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Article

Earnings quality and firm value: Does corporate governance matter?

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Earnings quality and firm value: Does corporate governance matter?

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ABSTRACT

This study examines the relationship between earnings quality and the firm value of listed companies in the Stock Exchange of Thailand (SET) in the property and construction sector. This research further investigates whether effective corporate governance (CG) mechanisms enhance the relationship between earning quality (measured by the accruals component and total accruals) and firm value (measured by Tobin's Q). The information is gathered from 84 listed companies comprising 672 firm-year observations covering the period from 2014 to 2021. The empirical findings indicate a statistically significant positive relationship between earnings quality and firm value. We discover that firms with strong CG tend to experience a stronger positive relationship between earnings quality and firm value than those with weak CG. The results are robust different proxies for firm value measurement.

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1. Introduction

Financial reporting is crucial for evaluating a company's success, reflecting its position and performance for stakeholders (Latif et al., 2017), such as executives and investors. These reports are essential tools for analyzing and making investment decisions and communicating financial activities effectively. The reliability of financial reports directly influences decision accuracy (Shahwan, 2008; Tontiset, 2015), with profit often being the key factor considered by financial reports' users (SME Bank of Thailand, 2022). Inadequate transparency and adjustments in financial reporting diminish stakeholder confidence in data accuracy, potentially leading to financial reports that must accurately represent the company's performance and financial position, thus affecting stakeholders' trust (Schipper & Vincent, 2003; Sritarapipat, 2015). Quality profits are defined as profits with high cash flow components and low accruals (Schipper & Vincent, 2003) that arise from normal operations and recurring revenue that can be converted into cash sufficient to replace depreciating assets (Tummanon, 2006).

Earning quality (EQ) is a crucial indicator drawing attention from various stakeholders. It accurately predicts future performance and financial insights, aiding effective economic decisions (Hung et al., 2020; Salehi et al., 2020). Penman and Zhang (2002) define EQ as a firm's capacity to predict future income. Richardson et al. (2001) evaluate EQ through future income persistence, and Beneish and Vargus (2002) concur that a firm's revenue persistence indicates its earning quality. Investors in the capital market heavily rely on financial statement data to assess a firm's future cash flow and anticipate returns (Francis et al., 2004). Therefore, in order to make effective decision, the financial reports' users require high quality financial information.

The significant crises in the financial world that occurred in the past include the 1997 Asian financial crisis and the 2008 Subprime mortgage crisis. These are two worldwide financial crises related to earnings management and unavoidably influence EQ. The challenging issue associated with the crisis is

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earning management. The pressure of such crises often motivates manipulation of accounting data before its public release (Persakis, 2018; Rosner, 2003), which may impact the quality of earnings reported by firms (An, 2017). Recording impaired real estate debt as sales is an example of accounting distortion, resulting in increases in profits on a company's financial statements. However, the actual condition of the real estate is not recovering, causing some firms to accumulate losses and eventually go bankrupt (Lioudis, 2023). Additionally, another sector prone to accounting distortion is the construction and real estate development industry, which is often motivated to expedite income or sales recognition for the benefit of stakeholders (Sincharoonsak, 2013).

There are some previous studies exploring the relationship between EQ and firm performance or stock return; limited research exists on the relationship between earning quality and firm value (Asimakopoulos et al., 2020; Choi, 2008; Gaio & Raposo, 2011; Latif et al., 2017; Theophyllus & Oyesola, 2018). In Thailand, especially in the property and construction sector, as the context of this study, there is no literature exploring the relationship between EQ and firm value. The findings of previous studies also indicate inconclusive results. For example, some prior related studies found a positive relationship between EQ and firm value (Asimakopoulos et al., 2020; Chia-Wu, 2012; Choi, 2008; Gaio & Raposo, 2011; Jiujin et al., 2013; Latif et al., 2017; Theophyllus & Oyesola, 2018), whereas Hutagaol-Martowidjojo et al. (2019) found the negative relationship between EQ and firm value of companies listed on the Jakarta Stock Exchange. The relationship between EQ and firm value of firms listed in this sector remains questionable. This uncertainty is an opportunity for further investigation.

Corporate governance or CG practice is the management idea that affects a company in many aspects, including protecting investors' interests (La Porta et al., 2000; Utama et al., 2017), ensuring the integrity of the company, mitigating the potential for corruption (Alqooti, 2020), improving the investment efficiency (Agyei-Mensah, 2021; Ullah et al., 2020), and providing advantages to firm's fund-raising (The Stock Exchange of Thailand, 2017). More importantly, the CG practice plays a role in reducing the opportunities for earnings management practices (Al-Haddad & Whittington, 2019), which may increase the quality of earnings, improve and develop transparency (Torchia & Calabrò, 2016; Tulcanaza-Prieto & Lee, 2022), enhance the quality of financial reporting (Alzeban, 2020; Mouselli et al., 2014).

This research is driven by several motivation, first, the property and construction sector is one of Thailand's most important leading sectors, significantly contributing to the national economy (Klinchuan Chun, 2023; World Bank Blogs, 2009). This sector provided 10% of Thailand's GDP in 2022 (Krungsri Research, 2023), as well as the property and construction sector impact the development of other industries, such as finance, electrical appliances, and furniture. Second, the increasing importance of Thailand's property and construction sector coupled with challenges in the quality of financial reports, especially profit. If the earnings provided in the Thai real estate firm's financial reports are of high quality, such information could encourage more investors to invest in the industry. Furthermore, to be consistent with the principle of long-term investment for sustainability (Suttipun, 2023), if this study can prove that EQ is significant in enhancing firm value, then EQ may be an essential component in assisting with investment decisions. Last, in the context of this sector, there have yet to be any comprehensive studies on the relationship between EQ and firm value. This study is novel and could serve as evidence for firms in the property and construction sector to become more aware of the importance of EQ.

Based on the compelling reasons above, this study aims to (1) investigate the relationship between EQ and the firm value of listed firms in the property and construction sector of the Stock Exchange of Thailand and (2) examine whether firms with different levels of CG practices have different relationships between EQ and firm value. There are two research questions: What is the relationship between EQ and the firm value of listed firms in the property and construction sector of the Stock Exchange of Thailand? and could stronger CG practices enhance the relationship between EQ and firm value?

Balanced panel data of 84 property and construction companies listed on the Thailand Stock Exchange between 2014 and 2021 were used in this study. The study found that EQ is positively and significantly related to firm value. Firms with strong CG tend to have a stronger positive relationship between EQ and firm value than those with weak CG. Effective CG mechanisms enhance the positive relationship between EQ and firm value. In further tests, we demonstrate that our primary findings remain robust to alternative measures of a company valuation. Strong CG effectively monitors the managerial opportunistic behavior of earnings management, increasing EQ. Our findings contribute to the finance literature in

different dimensions. Firstly, the study demonstrates how EQ relates to firm value. Secondly, this study also reinforces the importance of CG in enhancing the positive relationship between EQ and firm value. Regarding practical contributions, the study's findings are essential for executives and investors. The firm value may be attained by enhancing the quality of financial reports and implementing CG principles throughout the firm.

The paper is organized as follows: [Section 2](#) shows the literature reviews and hypotheses development. [Section 3](#) explains the research design. [Section 4](#) presents the empirical results and discussion. Finally, [section 5](#) provides a summary and conclusion, policy implications, limitations, and suggestions for future studies.

2. Literature review and hypothesis development

This study used agency and signaling theories to explain the relationship between EQ and firm value and clarify the effect of different CG practices on the relationships between EQ and firm value. There are three sections in this study including a theoretical literature review, earning quality and firm value, and the role of CG practice on the relationship between EQ and firm value.

2.1. Theoretical literature review

There are two foundation theories in this study, which are agency theory and signaling theory. Jensen and Meckling (1976) explained that agency theory is a relationship between the principal and agent. As the firm's owner, the principal agrees to transfer resources and management rights to another person known as an agency, which administers them so that the principal achieves the maximum returns while the agent receives compensation. As long as the management (agent) decides to invest to create the highest return, aiming to create shareholder's wealth, the relationship of shareholders as principal and agent remains effective. On the contrary, if the interests and objectives of shareholders and management do not align, agency problems may occur and lead to agency costs and may have a negative impact on the business since the agents may decide in the way that prioritizes their interest instead of the shareholders wealth (Jensen & Meckling, 1976; Wahyudin & Solikhah, 2017; Worokinasih & Zaini, 2020). Moreover, Spence (1973) introduced that firm information sharing is important. It suggests that firms should give all stakeholders essential information, such as their financial performance, prospects, and governance practices (Chatterjee & Rakshit, 2020; Devie et al., 2020; Dey, 2008; Kyere & Ausloos, 2020).

2.2. Earning quality and firm value

Profit is financial information that investors often use to make investment decisions. If profits are related to stock prices or returns, then quality profits can be helpful in effective forecasting and investment analysis. Quality profits are profits generated during a period corresponding to cash flow creation. EQ is an effective current performance reflected in financial reports and will be a reliable predictor of future performance and the firm's intrinsic value. Meanwhile, the more complicated the process of estimating cash flows, the more likely the profit will be of poor quality (Stickney, 1996). In addition, high-quality profits should result from regular operations and be convertible into cash sufficient to meet needs. This is consistent with Sukserm (2007), who stated that quality profits result from recurring activities and are convertible into cash sufficient to replace depreciable assets. Earning quality (EQ) is the relationship between accruals and cash flows, which are profit components. According to this viewpoint, quality profits are defined as profits with high cash flow components and minimized accruals (Schipper & Vincent, 2003). Meanwhile, EQ mainly refers to the absence of earnings management (Healy & Wahlen, 1999; Kamarudin & Ismail, 2014). Managers may manipulate financial statements by inflating current earnings, exaggerating sales and revenue, or intentionally deflating current period costs and expenses, all of which present a better indication of the firm's ability. Therefore, the level of earnings management will affect EQ.

High-quality earnings represent current operating performance, are a reliable predictor of future operating performance, and appropriately reflect the intrinsic value of the firm (Dechow & Schrand, 2004),

while weak EQ is a sign of information asymmetry between external and internal stakeholders (Pimentel & Jorge, 2019; Salehi et al., 2020, 2022). Gaio and Raposo (2011) conducted a study measuring EQ based on seven income attributes. The result found that higher EQ leads to a statistically significant increase in firm value. This is consistent with a study of 214 non-financial listed firms in Pakistan, which found that EQ positively contributes to maximizing firm value (Latif et al., 2017) and aligns to a study by Asimakopoulou et al. (2020), listed companies on the Athens Stock Exchange with higher quality of earnings have a greater firm value.

Choi (2008) investigated the influence of EQ on the firm value of manufacturing firms listed on the Korea Stock Exchange between 2003 and 2005. The study discovered the positive influence of EQ on firm value. The higher the EQ, the higher the firm value. Financial information reliability is crucial when determining Korean public companies' market value. The results of this study also reinforce the importance of EQ in reducing information risk and cost of equity. Theophilus and Oyesola (2018) examined the impact of EQ on Tobin's Q of 51 firms listed on the Nigerian Stock Exchange between 2000 and 2016. The findings revealed that earnings persistence, a measure of EQ, positively affected firm value. Jiujin et al. (2013) studied EQ's impact on SMEs' firm value on the Shenzhen Stock Exchange between 2009 and 2012. The earnings management behavior of executives contributes to a decrease in EQ. The study's findings show that manipulating earnings significantly negatively impacts the company's value. Companies listed in the Taiwan Stock Exchange (TWSE) were used to study the impact of EQ on risk-taking level and firm value. The data were divided into two periods: before the financial crisis (2001–2007) and after the financial crisis (2008–2010). The study found that EQ results in a decrease in risk-taking levels and an increase in firm value. Companies with low EQ or high accruals have lower firm value, especially after the 2008 financial crisis (Chia-Wu, 2012). High EQ and greater liquidity in Jordanian public shareholding companies in the industrial sector can increase the market value of their shares (Alsufy et al., 2020). The positive relationship between earning quality and firm value in many European countries has been found (Fassas et al., 2023).

Studies on the impact of EQ on firm value and firm performance in the Thai context are quite limited, and the findings vary from previous studies. Chumsai na Ayudhya (2007) studied the impact of EQ on the firm value of listed companies listed on the Stock Exchange of Thailand between 2003 and 2005. Total accrual was used to measure EQ, while the market value of equity measured firm value. The study found that the market value of equity decreases with high accounting accruals, which can be caused by low cash flow components and result in low EQ. Phromin (2017) examined the relationship between firm performance, EQ, and market stock price of listed firms in the SDET in the technology industry group between 2014 and 2016. Working capital accruals (WCA) and total net operational accruals (NOA) were used to determine EQ. The analysis discovered that WCA and NOA have an adverse relationship with the stock price. A decrease in the accrual component indicates that net profit can better reflect cash flow, reflecting the quality of earnings and increasing the stock market price. Suaplai (2011) studied the relationship between EQ and the firm value of 42 listed companies in the Market for Alternative Investment (MAI) between 2007 and 2010 with 168 firm-year observations. The accruals component measured EQ, while Tobin's Q measured firm value. However, the study found that EQ had no effect on firm value, while firm size and capital structure, which are control variables, positively impacted firm value. Furthermore, EQ could affect other factors and create changes in business value, such as the quality of financial information; accounting profit directly impacts on lowering the cost of capital (Easley & O'hara, 2004; Leuz & Verrecchia, 2005). EQ decreases the costs of agency conflicts as well as delivers a better future cash flow for shareholders. This means that EQ can reduce the cost of equity (Watts, 2003). With a high level of information asymmetry between shareholders and managers, shareholders may require a high rate of return to compensate for the risk. Therefore, EQ is one of the most essential information levels. Higher EQ may lead shareholders to expect a lower required rate of return, resulting in a lower cost of capital and an increase in firm value.

The results of the above empirical studies revealed inconsistencies and the relationship between EQ and firm value remains unresolved. Consequently, there exists a need for more literature and a researchable gap between EQ and firm value, which is the substance of this study. Considering the findings above regarding the relationship between EQ and firm value, including the above conclusions, the following hypothesis was proposed:

Hypothesis 1. *There is a significant and positive relationship between earning quality (EQ) and firm value of listed companies in SET in the property and construction sector.*

2.3. Role of corporate governance (CG) practice on the relationship between EQ and firm value

The Stock Exchange of Thailand (2017) defines corporate governance (CG) as a system focusing on the relationships of all stakeholders, including the management team, the board of directors, shareholders, and others. In the meantime, the Organization for Economic Cooperation and Development (OECD) (2015) defines CG as a control system that separates the roles and rights of all stakeholders as well as defines the procedures for making decisions based on the firm's objectives. Moreover, Srijunpetch (2012) described CG as a quality management system that promotes efficiency, creates competitiveness, and adds firm value through transparent disclosures.

The information asymmetry between stakeholders influences the difficulties of controlling and monitoring the agent's actions (Jensen & Meckling, 1976). Therefore, companies may prevent agency conflicts by implementing CG, which increases firm value (Subanidja et al., 2016). Tulcanaza-Prieto and Lee (2022) investigate whether effective CG intervenes in the negative relationship between earnings management and firm value. While Nasir et al. (2024) reveal that CG practices improve a firm's value and corporate performance. Even though there are few studies that have examined the role of CG in the relationship between EQ and firm value. On the other hand, there is a link between CG practices and EQ (Bekiris & Doukakis, 2011; Mahrani & Soewarno, 2018; Mollah & Zaman, 2015; Suhadak et al., 2019; Tjahjadi et al., 2021). He et al. (2009) mentioned that firms with strong CG practices introduce the accounting-monitoring process, improve shareholder confidence, reduce opportunistic earnings management, and enhance EQ. Harymawan and Nowland (2016) showed that stronger government effectiveness results in higher EQ. El-Helaly et al. (2018) examined the relationship between CG and earnings management and found that effective CG practice was negatively associated with earnings management. The statistically significant negative relationship between earnings management and firm value disappears for firms with strong CG, implying that CG plays a moderating role in the negative relationship between earnings management and firm value. Moreover, managers' opportunistic behaviors decrease when firms adopt CG policies emphasizing transparency and disclosure.

In this context, strong CG may enhance the relationship between EQ and firm value because CG characteristics introduce efficient internal control, disclosure, and transparency, reducing the opportunities for earnings management in the firm's processes; firms can reduce information asymmetry, which affects EQ and the firm value. Firms with better CG practice have a stronger relationship between EQ and firm value than firms with poor CG practice. Therefore, our second hypothesis is presented as follows:

Hypothesis 2. *Effective CG mechanisms enhance the positive relationship between earning quality (EQ) and firm value of listed companies in SET in the property and construction sector.*

3. Research design

This study examines listed companies in the property and construction sector of the Stock Exchange of Thailand (SET) from 2014 to 2021 to test whether earning quality influences firm value. The secondary data, which consists of annual reports and financial information, can be retrieved from the SETSMART database prepared by the Stock Exchange of Thailand. There are three sub-sections: (1) population and sample, (2) data collection and variable measurement, and (3) research model.

3.1. Population and sample

The population and sample of this study is all the listed companies in the property and construction sector of the Stock Exchange of Thailand (SET). As mentioned in the introduction section, we select samples based on the reasons as follows: (1) The real estate sector is a prominent industry in Thailand, substantially contributing to the country's economy. Furthermore, this sector's advancement significantly influences the expansion of other businesses; including finance, electrical appliances, and furnishings;

and (2) no comprehensive investigations have examined the relationship between earning quality and firm value of the companies in this sector. This study is novel and provides credible data for firms in this sector to enhance their awareness of earning quality. The initial sample consists of 161 firms. Our sample is then reduced because of the incompleteness of data. Real estate mutual funds, real estate investment trusts, and listed companies with less than eight years of financial information are excluded from the sample. Therefore, the final sample consists of 84 firms with 672 firm-year observations, as detailed in the Table 1.

3.2. Data collection and variable measurement

Data is collected using secondary data from annual reports between 2014 and 2021 reporting periods from the SET Security Market Analysis and Reporting Tool (SETSMART) database. There are four main variable groups in this study, which include (1) firm value represented by Tobin's Q, (2) the main independent variable; earning quality, measured by two different proxies; accruals component (Sloan, 1996) and total accruals (Richardson, 2003), (3) moderating variable, the corporate governance score (CG). The converting approach of the CG level information was used to measure CG scores for this study, and (4) control variables. Five firm-specific characteristics are used as the control variables: firm size, firm growth, net profit margin, return on assets, and leverage. All control variables' proxies are chosen by the previous related studies (Asimakopoulos et al., 2020; Chumsai na Ayudhya, 2007; Gaio & Raposo, 2011; Salehi et al., 2022; Tulcanaza-Prieto & Lee, 2022). All the variable measurements and notations used are shown in Table 2.

Table 1. Sample.

Number of firm-year in the property and construction sector between 2014 and 2021 (161 firms for 8 years)	1,288
Less Real estate mutual funds and real estate investment trusts	(458)
Listed companies with less than eight years of financial information	(158)
Total number of firm-year observation	672

Note: SETSMART Database (2022) and Researchers' own calculation.

Table 2. Description of variables.

Variables	Measurement	Predicted sign	Previous research
Independent variable			
Tobin's Q (TQ)	$\frac{\text{Market Capitalization} + \text{Preferred Stock} + \text{Net Debt}}{\text{Book Value of Total Assets}}$		Chung and Pruitt (1994)
Dependent Variables			
Accruals component (EQ1)	$\frac{(\Delta CA - \Delta CASH) - (\Delta CL - \Delta STD - \Delta TP) - DEP}{\text{Average Total Assets}}$	+	Sloan (1996)
Total Accruals (EQ2)	$\frac{\text{Earnings}_{i,t} - \text{CFO}_{i,t} - \text{CFI}_{i,t}}{\text{Average Total Assets}_{i,t}}$	+	Richardson (2003)
Corporate Governance (CG)	The converting approach of the CG level information of Thai IOD	+	Issarangkul Na Ayuthya (2015) Khamkrut (2019) Potisit (2018) Wuthisingchai (2019)
Control Variables			
Firm size (SIZE)	$\ln(\text{Total Assets})$	+	Asimakopoulos et al. (2020) Tulcanaza-Prieto and Lee (2022)
Firm Growth (GROWTH)	$\frac{(\text{Sales}_{i,t} - \text{Sales}_{i,t-1})}{\text{Sales}_{i,t-1}}$	+	Gaio and Raposo (2011)
Net Profit Margin (NPM)	$\frac{\text{Net Income}}{\text{Total Revenue}}$	+	Chumsai na Ayudhya (2007)
Return on Assets (ROA)	$\frac{\text{Net Income}}{\text{Total Assets}}$	+	Asimakopoulos et al. (2020) Salehi et al., 2022
Leverage (LEV)	$\frac{\text{Total Liabilities}}{\text{Total Assets}}$	-	Asimakopoulos et al. (2020) Tulcanaza-Prieto and Lee (2022)

3.2.1. Dependent variables

3.2.1.1. Firm value (FV). The total present value of all income or benefits expected to be made during the life of a business operation is referred to as the firm value. In other words, firm value consists of actual and potential benefits that a firm can provide, expressed in the form of value we can estimate using the appropriate method. There are various approaches and techniques for determining the firm's value. In general, these approaches concentrate mainly on three perspectives: (1) viewpoints based on corporate assets, (2) viewpoints based on financial performance, and (3) market-based viewpoints.

This study intends to employ perspectives based on financial performance, which is a viewpoint that aims to measure firm value based on business reports, such as financial performance and capital structure or capital mobilization. According to Chung and Pruitt (1994), Tobin's Q index is calculated as follows:

$$\text{Tobin's Q} = \frac{\text{Market Capitalization} + \text{Preferred Stock Value} + \text{Net Debt}}{\text{Book Value of Total Assets}} \quad (1)$$

where market capitalization is the current market value of individual stock, which can be calculated by multiplying the current market share price and number of shares outstanding, net debt is the difference between the book value of current liabilities and the book value of current assets and includes the book value of long-term debt. Tobin's Q values more than one show that the company is more expensive than the replacement cost of its assets, while values between zero and one mean the company is undervalued, as the cost to replace its assets exceeds its market value.

3.2.2. Independent variables

3.2.2.1. Earning quality (EQ). This study used two different proxies of EQ, referring to Sloan (1996) and Richardson (2003). According to Sloan (1996), the total accruals can be calculated by taking the changes in non-cash working capital and deducting the depreciation expense, which should be scaled by average total assets. Non-cash working capital refers to the difference between non-cash current assets and current liabilities, less short-term debt and taxes payable. Total accruals (ACC) can be defined as follows:

$$\text{Accruals component} = \frac{(\Delta CA - \Delta CASH) - (\Delta CL - \Delta STD - \Delta TP) - DEP}{\text{Average Total Assets}} \quad (2)$$

where ΔCA is the current asset's change, and $\Delta CASH$ is the change in cash items. ΔCL and ΔSTD are the changes in current liabilities and the current portion of long-term debt, ΔTP is the change in tax payables, and DEP is depreciation and amortization.

The accruals component is the number of accruals that can reliably and adequately convert profits into cash. The accruals component compares to the net profit in the financial statements. If the accruals component is low, the net profit can be represented as cash flow, indicating that the profit is high quality. However, if the accruals component is high, the reported net profit fails to represent cash flow profit accurately, implying that the company's profits are of low quality. For the simplicity of interpretation, the calculated accruals component values are multiplied by a number of negative one so that high values indicate good EQ, while low values indicate low EQ.

According to Richardson (2003), EQ is measured through earnings management to measure the quality of profits through extraordinary accrual/earnings. We employ Richardson (2003) to measure the quality of earnings, which can be expressed as follows.

$$\text{Total Accruals}_{i,t} = \frac{(\text{Earnings}_{i,t} - \text{CFO}_{i,t} - \text{CFI}_{i,t})}{\text{Average Total Assets}_{i,t}} \quad (3)$$

where total accruals_{i,t} is the ratio of total accruals divided by the average net assets of firm i at year t, Earnings_{i,t} is net income before the extraordinary item of firm i at year t. CFO_{i,t} and CFI_{i,t} are the operating cash flow and investing cash flow of firm i at year t, respectively.

Total accruals are the total accruals scaled by average total assets. Total accruals and profit quality or earning quality are inversely correlated. High total accruals mean low profit or earning quality. In

contrast, low total accruals indicate strong earning quality. For the simplicity of interpretation, the total accruals are multiplied by -1 so that high numbers indicate good earning quality, and a low value indicates poor earning quality.

3.2.2.2. Corporate governance score (CG). The converting approach of the CG level information was used to measure CG scores for this study. The Thai Institute of Directors (Thai IOD) has assessed and published CG reports since 2001. However, the raw CG scores of each company are not announced publicly and are kept confidential. Only the assessed companies will obtain the details of the actual CG scores. Assessed companies are divided into six groups based on their CG scores. Each group has been defined as Excellent (90–100), Very Good (80–89), Good (70–79), Satisfactory (60–69), Pass (50–59), and N/A for 0–49. Only the names of listed companies in the level of good, very good, and excellent will be disclosed in the CG report, while the names of companies with ratings of satisfactory, Pass, and N/A will not be disclosed. Several studies were conducted by converting the level of CG practice into a quantitative variable or dummy variable.

Issarangkul Na Ayuthya (2015) examined the relationship between CG rating and the performance of listed firms in SET during 2010–2014. Firms with scores in the ‘Excellent’ or being rated in the ‘Excellent’ for at least one year during 2010–2014 were assigned a value of 1, while companies that have never rated in the ‘Excellent’ category were assigned a value of 0. Similar to the study of Potisit (2018), the assessed firm with a rating of satisfactory or below was assigned a value of 0, indicating poor corporate governance, while companies with a ‘good’ rating were assigned a value of 1, ‘very good’ is assigned to 2 and 3 is assigned to companies that have received an ‘excellent’ rating. Wuthisingchai (2019) studied the relationship between CG and director compensation in Thai-listed companies during 2016–2018. The authors assigned a value to the CG based on the assessment results. Companies categorized as Excellent, Very Good, and Good were assigned a value of 4, 3, and 2, respectively. Moreover, companies not listed in the CG report would be considered satisfactory or lower, meaning their CG score is not good and will be marked as equal to 1. Khamkrut (2019) examined the influence of CG scores on the financial performance of firms in the Market for Alternative Investment (MAI), which received CG scores at excellent, very good, and good levels for three consecutive years between 2016 and 2018. Each company was assigned a CG value based on the categories provided by Thai IOD. A company with a CG rating of ‘Excellent’ would be assigned a value of 5, while a company with ‘Very Good’ and ‘Good’ would be assigned 4 and 3, respectively.

Following Issarangkul Na Ayuthya (2015), Khamkrut (2019), Potisit (2018), and Wuthisingchai (2019), the CG measurement for this study determining the CG score based on the level given by Thai IOD. Companies categorized as ‘Excellent’ received a value of 4, while companies classified as ‘Very Good’ and ‘Good’ were assigned values of 3 and 2, respectively. Finally, companies not listed in the CG report will be considered satisfactory or lower, indicating their CG practice is poor; the CG score is not good and will be marked as equal to 1.

To examine whether stronger CG practice improves the relationship between EQ and firm value (H_2), years and firms with a CG value greater than or equal to 3 were assigned a value of 1, indicating strong CG practice. In contrast, years or firms with a CG value less than 3 were given a value of 0, suggesting weak CG practice.

3.2.3. Control variables

Five firm-specific characteristics are used as the control variables. The first is the firm size (SIZE), which calculated by the natural logarithm of total assets. Next, corporate growth (GROWTH) is measured by the percent change in sales growth from the previous year. Net profit margin (NPM) is also considered estimated based on the proportion of net income to total revenue. The remaining variables include return on assets (ROA), the proportion of net income on total assets, and leverage (LEV), the total debt to total assets ratio.

3.3. Research model

In analyzing the data, this study’s objectives are: (1) to investigate the relationship between earning quality and the firm value of listed firms in the property and construction sector of the Stock Exchange

of Thailand, and (2) to examine whether firms with different levels of CG practices have different relationships between EQ and firm value. Firstly, descriptive analysis is used to analyze the characteristics of the data used in this study. The correlation between each variable is used to examine the multicollinearity problem. Finally, the multiple regression is used to investigate the relationship between earning quality and the firm value and to examine whether firms with different levels of CG practices have different relationships between EQ and firm value. The baseline model for this study is shown in Equation (4)

$$TQ_{i,t} = \beta_0 + \beta_1 EQ_{i,t} + \beta_2 CG_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 GROWTH_{i,t} + \beta_5 NPM_{i,t} + \beta_6 ROA_{i,t} + \beta_7 LEV_{i,t} + \varepsilon_{it} \quad (4)$$

where $TQ_{i,t}$ is Tobin's Q, which is a proxy of firm value for firm i in year t , $EQ_{i,t}$ is the earning quality measured by accruals component (EQ_1), and total accrual (EQ_2), $SIZE_{i,t}$ is the natural logarithm of total assets, $GROWTH_{i,t}$ is sales growth, $NPM_{i,t}$ is net profit margin, $ROA_{i,t}$ is return on assets and $LEV_{i,t}$ is leverage, measured by total debt to total assets ratio. Equation (4) is used to test both H_1 and H_2 . H_1 analyzes the pooled balanced panel data, whereas H_2 examines whether firms with different levels of corporate governance practices show different relationships between EQ and firm value. All data were divided into two groups according to the level of CG practice.

4. Empirical results and discussion

For the listed companies in the property and construction sector of the Stock Exchange of Thailand, 84 corporate annual reports (from 161 firms), during the period 2014–2021 were used in this study. There are three sub-sections which are (1) descriptive statistics, (2) main results and discussion, (3) robustness test and endogeneity test.

4.1. Descriptive statistics

The descriptive statistics of the variables are shown in Table 3. Tobin's Q can be interpreted as the firm is creating value when Tobin's Q score above one. Whereas, the firm is destroying wealth when Tobin's Q score below one. The mean value of Tobin's Q is 0.914, while the maximum and minimum values of the firm value are 8.230 and -0.273 , respectively. The average EQ for each aspect, such as the accruals component (EQ_1), is 0.027, and the total accruals (EQ_2) is 0.084. Firm size, the logarithm value of total assets of 5.817. The financial leverage, the ratio of total liabilities to total assets with an average value of 0.494, an average net profit margin of 1.6%, and an average rate of ROA of 3.2%.

4.1. Main results and discussion

4.2.1. Correlation analysis

According to the data presented in Table 4, a significant positive correlation exists between the firm's value and earnings quality, as measured by EQ_1 , at the 99% confidence level (coefficient: 0.210). Nevertheless, the correlation between firm value and EQ_2 was not found. We also observe that the VIF does not exceed 10 (Gujarati & Porter, 2009), enabling us to conclude that no significant multicollinearity concerns exist.

Table 3. Descriptive statistics.

Variable	Max	Min	Mean	SD
TQ_1	8.230	-0.273	0.914	0.920
EQ_1	0.590	-0.629	0.027	0.123
EQ_2	0.708	-0.475	0.084	0.135
CG	4.000	1.000	2.554	0.985
CG Effectiveness	1.000	0.000	0.489	0.500
Size	5.817	2.480	4.060	0.624
Growth	28.110	-0.954	0.283	1.716
NPM (%)	15.910	-7.683	0.016	1.110
ROA (%)	0.315	-0.668	0.031	0.094
LEV	0.972	0.023	0.494	0.204

4.2.2. EQ and firm value, the role of CG on the relationship between EQ and firm value

The results of the multiple linear regressions to describe the relationship between EQ and firm value (Tobin's Q) are presented in Table 5. Overall, the results revealed that earnings quality is significantly positively related to firm value only EQ as proxied by EQ₁, suggesting the increased firm value with higher EQ, as the respective coefficients at 1.384. A point increase in EQ will increase Tobin's Q by 1.384 points. We confirmed our prediction that firms with higher EQ are valued more highly by the market. Therefore, Hypothesis 1 is confirmed. The study results are consistent with studies by Gaio and Raposo (2011), Latif et al. (2017), Asimakopoulous et al. (2020), and Theophyllus and Oyesola (2018), which concluded that EQ has a positive impact on firm value. This finding is also consistent with studies in Thailand, such as Chumsai na Ayudhya (2007), which found that total accrual has a negative relationship with the market value of equity, which can be explained by low cash flow components or high accounting accruals indicating low EQ, causing the firm value to decrease. However, this result contradicts some findings, especially studies in Thailand, such as the findings of Suaplai (2011), which did not find a statistically significant relationship between EQ and firm value. Higher EQ may reduce agency conflicts and provide better future cash flow for shareholders, which can lower the cost of equity (Watts, 2003). Additionally, Higher EQ may lead shareholders to expect a lower required rate of return, resulting in a lower cost of capital and an increase in firm value.

We also found a significant positive relationship between the CG and firm value at the 1% level in both regression models, with coefficients of 0.108 and 0.116, respectively. A statistically significant negative relationship between LEV and firm value is also found, indicating that increasing financial leverage reduces firm value. Meanwhile, ROA is positively and significantly related to firm value.

As assessed by EQ₂, earnings quality has a negative coefficient and is not statistically significant in relationship to firm value. Therefore, to investigate whether effective CG enhances the positive relationship between EQ and firm value, we use earnings quality as measured only by EQ₁, shown in Table 6.

Table 4. Correlation analysis of research variables.

	TQ ₁	EQ ₁	EQ ₂	CG	SIZE	GROWTH	NPM	ROA	LEV	VIF
TQ ₁	1.00									
EQ ₁	0.210***	1.00								1.05
EQ ₂	0.011	0.495***	1.000							1.25
CG	0.057	-0.01	0.009	1.00						1.12
SIZE	-0.192***	-0.147***	-0.160***	0.325***	1.00					1.46
GROWTH	-0.017	-0.1	-0.143***	-0.029	-0.034	1.00				1.02
NPM	0.006	0.022	0.042	0.043	0.077	0.049	1.00			1.06
ROA	0.199***	-0.09	-0.167***	0.065	0.096	0.028	0.222***	1.00		1.15
LEV	-0.287***	-0.11	-0.092	0.160***	0.457***	0.057	-0.055	-0.204***	1.00	1.39

Notes: TQ is Tobin's Q, EQ is earnings quality, CG is corporate governance score, SIZE is firm size, GROWTH is sales growth, NPM is net profit margin, ROA is return on total assets, and LEV is leverage.

***Indicates significance at the 1% level or better.

Table 5. Relationship between EQ and firm value.

Variables	Dependent variable: Tobin's Q (TQ ₁) Pooled (N=672)
EQ ₁	1.384*** [5.25]
EQ ₂	-0.037 [-0.15]
CG	0.108*** [3.23]
SIZE	-0.185*** [-3.05]
GROWTH	0.006 [0.24]
NPM	-0.044 [-1.27]
ROA	1.795*** [5.03]
LEV	-0.815*** [-4.53]
Constant	1.774*** [8.43]
Observations	672
R-squared	0.1642
Adj. R-squared	0.1553
Durbin-Watson Statistic	1.918

t-statistics in brackets.

***p < 0.01.

Table 6. Relationship between EQ and firm value separated by level of CG practice.

Variables	Dependent variable: Tobin's Q (TQ ₁)	
	Weak CG (N=344)	Strong CG (N=328)
EQ ₁	0.924*** [2.91]	1.932*** [4.43]
CG	-0.088 [-1.00]	0.274*** [2.75]
SIZE	-0.300*** [-3.71]	-0.111 [-1.21]
GROWTH	-0.012 [-0.27]	0.022 [0.79]
NPM	-0.008 [-0.23]	-0.121 [-1.58]
ROA	0.802 [1.60]	2.625*** [5.12]
LEV	-0.627*** [-2.97]	-1.073*** [-3.39]
Constant	2.483*** [8.07]	1.009** [2.50]
Observations	344	328
R-squared	0.1642	0.2089
Adj. R-squared	0.1468	0.1916
Durbin-Watson Statistic	1.814	1.757

Note: Firms with firm-year observations having a CG score by Thai IOD greater than or equal to 3 are classified as having strong CG, whereas those with firm-year observations having a Thai IOD CG score lower than 3 are classified as firms with weak CG.

t-statistics in brackets.

*** $p < 0.01$.

** $p < 0.05$.

Table 6 shows the results of two multiple linear regressions that explain the relationship between EQ₁ and firm value. The baseline model as shown in Equation (4) was implemented once more. In this case, the sample was divided into two groups based on the level of CG practice, consisting of weak CG firms (N=344) and strong CG firms (N=328). Both regressions confirm a significant positive relationship between EQ₁ and firm value. More importantly, the coefficient of EQ₁ for the regression of strong CG firms is higher than that of weak CG firms (1.932 > 0.924), explaining that CG practice reinforces the positive relationship between EQ₁ and firm value. Firms characterized by strong CG tend to experience a stronger positive relationship between EQ₁ and firm value than those with weak CG. We confirm our prediction that effective CG mechanisms enhance the positive relationship between EQ₁ and firm value, so Hypothesis 2 is also confirmed. This finding is consistent with studies by Tulcanaza-Prieto and Lee (2022), who found that the statistically significant negative relationship between earnings management and firm value disappears for firms with strong CG. This finding suggested that strong corporate governance (CG) can reduce the negative impact of earnings management on a company's value.

Additionally, CG practice has a positive relationship with firm value only for companies with good CG practices (coefficient = 0.274). This is also consistent with He et al. (2009), Harymawan and Nowland (2016), and Subanidja et al. (2016), who revealed that managers' opportunistic behaviors decrease when firms adopt CG policies that emphasize transparency and disclosure. Firms with good CG practices improve shareholder confidence, decrease opportunistic earnings management, and enhance EQ. This aligns with the study of Zalata et al. (2019) who found that CEO who difference ethically or risk-averse style of management provide a difference EQ. Companies may prevent agency conflicts by implementing CG, which increases firm value as shown in the study of Elghuweel et al. (2017) that CG mechanisms might influence EQ in developing countries.

Our findings imply that some CG characteristics introduce efficient internal control and lower the opportunities for earnings management. Most importantly, CG mechanisms increase transparency and the quality of disclosure. Our results and implication are absolutely confirmed that CG practices reduce the agency problem in a firm. These implications are confirmed with Ntim and Soobaroyen (2013) that CG and socially responsible corporation practices positively impact on financial performance as well as a female director who has financial background will enhance EQ (Zalata et al., 2022). Consequently, earnings quality increases so that investors may require lower rates of return. A lower cost of capital may lead to an increase in market price and firm value.

4.3. Robustness test

To reinforce our conclusion that EQ is positively and significantly related to firm value and firms with strong CG tend to experience a stronger positive relationship between EQ and firm value than those with weak CG, the second measure of firm value (TQ₂) by Damodaran (1999) is used. The results are shown in Table 7.

Table 7. Relationship between EQ and firm value measured by TQ_2 .

Variables	Dependent Variable: Tobin's Q (TQ_2)		
	Pooled ($N=672$)	Weak CG ($N=344$)	Strong CG ($N=328$)
EQ_1	0.721*** [2.61]	0.266 [0.71]	1.265*** [3.10]
CG	0.135*** [3.85]	-0.080 [-0.77]	0.236** [2.53]
SIZE	-0.319*** [-5.02]	-0.433*** [-4.57]	-0.246*** [-2.87]
GROWTH	0.001 [0.03]	-0.020 [-0.37]	0.016 [0.61]
NPM	-0.045 [-1.25]	-0.020 [-0.45]	-0.077 [-1.08]
ROA	1.855*** [4.96]	0.820 [1.40]	2.652*** [5.53]
LEV	-0.380** [-2.02]	-0.304 [-1.23]	-0.435 [-1.47]
Constant	2.565*** [11.65]	3.349*** [9.28]	1.933*** [5.12]
Observations	672	344	328
R-squared	0.1227	0.1148	0.1709
Adj. R-squared	0.1135	0.0964	0.1527
Durbin-Watson Statistic	1.832	1.834	1.827

Note: Firms with firm-year observations having a CG score by Thai IOD greater than or equal to 3 are classified as having strong CG, whereas those with firm-year observations having a Thai IOD CG score lower than 3 are classified as firms with weak CG.

t-statistics in brackets.

*** $p < 0.01$.

** $p < 0.05$.

Table 7 confirms the findings presented in Tables 5 and 6. EQ_1 has a statistically significant positive relationship with firm value, as the respective coefficients at 0.721 for pooled data. Firms with higher EQ_1 are valued more highly by the market. When comparing Weak and strong CG firms, EQ_1 of strong CG firms was found to have a statistically significant positive relationship with firm value, as the respective coefficient at 1.265. In contrast, no relationship was found between EQ_1 and firm value for weak CG firms. These findings reinforce the importance of the CG mechanism. Strong CG increases the quality of earnings since it shows that the managerial opportunistic behavior of earnings management is monitored effectively.

4.3.1. Endogeneity test

One of the essential assumptions of simple linear regression is $Cov(X_j, U_i) = 0$, meaning that the independent variables are exogenous, and the error terms in the linear regression model are uncorrelated with explanatory variables. However, one of the main challenges in regression analysis with panel data is the variables are endogenous (Davidson & MacKinnon, 2004), which refers to situations where the explanatory variables are correlated with the error term in a model or $Cov(X_j, U_i) \neq 0$. Neglecting to consider endogeneity can reduce the validity of inferences and lead to biased regression coefficient estimates, which result in incorrect conclusions (Bajaj et al., 2018; Wintoki et al., 2012). Therefore, the detection of the endogeneity problem in the model is necessary. The Wald test can be used to assess the endogeneity problem for each variable. If the variable is identified as endogenous, the pooled OLS can't be applied to the model since it provides unreliable and biased findings. The generalized method of moments (GMM) is more appropriate for hypothesis testing. The F-statistic and p-value of the Wald test of all variables are not significant, implying that all variables in the baseline model are exogenous. The endogeneity problem is absent, the pooled OLS method is applicable.

5. Summary and conclusion

The property and construction sector was frequently involved in previous financial crises, which caused earnings management practices and inevitably impacted earning quality. This sector is one of the most significant leading industries, a considerable contribution to the national economy. Given the industry's role in economic growth, earnings quality has become increasingly important. We examine the relationship between earning quality and firm value using a sample of 84 listed property and construction companies for eight years. Earning quality is measured by the accruals component (EQ_1) and total accruals (EQ_2), while Tobin's Q is used as a proxy of firm value. As expected, we find a significantly positive relationship between earnings quality measured by the accruals component (EQ_1) and firm value. A

statistically significant relationship between total accruals (EQ_2) and firm value was not found. We confirm our prediction that firms with higher earnings quality are valued more highly by the market. We further investigated whether firms with different levels of CG practices have different relationships between earnings quality and firm value, we separated our sample into two groups based on CG scores and discovered that firms characterized by strong CG tend to experience a stronger positive relationship between earnings quality and firm value than those with weak CG. Additionally, the results are robust for the different proxies for firm value measurement.

The findings of this study offer essential perspectives to several stakeholders, including executives and investors. Executives should recognize the important role of earning quality in enhancing firm value and, as a result, adjust the financial reporting process to improve earning quality. When analyzing stock for investment decision, investors should concentrate on earning quality, which have a positive impact on firm value. The findings are fulfilled in the literature as this study provides a better understanding of the relationship between earning quality and firm value in both same and different level of CG practice. There are some limitations in this study; therefore, precaution should be applied in interpreting the results. Firstly, the term 'earning quality' in this study may not be a measurement that reflects quality covering all perspectives. The other proxies of earning quality, such as earning persistence, earning predictability, and earning smoothness, should be considered for further studies. Secondly, to determine the role of corporate governance practice, this study uses CG categorical information to identify the weak and strong CG practice firms. To provide more robust results, other criteria for dividing the sample, such as the real CG score (if applicable) or CG index should be considered.

Author contributions

Conceptualization, P.I., K.S.; methodology, P.I., K.S.; validation, P.I., K.S., O.S.; investigation, P.I.; data analysis and robustness test, P.I., O.S.; writing—original draft preparation, P.I.; writing—review and editing, P.I., K.S., O.S.; visualization, P.I., K.S.; supervision, K.S., O.S. All authors have read and agreed to the published version of the manuscript

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Supplemental material

Supplemental data for this article can be accessed online which including all figures, data, and author profile.

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