and reduce the likelihood of engaging in EM. For instance, Khan et al. (2022) found that ownership concentration differently moderates the relationship. Further, they reported that emerging economies have weak institutional infrastructure, and because of that, ownership concentration exacerbates the favorable relationship between EM and CTA. Concurrently, Delgado et al. (2023) findings show a positive and statistically significant association between discretionary accruals and both ETR-based indicators, suggesting that firms engaging in EM ultimately report higher taxable income, leading to higher ETRs and reduced tax avoidance behavior. Moreover, the absence of any meaningful relationship between discretionary accruals and BTM indicates that earnings manipulation does not materially widen the accounting tax gap. Overall, the evidence challenges the assumption that firms systematically use EM as a tool to minimize tax liabilities (Delgado et al., 2023). Based on the above findings, it was hypothesized that:

H₂: CG strength negatively moderates the relationship between EM and tax avoidance.

2.2.3 Control Variable

Control Variables, including size, profitability, and leverage, were presented to the model based on previous research findings. Yorke et al. (2016) found that firm size is a negative and significant influence on EM; however, financial performance variables can not show a moderating effect on the relationships between tax avoidance and EM. For instance, Zimmerman (1983) showed that tax avoidance is less prevalent among larger corporations. As for profitability, Hendayana et al. (2024) reported that firm size enhances the impact of profitability and leverage, but reduces capital intensity on tax avoidance. Graham and Tucker (2006) found that firms that have a greater debt-to-asset ratio are more inclined to utilize non-debt tax shields and engage in tax avoidance techniques. For instance, Jin (2021) reported that firms that use more leverage are better able to be involved in tax avoidance.

3. Data and Methodology

3.1 Data

This study aims to examine how CG has a moderating effect on the relationship between EM and CTA. Therefore, data were collected from multiple sources. First, the study used annual data of 620 non-financial companies from Asian developed and emerging economies, namely Pakistan, China, India, Japan, Hong Kong, and Singapore, from Thomson Reuters DataStream for the period from 2011 to 2020. Second, the data on CG indices is obtained from the World Bank database indicator (WDI) and the Organization for Economic Cooperation and Development (OECD). Third, taxation data is taken from the website of the International Monetary Fund (IMF). The aforementioned countries are selected based on the Morgan Stanley Capital International (MSCI) classification.

This study employs a standardized methodology for data collection to define financial variables across countries following internationally recognized accounting standards such as the International Financial Reporting Standard (IFRS) (Athira & Ramesh, 2023). Furthermore, Table 1 provides an overview of the sample construction.

Table 1. Sample Construction

Country	Stock Exchanges	Economy	No. of Firms	No. of Observation
Pakistan	Pakistan Stock Exchange (PSX)	Developing	70	700
China	Shanghai Stock Exchange (SSE)	Developing	176	1760
India	Bombay Stock Exchange (BSE)	Developing	173	1730
Japan	Tokyo Stock Exchange (TSE)	Developed	53	530
Hong Kong	Hong Kong Stock Exchange (SEHK)	Developed	78	780
Singapore	Singapore Exchange Limited (SGX)	Developed	70	700
	Full sample		620	6200

Note: This table shows the detailed breakup of the sample of the study.

3.1.1 Dependent Variable: Corporate Tax Avoidance (CTA)

The core issue in the literature now under discussion is the emergence of a detailed and accurate proxy for tax avoidance. This issue arises when corporations' tax returns are private, which restricts quick access to the income provided to tax agencies. As a consequence, academics have turned to employing accounting data and using techniques presented by Manzon and Plesko (2002) and tested by Desai and

Dharmapala (2006). This study provides two tax avoidance indicators in support of the absence of a generally more suitable proxy in earlier investigations. The technique used to establish these proxies is explained in the following section, enabling a more precise and comprehensive analysis of tax avoidance in the research.

(1) Effective Tax Rate (ETR)

ETR is the most effective proxy for studying CTA procedures that have a direct effect on a company's net earnings. Due to its simplicity in measurement and interpretation, the ETR has a major advantage over other tax avoidance methods. Moreover, the ETR is often used in the literature since it indicates that a firm may be engaged in tax avoidance activities. The ETR remains a popular approach for measuring corporate tax avoidance activities (Hong et al., 2022). The ETR can be described as follows:

$$ETR_{i,t} = \frac{TTE_{i,t}}{PI_{i,t}}, \quad (1)$$

where $ETR_{i,t}$ is the Effective Tax Rate by firm i in year t ; $TTE_{i,t}$ is the Total Tax Expense by firm i in year t ; and $PI_{i,t}$ is the Pretax Income by firm i in year t .

(2) Cash Effective Tax Rate (CETR)

The CETR is a second measurement used to investigate tax avoidance, and it may provide a more comprehensive investigation than the ETR. The CETR is a more reliable indicator of tax avoidance than the ETR because it takes into account Book-tax differences in both the long and short term (Watson, 2015). This measure eliminates the potential overstatement of current tax expenses by concentrating purely on cash taxes paid compared to total tax expenses. Delgado et al. (2023) explain that managers view CTA as a way to mitigate the amount of cash taxes paid. Dyreng et al. (2008) revealed corporate cash taxes paid divided by the pretax income. Similarly, CETR is preferable over GAAP ETR as it considers factors such as the impact of stock option activities and does not account for increases to a company's tax deferral valuation of assets allowances. The following is an explanation of the composition of the cash effective tax rate (ratio):

$$CETR_{i,t} = \frac{CTP_{i,t}}{PI_{i,t} - SI_{i,t}}, \quad (2)$$

where $CETR_{i,t}$ is the effective tax rate by firm i in year t ; $CTP_{i,t}$ represents the cash tax paid by firm i in year t ; $PI_{i,t}$ is the pre-tax income by firm i in year t ; and $SI_{i,t}$ is the extraordinary/special elements.

3.1.2 Independent Variable: Earning Management (EM)

EM literature has been divided into two types: (1) real earnings management (REM) and (2) accrual earnings management (AEM). The Jaggi et al. (2009) earnings management model serves in this investigation to establish the amount of accrual earnings management. Both current discretionary accruals and total discretionary accruals (TDA) are included in the model. The Jones (1991) and Dechow et al. (1995) modified cross-sectional discretionary accruals model is used to calculate TDA. Recent research highlights the significance of evaluating current discretionary accruals since they are considered to be more susceptible to earnings management (Ashbaugh et al., 2003). Kothari et al.

(2005) suggest that corporate performance should be included when calculating discretionary accruals. For organizations with exceptional performance, discretionary accruals shown according to Jones-type models tend to be lower or higher. Kothari et al. (2005) discussed that to resolve the challenge, we recommend performance comparison, which would break down discretionary accruals computed with Jones-type models for management and control corporations linked to current ROA. (Keung & Shih, 2014).

3.1.3 Moderating Variable: Corporate Governance (CG)

Principal Component Analysis (PCA) is used as a systematic method to capture the multidimensional structure of CG procedures fully. PCA enables us to recognize and extract underlying constructs that represent many facets of CG as opposed to depending on specific individual components. To ensure the robustness and relevance of our selection procedure, based on insights from two seminal CG studies, various factors were examined. A thorough review of the chosen factors, which jointly contribute to the measurement of CG in this study, is given in Table 2, which is presented below.

Table 2. Corporate Governance Index (CGI) Proxies

Sr.No.	Variable	Measure
i.	Board size	Number of board directors
ii.	Board Gender Diversity	The presence of female directors
iii.	Frequency of Board Meetings	The total number of meetings held during the year.
iv.	Board Independence	The proportion of independent directors
v.	CEO duality	A dichotomous variable which equals 1 if there is role duality and 0 if otherwise.

Note: Board size refers to the number of directors on a company's board and reflects its monitoring capacity and diversity of expertise, though very large boards may face coordination inefficiencies (Jensen, 1993). Board gender diversity measures the proportion of female directors and is linked to stronger oversight, broader perspectives, and improved governance outcomes (Adams & Ferreira, 2009). The frequency of board meetings indicates how often the board convenes and serves as a proxy for board diligence and monitoring activity (Vafeas, 1999). Board independence represents the proportion of non-executive directors, which enhances objective oversight and reduces agency conflicts (Fama & Jensen, 1983). CEO duality occurs when the CEO also acts as board chair, a structure that may improve leadership unity but can weaken board monitoring (Rechner & Dalton, 1991).

3.1.4 Control Variables

The study incorporates control variables described in prior research (Richardson et al., 2013). Firm size ($Size_{it}$) is calculated by taking the natural logarithm of a firm 'i' total assets in year 't'. Profitability (ROA_{it}) is determined by dividing a firm 'i' total assets by its profit before taxes for year 't'. Property, Plant, and Equipment (PPE) is included to measure how efficiently a company earns income from its fixed assets, for example, buildings, cars, and machinery. A higher PPE turnover indicates more effective utilization of assets. Whereas, consolidated net income is calculated by using the equity method, intangible assets (INT_AST_{it}) are measured by dividing intangible assets by total assets for firm 'i' in year 't'. This process reflects the distinct classification of intangibles in accounting records, in contrast to tax reporting. Finally, leverage (Lev_{it}) is estimated by dividing total liabilities by total assets for firm 'i' in year 't'. This is done in recognition of the fact that companies with larger debt-to-asset ratios are more likely to use tax evasion tactics and are less likely to rely on non-debt tax shields.

3.2 Methodology

3.2.1 Performance-Adjusted Current Discretionary Accruals (PACDA)

The PACDA model was employed to generate the primary findings, given its effectiveness in representing accrual-based earnings management, particularly for current accruals subject to managerial influence. Thus, the model presented by Jaggi et al. (2009) is used to measure accrual-based profit management in this study.

To evaluate the PACDA, a three-step procedure is used, following the methodology outlined in Equations 3 through 5.

Step-1: TCA are estimated annually using a cross-sectional regression model based on Equation (3):

$$\frac{TCA_t}{A_{it-1}} = \alpha_0 \left(\frac{1}{A_{it-1}} \right) + \alpha_1 \left(\frac{\Delta REV_t}{A_{it-1}} \right) + \alpha_2 (ROA_{it-1}) + \varepsilon_{it}, \quad (3)$$

where TCA_{it} denotes total current accruals for firm i in year t , scaled by lagged total assets A_{it-1} . The model includes changes in revenue (ΔREV_{it}), also scaled by lagged assets, and prior-year return on assets (ROA_{it-1}), which serves as a proxy for firm performance. The coefficients α_0 , α_1 , and α_2 are estimated using ordinary least squares (OLS) regression across the sample firms for each year.

Step-2: these estimated coefficients are used to calculate the firm's expected current accruals (ECA) based on Equation 4:

$$\frac{ECA_{it}}{A_{t-1}} = \alpha_0 \left(\frac{1}{A_{it-1}} \right) + \alpha_1 \left(\frac{\Delta REV_{it} - \Delta AR_{it}}{A_{t-1}} \right) + \alpha_2 (ROA_{it-1}). \quad (4)$$

Here, the amount of the revenue change that is not related to accruals is separated by subtracting the change in accounts receivable (ΔAR_{it}) from the change in revenue. Regardless of possible profit manipulation, this adjustment aids in estimating expected accruals based on typical operating performance.

Step-3: PACDA are derived by subtracting the predicted accruals from the actual current accruals as described in Equation 5:

$$PACDA = \left(\frac{TCA_{it}}{A_{it-1}} \right) - \left(\frac{ECA_{it}}{A_{t-1}} \right). \quad (5)$$

In order to capture the discretionary aspect of accruals, this residual number shows the percentage of current accruals that cannot be justified by firm performance and operational conditions. Thus, PACDA is understood as a refined proxy for earnings management behavior that has been fixed for performance-related factors.

3.2.2 Two-Step Generalized Method of Moments (GMM) Method

A static econometric model using linear regression may produce results that do not take into account numerous problems with autocorrelation, heteroscedasticity of model parameters, and data simultaneity, which result in biased results. Thus, it could result in skewed results. This work uses a dynamic panel dataset technique to address these concerns, prevent endogeneity problems (which result from correlations between explanatory variables and error terms in the model), and rely less on lagged information of such endogenous variables. Consistent with the findings of prior research (Arellano & Bond, 1991), the researchers aim to produce estimators that are objective, accurate, and consistent by using this method. For the creation of smooth variance and covariance analysis, the dynamic methodology used is specifically adapted to the appropriate conditions. To do this, various models are run using one-step and two-step estimators to evaluate dynamic panel dataset models. These estimators take into account both the variants through panel estimators and the underlying procedures used to calculate them. Moreover, the analysis employs the commonly used GMM known as the two-step linear model estimator. Windmeijer (2005) explains that this procedure is more suitable and reliable than the panel estimators in the one-step linear model of GMM. The earlier research conduct by Lee and Bose (2021) has shown the effectiveness of the two-step dynamic panel data model. The model used to find out how EM influence on CTA.

Windmeijer (2005) used the two-step GMM approach in order to examine the relationship under study. The Arellano-Bond (AB) serial correlation test is used to the first-differenced residuals to examine serial correlation. The Arellano-Bond method is used to evaluate the residuals. The null hypothesis for this test proposes that in the first-differenced errors, there is no second-order serial correlation. The over-identifying limitations for the GMM estimators are further tested to assess the correlation between the instruments employed and the residuals, as confirmed by the Hansen test. The null hypothesis of the Hansen test conducted has instruments that are valid. The results show reliability that is supported by GMM estimators.

3.3 Model Specification

The research uses a dynamic panel estimation within an empirical econometric model to investigate the relationship between CTA and earnings management. Equation 6 presents the empirical approach used to test the research objectives and incorporates control variables.

$$ETR_{i,t} = \beta_0 + \beta_1 ETR_{i,t-1} + \beta_2 AEM_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 ROA_{i,t} + \beta_5 PPE_{i,t} + \beta_6 INT_AST_{i,t} + \beta_7 LEV_{i,t} + \varepsilon_{i,t}. \quad (6)$$

The baseline model (Equation 6) is expanded by incorporating additional CG variables to assess the potential moderating role of CG factors (e.g., Board size, board gender diversity, frequency of board meetings, board independence, and CEO duality) on the relationship between CTA and earnings management. In addition, PCA is used to create a CG Index. PCA is a statistical technique for reducing the dimensionality of data by discovering underlying patterns and correlations between variables. The PCA-derived index captures a significant amount of the variance in the original dataset by classifying related variables into components (Armstrong et al., 2015). The models used to evaluate moderating role of CG and a link between CTA and earnings management are shown in the following Equation 7:

$$ETR_{i,t} = \beta_0 + \beta_1 ETR_{i,t-1} + \beta_2 AEM_{i,t} + \beta_3 CGI_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 ROA_{i,t} + \beta_6 PPE_{i,t} + \beta_7 INT_AST_{i,t} + \beta_8 LEV_{i,t} + \beta_9 AEM_{i,t} \times CGI_{i,t} + \varepsilon_{i,t}. \quad (7)$$

In Equation 7, the term ETR_{it} represents the effective tax rate, which is calculated as the ratio of total tax expense to pre-tax income. $ETR_{i,t-1}$ represents the lagged ETR. Where AEM_{it} represents the accrual earnings management of company i in year t , which is measured by performance-adjusted current discretionary accruals. CGI_{it} shows the CG index. Where $SIZE_{it}$ shows the firm size, which is measured by taking the log of total assets for company i in year t . ROA_{it} shows the profitability, which is measured by the ratio of profit before tax to total assets for company i in year t . PPE_{it} shows the capital intensity, namely the ratio of property, plant, and equipment to book value. Where INT_AST_{it} : shows the intensity of intangible assets, which is calculated as the intangible assets divided by total assets for company i in year t . LEV_{it} shows the leverage, which is measured as total liabilities divided by total assets for a company i in year t . Where $AEM_{i,t} \times CGI_{i,t}$ shows the moderating effect. $\varepsilon_{i,t}$ shows the residual of the regression equation.

4. Empirical Results and Discussion

4.1 Descriptive Statistics

Table 3 illustrates the descriptive statistics of the variables. ETR and CETR average values are 16.51% and 12.45%, respectively. It means that, on average, for every \$1 of taxable income, firms normally pay an ETR of 16.51 cents, whereas 12.45 cents are taxes in the form of cash. It implies that firms have low taxable income compared with income before tax. Therefore, it highlights that maybe some firms have used strategies to reduce taxes. Furthermore, the mean value of AEM is 6.24%, indicating some level of earnings manipulation. The CGI has a mean value of 0.048, reflecting a generally low governance score across the observations. Similarly, the mean of firm size is 18.814, whereas ROA has a mean value of 0.0578, which indicates a moderate level of firm profitability. Likewise, the mean of PPE is 0.2879, which shows the proportion of tangible assets in total assets. Moreover, the mean of INT_AST is 0.063, which shows the proportion of intangible assets. Lastly, the LEV has a mean of 0.4926, indicating that firms are using a high level of debt financing. Moreover, the Levin, Lin & Chu test, Im, Pesaran & Shin test, the Augmented Dickey-Fuller test, and the Phillips-Perron unitroot tests are used for testing stationarity. The findings indicate that most series are stationary at $I(0)$, i.e., at the level, as evidenced by the significant test statistics.

Table 3. Descriptive Statistics of Variables

Variables	N	Mean	SD	Max	Min	Levin, Lin & Chu t*	Im, Pesaran, and Shin W-stat	ADF- Fisher Chi-square	PP- Fisher Chi-square
ETR	6200	16.51%	7.49%	40.31%	0.01%	0.725	-5.303***	1637.068***	2266.948***
CETR	6200	12.45%	7.69%	30.35%	0.03%	-1161.988***	-406.905***	2474.524***	3550.996***
AEM	6200	6.24%	13.01%	79.92%	-6.60%	-24.331***	-11.390***	1973.267***	3696.500***
CGI	6200	0.0482	1.0827	8.2578	-7.3982	-589.097***	-272.143***	1411.833***	2046.125***
SIZE	6200	18.814	2.8725	28.2565	8.7932	3.003	4.913	1182.696	1813.791***
ROA	6200	5.78%	8.41%	34.19%	-22.90%	-32.432***	-8.457***	1774.329***	2348.511***
PPE	6200	28.79%	24.99%	90.90%	0.01%	-76.928***	-7.289***	1592.626***	1643.103***
INT_AST	6200	6.33%	8.76%	45.12%	0.04%	-2.251**	-10.035***	1766.230***	1717.014***

LEV	6200	49.26%	17.20%	82.03%	8.77%	-191.523***	-25.722***	1781.447***	2814.065***
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Note: In Table 3, (N) shows the number of observations, (SD) is the standard deviation in percentage form. (Max) and (Min) are the maximum and minimum values. Additionally, four different tests are employed to assess stationarity: the Augmented Dickey-Fuller (ADF), (PP) Phillips-Perron, Levin, Lin & Chu t^* , and Im, Pesaran, and Shin W-stat. The panel unit root tests are with only an intercept. EViews 13 software was employed to perform panel unit root testing. Eviews 13 reports test statistics along with asymptotic p-values rather than critical values. *, **, and *** denote significance levels at (10%), (5%), and (1%), respectively.

The contradictory results of the panel unit root presented in Table 3 for variables such as ETR and SIZE, where the Levin, Lin & Chu and Im, Pesaran, and Shin tests failed to reject the null hypothesis of non-stationarity. The primary reason of these contradictions is that their underlying assumptions vary. The IPS test and Fisher-type tests support heterogeneity in the autoregressive parameters, hence being more suitable for panels consisting of economies or corporations with diverse economic conditions, whereas the Levin, Lin & Chu test assumes a common unit root process across cross-sections (Im et al., 2003; Maddala & Wu, 1999). Importantly, the ADF-Fisher and PP-Fisher tests strongly reject the null hypothesis for all variables at the 1% significance level, confirming stationarity, even if LLC and IPS results were vague for ETR and SIZE.

According to Pesaran (2007), these tests are non-parametric and are more appropriate for large panels that may exhibit cross-sectional dependence, which is typical in multi-country datasets like the one employed here. As the variables of interest (such as CETR, AEM, CGI, ROA, and LEV) are unquestionably $I(0)$ and three out of four unit root tests demonstrate stationarity, it is methodologically fair to move forward with the analysis in levels. This method has been employed in current literature to examine similar tax and governance dynamics in cross-country panel data (Ali et al., 2023; Huang & Wang, 2024).

Thus, robustness checks are necessary due to the prospect that some variables may be included of order one ($I(1)$). Overlooking a subset of regressors that are non-stationary can affect spurious regression outcomes. Panel ARDL models and panel cointegration tests, developed by Pedroni (1999) and Kao (1999), are normally used to report this problem, as they can provide a means to estimate mixed $I(0)$ and $I(1)$ series, while maintaining long-run equilibrium associations. The Kao (1999) test is precisely used to examine whether a long-run equilibrium association exists between the ETR and the explanatory variables. The outcome found a statistically significant probability value, supporting the null hypothesis of no cointegration. The results conclude that the variables have a stable long-run association, regardless of their heterogeneous level of integration ($I(0)$ and $I(1)$). Thus, the existence of cointegration alleviates concerns regarding spurious regression and supports the validity of the GMM estimations in levels (see Appendix E for detailed results).

Panel ARDL approaches, such as the Pooled Mean Group estimator, are very effective for short and long panels because they allow for heterogeneity in both dynamics and error variances (Pesaran et al., 1999). The application of error correction models, which capture both the short-term dynamics and long-term equilibria, is possible if cointegration among variables is achieved. Studies like Delgado et al. (2023) advise using these robustness tests in financial econometrics research that deals with taxation, governance, and earnings management.

The contradicting unit root test results are primarily due to test design discrepancies, such as assumptions about error variance, cross-sectional dependence, and autoregressive coefficient homogeneity. A common AR(1) process is assumed by the LLC test, which is known to have low

power, particularly in multi-country datasets where cross-sectional heterogeneity or dependence is present (Breitung, 2000). The reliability and power of heterogeneous panels are increased by Fisher-type tests (ADF and PP variants), which aggregate separate unit root tests and enable each cross-section (such as a country or enterprise) to have its own dynamics and deterministic components (Maddala & Wu, 1999). It is rational to prioritize the Fisher-type panel tests, which are more dependable in these circumstances, considering the sample's diverse and heterogeneous composition, which comprises companies from both developed and developing Major asian countries, such as China, Hong Kong, Japan, Pakistan, Singapore, and India. Their widespread use in recent governance and tax research lends credence to their dependability (Kim & Lee, 2023). Thus, the limitations of relying on only one test, the aggregate result from multiple tests, weighted by methodological appropriateness, explain the inclusion of level-form variables in the observed analysis.

4.2 Correlation Matrix

Table 4 reports the pairwise correlations among the study variables. The results indicate that the correlation of AEM with ETR is 0.044, with CETR-0.035. The level of the correlation residues is within acceptable limits, implying that multicollinearity is unlikely to pose a concern in the model.

Table 4. Correlation Matrix

	1. ETR	2. CETR	3. AEM	4. CGI	5. Size	6. ROA	7. PPE	8. INT_AST	9. LEV
1. ETR	1								
2. CETR	0.115*	1							
3. AEM	0.044	-0.035	1						
4. CGI	0.044	0.007	-0.083*	1					
5. Size	0.037	0.103**	-0.070	0.248***	1				
6. ROA	0.089*	0.107**	-0.036	-0.034	-0.097**	1			
7. PPE	-0.042	-0.047	-0.036	-0.022	-0.225***	-0.101*	1		
8. INT_AST	-0.038	0.056	0.055	-0.031	0.198***	-0.008	-0.196***	1	
9. LEV	0.051	-0.006	-0.057	0.061	0.018	-0.048	-0.002	0.031	1

Note: Table 4 shows the Correlation Matrix. (ETR) is the Effective Tax Rate. Similarly, (CETR) is the Cash Effective Tax Rate. Whereas, (AEM) is Accrual-based Earnings Management. (CGI) is CG Index. (Size) is the natural log of total assets. (ROA) is Return on Assets. (PPE) is Net Property, Plant & Equipment to total assets. (INT_AST) is Intangible Assets to total assets. (LEV) is Leverage. Significance levels: $p < 0.10$ (*), $p < 0.05$ (**), $p < 0.01$ (***)

The results are shown with robust standard errors enclosed in brackets. The significance levels are indicated by the symbols *, **, and ***, which stand for 1%, 5%, and 10% levels of significance, respectively.

4.3 Impact of Earnings Management on Corporate Tax Avoidance

Table 5 exhibits the estimated results of the Two-Step GMM to study the impact of firms' earnings management on tax avoidance. The findings in the first column are drawn from the full sample, which comprises 620 firm-year Non-financial listed companies from Pakistan, China, India, Japan, Hong Kong, and Singapore. The second and third columns, on the other hand, concentrate on certain sub-samples, discriminating between developing economies (Pakistan, China, and India) and developed economies (Japan, Hong Kong, and Singapore) in Asia. Each column presents full details on the relationship between tax avoidance and the variables of concern by giving detailed results for the

corresponding category. Furthermore, post-estimation tests for autocorrelation and over-identification are carried out to validate the model parameters and ensure their reliability. The results demonstrate the consistency and accuracy of the model. To examine the robustness and validity of the acquired data, the Hansen test is also used to determine whether each instrument is exogenous to all instruments as a group.

Table 5. Impact of Earnings Management on CTA

Variables	Full Sample	Developed Countries	Developing Countries
	(I) ETR	(II) ETR	(III) ETR
ETR _{t-1}	0.9556*** (0.0223)	0.8012*** (0.0524)	0.9256*** (0.0247)
AEM	0.040*** (0.0231)	0.057*** (0.0137)	0.047*** (0.0124)
SIZE	0.004*** (0.0007)	0.004*** (0.0005)	0.005*** (0.0008)
ROA	0.022*** (0.0080)	-0.057*** (0.0198)	0.035*** (0.0087)
PPE	-0.003 (0.0037)	-0.015 (0.0086)	-0.001 (0.0040)
INT_AST	-0.042*** (0.0091)	-0.044** (0.0174)	-0.039*** (0.0106)
LEV	0.003 (0.0034)	0.0129* (0.0074)	-0.0005 (0.0045)
Constant	0.085*** (0.014)	0.138*** (0.0271)	0.063*** (0.0161)
AR(1)	0.000	0.000	0.000
AR(2)	0.318	0.428	0.435
Hansen	0.262	0.317	0.975
Groups	620	201	419
Instruments	487	487	487
Observations	5580	1809	3771

Note: Table 5 provides empirical results of Two-Step GMM for full sample, developed, and emerging countries to study the impact of firms' earnings management on tax avoidance. *, **, and *** show significance at 1, 5, and 10 percent, respectively.

Table 5 results for developed economies indicate that last year's ETR_{t-1} is a significantly positive determinant of the ETR in developed countries. The last year's ETR_{t-1} coefficient has a positive value of 0.8012. The accrual earnings management coefficient, which has a value of 0.057, is highly significant and positive, indicating that it is an important factor in determining the ETR. This indicates that corporations that use higher degrees of accrual earnings management are engaged in tax avoidance. Managers commonly employ non-conforming techniques to increase book incomes while reducing taxable incomes, hence allowing tax avoidance. Column III of Table 5 provides intriguing insights into developing economies. Notably, it highlights that the ETR from the previous year has a positive impact on the ETR_{t-1} in developing countries. The ETR from the previous year, ETR_{t-1} has a coefficient value of 0.926. Khan et al. (2022) studied the CG and tax avoidance relationship, which aligns with this finding. The significance of this relationship is further boosted by the lagged ETR consistency in both sign and magnitude. AEM has been shown to be a significant and positively determining factor that influences the ETR in developing countries. AEM has a notable positive value of 0.047, meaning

companies that have higher levels are more inclined to use tax avoidance techniques. Managers in such organizations use non-conforming tactics to increase book income while lowering taxable income.

The results in column I show that the ETR_{t-1} from the previous year has a considerable and positive impact on the ETR in developed countries. The ETR from the prior year's baseline ETR_{t-1} has a coefficient value of 0.956. Khan et al. (2022) found a similar sign and size for this lagged ETR in their study on CG and CTA. In terms of control variables, firm size is positively associated with CTA. For a full sample and developed countries, the firm size coefficient value is positive (0.004), and for the developing Asian economies, it is statistically significant at 1%. ROA is an economic indicator that shows heterogeneous behavior across different settings. The coefficient of ROA is negative (-0.057) and statistically significant at 1% for developed economies in Asia, demonstrating that greater ROA is linked to lower levels of CTA. On the other hand, the ROA is positive (0.035 and 0.022, respectively) and statistically significant at 1% for the full sample and Asian developing economies, suggesting that an increase in ROA leads to higher degrees of corporate tax avoidance. Whereas PPE does not statistically influence CTA in the full sample data, it aligns with existing literature (Richardson et al., 2013). In contrast, INT_AST shows negative beta coefficients for the full sample (-0.042), developed countries (-0.044), and developing countries (-0.039). Finally, LEV has no statistically significant influence on CTA. This implies that firms should use alternative tax avoidance methods to reduce income tax rates. These findings are consistent with those documented by (Mayberry et al., 2013).

4.4 Impact of EM on CTA: Moderating Role of CGI

Table 6. Moderating Effect of CGI on the Relationship between EM and ETR

Variables	Full Sample	Developed Countries	Developing Countries
	(1) ETR	(2) ETR	(3) ETR
ETR_{t-1}	0.6834*** (0.0960)	0.4615*** (0.1332)	0.6955*** (0.0998)
AEM	0.041*** (0.0091)	0.026* (0.0148)	0.129*** (0.0214)
CGI	-0.021** (0.0098)	-0.004*** (0.0038)	-0.001*** (0.0019)
AEM*CGI	0.012* (0.0059)	0.063*** (0.0108)	0.004*** (0.0005)
SIZE	0.004*** (0.0007)	0.003*** (0.0006)	0.005*** (0.0008)
ROA	0.022*** (0.0080)	0.059*** (0.0197)	0.035*** (0.0087)
PPE	-0.009** (0.0039)	-0.014* (0.0086)	-0.0009 (0.0039)
INT_AST	-0.048*** (0.0111)	-0.043** (0.0174)	-0.039*** (0.0106)
LEV	0.029*** (0.0055)	0.013* (0.0074)	-0.0005 (0.0045)
Constant	0.086*** (0.0140)	0.140*** (0.0271)	0.064*** (0.0161)
AR(1)	0.000	0.000	0.000

AR(2)	0.210	0.167	0.703
Hansen	0.441	0.377	0.410
Groups	620	201	419
Instruments	111	111	111
Observations	5580	1809	3771

Note: Table 6 presents the estimated results of the moderation analysis to study the moderating impact of CG on the relationship between EM and CTA. Significance levels: $p < 0.10$ (*), $p < 0.05$ (**), $p < 0.01$ (***)

Table 6 shows the moderation analysis, which tests the CG influence on CTA and related factors, such as EM. When the necessary conditions are met, the moderation regression is conducted following the methodology proposed by Baron and Kenny (1986). Table 6 demonstrates the significant and positive influence of the prior year's ETR_{t-1} on the ETR in the full sample of developed and developing economies. The coefficient values for ETR_{t-1} are positive and 0.6834, 0.4615, and 0.6955 for the full sample, developed countries, and developing countries, respectively. In Table 6, CGI is defined as having a moderating influence on the relationship between AEM and the ETR. The analysis reveals that CG moderates the relationship between EM and CTA for the full data sample ($\beta = 0.012$, $p < 0.10$). The direct impact of CG ($\beta = 0.063$, $p < 0.01$) significantly and positively modifies the relationship between EM and CTA in developed countries. The direct impact of CG similarly significantly and positively modifies the association between EM and CTA in developing countries ($\beta = 0.004$, $p < 0.01$).

4.4 Robustness Results

GMM was applied to panel data outcomes to conduct additional steps for stability confirmation. The CETR, as an alternative proxy, is used for robustness tests and analysis of CTA. The full sample, which included both developed and developing economies, is tested in this study. The alternative measure is employed to validate and improve the reliability of the original panel data results. These robustness tests contribute to the overall consistency of the study and the reliability of the inferences made from the data.

Table 7. Impact of EM on CETR

	Full Sample	Developed	Developing
Variables	(1)	(2)	(3)
	CETR	CETR	CETR
$CETR_{t-1}$	0.4841*** (0.0946)	0.6078*** (0.0635)	0.4426*** (0.0803)
AEM	-0.040* (0.0231)	-0.091* (0.0477)	-0.021** (0.0089)
SIZE	0.001 (0.0014)	0.004*** (0.0005)	0.002*** (0.0009)
ROA	0.057*** (0.0150)	0.013* (0.0074)	0.088*** (0.0161)
PPE	0.014** (0.0068)	0.003 (0.0128)	0.008 (0.0067)
INT_AST	0.036** (0.0171)	0.014 (0.0257)	0.060*** (0.0187)
LEV	-0.015 (0.0150)	-0.045*** (0.0109)	-0.011 (0.0082)
Constant	0.099***	0.110***	0.073***

	(0.0261)	(0.0400)	(0.0177)
AR(1)	0.000	0.000	0.000
AR(2)	0.116	0.432	0.323
Hansen	0.268	1.000	0.988
Groups	620	201	419
Instruments	487	487	487
Observations	5580	1809	3771

Note: Table 7 shows the impact of EM on CETR for the full sample of developed and emerging countries. Significance levels are indicated by: $p < 0.10$ (*), $p < 0.05$ (**), $p < 0.01$ (***)

Table 7 shows significant insight into the relationship between various factors and ETR in different contexts. In the complete sample data of developed and developing economies, the previous year's ETR_{t-1} is found to be a significant and positive determinant of the current ETR. The ETR_{t-1} is positive and statistically significant at the 1% level, with coefficient values 0.4841, 0.6078, and 0.4426 for the full sample, developed and developing economies, respectively. The research shows that AEM has a significant and negative determinant of the CETR of developed economies. AEM has a negative coefficient with a value of -0.091, meaning that companies use CTA practices with a higher level of AEM. The findings also demonstrate significant negative relationships between AEM and CETR for developing countries and the full sample, with beta values of -0.021 and -0.040, and statistical significance at 5% and 1%, respectively.

Table 8. The impact of EM on CETR Moderating role of CGI

	Full Sample	Developed	Developing
Variables	(1)	(2)	(3)
	CETR	CETR	CETR
$CETR_{t-1}$	0.2820*** (0.1351)	0.4615*** (0.1333)	0.3228** (0.1269)
AEM	-0.040* (0.0231)	-0.089** (0.0478)	-0.023** (0.0089)
CGI	0.071*** (0.0186)	0.009*** (0.0039)	0.001** (0.0048)
AEM*CGI	0.020*** (0.0076)	-0.122** (0.0702)	-0.017* (0.0093)
SIZE	0.111*** (0.0117)	0.003*** (0.0006)	0.002*** (0.0005)
ROA	0.057*** (0.0150)	0.050** (0.0209)	0.117*** (0.0142)
PPE	0.0143** (0.0068)	0.003** (0.0011)	0.018** (0.0082)
INT_AST	0.0362** (0.0171)	0.008 (0.0228)	0.048** (0.0219)
LEV	-0.025*** (0.0072)	0.004 (0.0098)	-0.011 (0.0083)
Constant	0.100*** (0.0261)	0.113*** (0.0401)	0.096*** (0.0334)
AR(1)	0.000	0.000	0.000
AR(2)	0.440	0.959	0.204
Hansen	0.356	0.501	0.238
Groups	620	201	419
Instruments	111	111	111

Observations	5580	1809	3771
Note: Table 8: Moderating Effect of CGI On The Relationship Between EM And CETR. Significance level is indicated by: p < 0.10 (*), p < 0.05 (**), p < 0.01 (***)			

Table 8 illustrates that CGI has a moderating role on the link between AEM and CETR. The relationship between accrual earnings management and CETR is significantly and negatively moderated for developed countries by the direct impact of CG ($\beta = -0.122$, $p < 0.05$). This proposes that in developed countries, a sound CG framework serves as a reducing factor, limiting the impact of AEM on the cash-effective tax rate. However, for developing countries, the direct impact of CG also significantly and negatively impacts the relationship between EM and CTA ($\beta = -0.017$, $p < 0.01$). The study suggests that CG limits the impact of EM on CTA within developing countries in a way similar to developed countries. Results for the full sample reveal a different pattern, with CG positively moderating the association between AEM and CETR ($\beta = 0.020$, $p < 0.01$). It indicates that in the full sample, CG enhances the link between AEM and CETR. Overall, the results show how CG fluctuates across various economies in its impact on the relationship between accrual earnings management and CETR. The CG functions as a mitigating factor in both developed and developing countries, reducing the impact of earnings management on tax avoidance. Whereas CG, however, strengthens the relationship between EM and CTA across the full data sample. These results show the CG practices in determining tax-related results in adverse economic environments.

5. Discussion and Conclusion

5.1 Discussion

Our empirical research follows up on the prior results reported by Delgado et al. (2023), who showed the AEM had a favorable and vital effect related to CTA. Further, they document that AEM enhances management control and decreases corporate tax evasion. Similarly, their evidence demonstrates that in developing economies, AEM has been related to tax avoidance. Furthermore, the lag of the ETR has a sign and magnitude that is similar to the findings of Khan et al. (2022), who also find similar findings in examining how CG influences CTA. The findings of the research verify the agency theory, showing that managers and shareholders may profit from company tax avoidance via earnings management. To enhance post-tax returns, attract more investors, develop resources, or for debt repayment, shareholders frequently request managers to adopt actions that lower corporate income tax obligations. However, it should be noted that in some cases, managers may use earnings management techniques not only to benefit shareholders but also to enhance their interests by evading corporate income tax. Further, this theory also discusses how CTA through earnings management can benefit both managers and shareholders. Shareholders often want managers to take such actions that reduce corporate tax liabilities to increase after-tax returns, attracting more investment, resource development, and repayment of debts. Furthermore, managers sometimes use EM practices for tax avoidance, even if such actions do not directly benefit shareholders. This arrangement supports the results of Frank et al. (2009) and Hong et al. (2022), which have also been observed in developed economies. The role of accrual earnings management in predicting CTA is underscored by their findings. Consistent outcomes have also been reported in previous studies by Desai and Dharmapala (2006) and Mulyadi and Anwar (2015), confirming a positive relationship. Similarly, Zimmerman (1983) emphasizes the importance of implementing effective control systems, accurate financial reporting, and preventing fraudulent

behavior as means of attaining this moderation. Furthermore, these activities encourage transparency and responsible behavior within the company. The results of Gupta and Newberry (1997) and Richardson et al. (2013) are similar to this research, that is, firms with greater intangible assets showed a lower rate of CTA. The results are related to the findings that discuss how business tax avoidance practices and poor company governance have been linked in similar ways (Khan et al., 2022). The finding is consistent with the prior study, which shows that the higher corporate associations in CTA activities are associated with higher access to tax incentives and administrative engagements (Ha & Phan, 2017). Further, evidence from the study aligns with agency theory, which holds that managers have inherent interests in the company and vice versa (Jensen & Meckling, 2019). Consequently, effective CG is required to mitigate conflicts of interest with shareholders (Sirot et al., 2023).

5.2 Conclusion

This research examines how information asymmetry facilitates managerial discretion in accounting, a repetition consequential from the inherent agency conflict between managers and stakeholders. The main experiment is the efficient use of EM to reduce tax burdens, which generally represents the main expenditure for corporations. The study examined how managers take advantage of gaps in financial reporting standards and tax regulations for tax avoidance, as well as how CG structures moderate this aggressive behavior. This study aims to observe how EM influences CTA in Asian developed and developing economies, taking into account the moderating effect of CG. Annual Data were gathered from a variety of sources between 2011 and 2020 in order to do empirical estimation. There were two stages to using the GMM. The results show that EM has positive effects on CTA. More specifically, it is revealed that corporations that are involved in more accrual-based earnings management are additionally involved in tax avoidance. Furthermore, it is found that CG moderates the relationship between EM and the ETR. For all samples, CG's moderating effect was validated. The relationship between CTA and EM in developed economies has been found to be considerably and favorably moderated by company governance. The same relationship was found to be significantly and positively reduced by CG in developing nations, revealing a comparable pattern. The results also show that managers can use unconventional approaches to enhance reported book revenue and lower taxable earnings similarly. This approach contributes to greater levels of CTA, especially when earnings management is aggressively pursued. These empirical findings corroborate the agency theory's tenets and the conclusions of earlier research, which suggests that managers and shareholders both gain from CTA through earnings management (Delgado et al., 2023).

Shareholders usually want to take steps to reduce corporate tax to improve post-tax returns, attract investments, resource development, or debt repayment. However, it should be noted that sometimes managers may manipulate earnings to reduce corporate taxes for their benefit, not for shareholders. The common perception is that businesses can enhance their earnings by engaging in tax avoidance strategies. (Hanlon & Heitzman, 2010; Preuss, 2010). Previous studies demonstrated that CTA has a substantial effect on the actions firms take, including CSR activities (Emerson et al., 2020; Kovermann & Velte, 2019). It has also been reported that corporations with more organizational capital involved in excessive tax avoidance activities, such as shifting profits to subsidiaries (Omar & Zolkafllil, 2015). Moreover, evidence revealed that the influence of CTA on EM is negative in the occurrence of strong CG. The CTA decreases with increased EM and higher independence of board directors. However, the

percentage of external board directors does not moderate the effect of EM on CTA (Chen et al., 2019; Frank et al., 2009). The findings are as per agency theory, which argues that CTA can benefit managers and shareholders through EM. Managers can engage in EM practices to avoid corporate tax, not necessarily for the benefit of shareholders, but to serve their interests (Chen et al., 2019).

For the researchers, this study demonstrates how firms use EM practices to reduce taxes and how it can influence accounting decisions, therefore contributing to the literature on agency and accounting theories. These insights are very important for practitioners, regulators, and investors to improve performance evaluations and the interpretation of financial statements. Furthermore, regulators may use these outcomes to improve tax policies. Whereas investors can better estimate the long-term sustainability of earnings, though tax-saving practices are prevalent.

This study contributes to the literature by exploring the relationship between managerial opportunism and CG. Furthermore, the novelty of the study lies in examining how CG structures moderate the association between CTA practices and the financial reporting standards. The study provides a thorough view of how internal monitoring influences external openness by emphasizing that aggressive financial reporting frequently indicates aggressive tax reporting.

The study has certain limitations. Data were limited to ten years and focused solely on non-financial firms in Asian developed and developing economies. Consequently, generalizability to other regions may be restricted. Further future study is recommended to investigate CTA in financial institutions and other geographic contexts, considering the roles of earnings management and CG. Comparing Asian, European, and American companies by region might also result in more generalized findings. Raising the sample size and analyzing the association between CG, CTA, and corporate performance could further improve the study's potential for generalization.

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Appendix – A: Agency Theory Equation (Fama & Jensen, 1983)

1. Firm Value Function

Shareholders aim to maximize after-tax firm value:

$$V = \Pi - T$$

Where:

- V = Shareholder value
- Π = Pre-tax profit
- T = Corporate tax payment

2. Manager Utility Function (Agency Setting)

Managers maximize their own utility, which includes compensation and private benefits:

$$U_M = W + \alpha V - C(E) - R(TA)$$

Where:

- W = Fixed compensation
- α = Performance-based incentive
- V = Firm value (after tax)
- $C(E)$ = Cost of effort
- $R(TA)$ = Risk or penalty cost of tax avoidance (legal/regulatory risk)

3. Tax Minimization in Agency Context

Let tax be:

$$T = \tau(\Pi - EM)$$

Where:

- τ = Corporate tax rate
- EM = Earnings management/tax avoidance actions

Substituting into firm value:

$$V = \Pi - \tau(\Pi - EM)$$

$$V = \Pi(1 - \tau) + \tau EM$$

In simple terms:

Agency Conflict in Tax = Optimal Tax Avoidance (Shareholders) – Chosen Tax Avoidance (Managers)

Appendix – B: Signaling Theory by Dechow and Skinner (2000)

Managers signal firm quality through observable financial outcomes:

$$\text{Signal} = f(\text{Reported Earnings}, \text{Tax Strategy}).$$

Investors interpret these signals to update expectations about firm value.

Earning Management & Tax Avoidance in Quantitative Signaling Approach

1. True Firm Value (Unobservable to Investors)

$$V^* = \Pi' + \theta,$$

where

- V^* = True Corporate value
- Π' = True profit
- θ = management information for future prospects

Investors cannot openly notice V^* .

2. Observable Signal Sent by Managers

Reports earnings and tax management signals by Managers:

$$S = ER + TA,$$

where

- S = Market signal
- ER = Reported earnings (after earnings management)
- TA = Tax avoidance intensity

3. Earnings Management Component

$$ER = \Pi' + EM',$$

where

- EM = Earning management variations

4. Avoidance Signal of Tax Expense

$$T = \tau(\Pi' - TA'),$$

where

- T = Corporate tax expenses
- τ = Tax rate
- TA' = Tax avoidance activities reduce tax signal increased efficiency.

Combined Signaling Equation

Substituting:

$$S = (\Pi' + EM') + TA',$$

This shows

- Increased earnings management \rightarrow robust positive signal
- More tax avoidance \rightarrow signal of productivity and cost control

Market Interpretation Function

Stakeholders update perceived corporate value via signals: $V = E[V^*|S]$

Market value is based on how stakeholders infer informed earnings management and tax actions.

Appendix – C: Stakeholder Perspective of Signaling Theory by Freeman, (2010)

Stakeholder Value Function

Corporate value under stakeholder theory is multi-area:

$$V = f(V'_{SH}, V'_{EMP}, V'_{CUST}, V'_{COM}, V'_{GOV}),$$

where

- V'_{SH} = Shareholder value
 - V'_{EMP} = Employee welfare
 - V'_{CUST} = Customer value
 - V'_{COM} = Community perception
 - V'_{GOV} = Government relationship
- Dissimilar main agency theory, value is not single-prospective.

Quantitative Signaling approach with Earnings Management & Taxable Activities

1. Signal Function

Executives send noticeable signals via reporting and tax results:

$$S = ER + TA + CSR,$$

where

- ER = Reported earnings
- TA = Tax avoidance intensity
- CSR = Corporate social responsibility disclosures

3. Earnings Management Component

$$ER = \Pi + EM,$$

where

- Π = True profit
- EM = Earnings management discretion

4. Tax Payment Function

$$T = \tau (\Pi - TA),$$

where

- T = Tax paid
- τ = Tax rate
- TA = Tax avoidance

Lesser tax expenses may signal productivity to investors, but may signal speculation to the public.

5. Stakeholder Reaction Function

Stakeholder insight updates firm status:

$$\text{Rep} = E[\text{Rep} | S]$$

Corporate value then becomes:

$$V = f(\text{Rep}, \text{Cash Flow})$$

- If signals are observed as ethical and efficient, \rightarrow repute increases \rightarrow corporate value increases.
- If observed serpentine or socially unreliable \rightarrow reputation declines \rightarrow stakeholder engagement rises.

Appendix – D: Tax Planning Theory (Based on Michelle Hanlon & Shane Heitzman, 2010)

1. Firm After-Tax Profit Function

The primary objective:

$$\max V = \Pi - T,$$

where

- V = After-tax firm value
- Π = Pre-tax accounting profit
- T = Corporate tax liability

2. Corporate Tax Liability with Planning

Tax payments depend on tax planning actions:

$$T = \tau(\Pi - TA),$$

where

- τ = Statutory tax rate
- TA = Tax avoidance/planning intensity

Greater tax planning reduces taxable income.

3. Earnings Management Role in Tax Planning

Reported earnings include discretionary adjustments:

$$ER = \Pi + EM,$$

where

- ER = Reported earnings
- EM = Earnings management used for tax purposes

Managers often adjust earnings downward to reduce taxes or upward for reporting incentives.

4. Integrated Tax Planning Equation

Substituting the tax function into the firm value:

$$V = \Pi - \tau(\Pi - TA)$$

Simplified:

$$V = \Pi(1 - \tau) + \tau TA$$

If earnings management affects taxable income:

$$V = (\Pi + EM)(1 - \tau) + \tau TA$$

Appendix - E

Kao Cointegration Test: (Dependent Variable = ETR)

Sample: 2011 2020 (Annual Data)
No of observations: 6200
H₀: No cointegration
Trend assumption: No deterministic trend
User-specified lag length: 1
Newey-West instinctive bandwidth selection and Bartlett kernel

	t-Statistic	Prob.
ADF	-4.8336	0.000
Residual variance	0.000973	
HAC variance	0.000713	

Kao Cointegration Test: (Dependent Variable = CETR)

	t-Statistic	Prob.
ADF	-10.54672	0.000
Residual variance	0.00510	
HAC variance	0.002832	

Note: The Probability value of the Kao cointegration test is significant at 1%, rejecting the null hypothesis of no long-run relationship. It implies that a long-run relationship exists among CETR and other independent variables.