

# Current

## Vol. 45 No. 128 (2022)

**The Role of Climate Finance in Achieving Cop26 Goals: Evidence from N-11 Countries**  
Mai Pham Quynh ,Mung Ho Van ,Thang Le-Dinh ,Tran T

Faculty of Economics, Academy of Finance, Hanoi, Vietnam,Institute of Economics, Ho Chi Minh Nationa...

[Read More](#)

**Effect of Mutual Fund Fundamentals and Characteristics on Their Performance: An Empirical Study of Thai Equity Mutual Funds**  
Surang Mainkamnurd Hensawang

Faculty of Business Administration, Kasetsart University, Thailand...

[Read More](#)

**Role of Eco-financing in COP26 Goals: Empirical Evidence from ASEAN Countries**  
Ho Phi Dinh ,Ky Nguyen Tran ,Tien Van Cao ,Loc Tie

Phan Thiet University, Vietnam,School of Political Studies, University of Economics Ho Chi Minh City...

[Read More](#)

**Determinants of Financial Performance: A Case from Oil and Gas Companies listed in the Iraq Stock Exchange**  
Zaid Muayad Basheer ,Ahmed Majed Althahabi ,Muqdad

College of Administration and economics, Al-Farahidi University/Iraq,Al-Manara College for Medical S...

[Read More](#)

**Effect of Oil Prices, Inflation Rate, Energy Consumption, Gross Domestic Product on Stock Market Performance of Iraq Stock Exchange**  
Adil Majeed Idan

Scientific Research Supervision and Scientific Evaluation Apparatus / Ministry of Higher Education ...

[Read More](#)

**Financial Inclusion, Foreign Direct Investment, Green Finance and Green Credit Effect on Iraq Manufacturing Companies Sustainable Economic Development: A Case on Static Panel Data**  
Mohammed Kadhim Hawash ,Musaab A. Taha ,Ayad Abas

College of Administration and economics, Al-Farahidi university/Iraq,Department of Accounting/Al-Had...

[Read More](#)

**The Principle of Horizontal Separation in Banking Guarantee Practices in Indonesia**  
Lilawati Ginting ,Tan Kamello ,Muhammad Yamin ,Sai

Fakultas Hukum, Universitas Sumatera Utara, Medan, Indonesia,Fakultas Hukum, Universitas Sumatera Ut...

[Read More](#)

**The Impact of Financial and Economic Indicators on the Financial Performance of Islamic Banks in Qatar**  
Israa Abdulridha Mousa Albusheekh Saleh ,Abduljase

Faculty of Administration and Economics, Department of Banking and Finance, Babylon University-Iraq,...

[Read More](#)

**The Factors Influencing on Information Asymmetry Estimate by Total Trading Volume**  
Pathomchai Kornlert ,Daranee Uachanachit

School of Accountancy, Sripatum University, Thailand,School of accountancy, Sripatum University, Tha...

[Read More](#)

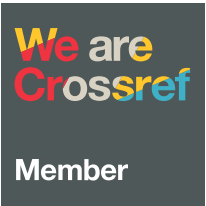
Type & Hit Enter...



### Ready to submit?

Start a new manuscript submission or continue a submission in progress

[Go to submission site](#)



About CUDE.

Cuadernos de Economía – Spanish Journal of Economics and Finance is a

Quick Links

About the Journal

How can we help?

Support & Contact

# The Factors Influencing on Information Asymmetry Estimate by Total Trading Volume

- Pathomchai Kornlert , School of Accountancy, Sripatum University, Thailand
- Daranee Uachanachit , School of accountancy, Sripatum University, Thailand

## Keywords:

Information Asymmetry; Total Trading Volume; Corporate Governance; Financial Reporting Disclosure Quality; Earning Management; Dividend Payment. ,

## Abstract

Numerous factors can contribute to the volume of stock trading being volatile. The unusual stock trading volume before or after the financial statement date indicates information asymmetry in the investment in such securities. The stock price may become volatile due to those who have access to the information earlier or more. This study's goal was to investigate and examine the variables affecting the information asymmetry measured by stock trading volume. This study is quantitative. The financial industry group was excluded from the sample group because of its unique presentation compared to the other industries, which included 301 companies listed on the Stock Exchange of Thailand from a total of 7 industries. Path Analysis was used to gather the data from 2015 to 2019. Good corporate governance and Financial Reporting Disclosure Quality are the factors that affect information asymmetry when it is measured by Trading Volume, and they have a negative direct impact on the information asymmetry. Transparency is influenced by structured corporate governance, meanwhile. The management of dividend payments and earnings directly and positively impacts the trading volume-based measure of information asymmetry.



## About CUDE.

Cuadernos de Economía – Spanish Journal of Economics and Finance is a quarterly journal open to the publication of scientific and reference articles on the large number of topics associated with economic analysis, either from a theoretical or applied perspective.

## ARTÍCULO

# The Factors Influencing on Information Asymmetry Estimate by Total Trading Volume

Pathomchai Kornlert<sup>1</sup>, Daranee Uachanachit<sup>2</sup>

<sup>1</sup> School of accountancy, Sripatum University, Thailand; [Kornlert\\_5@hotmail.com](mailto:Kornlert_5@hotmail.com)

<sup>2</sup> School of accountancy, Sripatum University, Thailand; [Dara.uacha@gmail.com](mailto:Dara.uacha@gmail.com)

\*Correspondence: [Kornlert\\_5@hotmail.com](mailto:Kornlert_5@hotmail.com); ORCID: <https://orcid.org/0000-0003-4071-3112>

### Jel Codes:

M14; N14

### Keywords:

Information  
Asymmetry; Total  
Trading Volume;  
Corporate  
Governance; Financial  
Reporting Disclosure  
Quality; Earning  
Management; Dividend  
Payment.

**Abstract:** Numerous factors can contribute to the volume of stock trading being volatile. The unusual stock trading volume before or after the financial statement date indicates information asymmetry in the investment in such securities. The stock price may become volatile due to those who have access to the information earlier or more. This study's goal was to investigate and examine the variables affecting the information asymmetry measured by stock trading volume. This study is quantitative. The financial industry group was excluded from the sample group because of its unique presentation compared to the other industries, which included 301 companies listed on the Stock Exchange of Thailand from a total of 7 industries. Path Analysis was used to gather the data from 2015 to 2019. Good corporate governance and Financial Reporting Disclosure Quality are the factors that affect information asymmetry when it is measured by Trading Volume, and they have a negative direct impact on the information asymmetry. Transparency is influenced by structured corporate governance, meanwhile. The management of dividend payments and earnings directly and positively impacts the trading volume-based measure of information asymmetry.

## 1. Introduction

According to the stakeholder theory, the relationship between the business and the group of stakeholders is that management or the business must be aware of developing relationships with the business stakeholders to eliminate or resolve potential problems between stakeholders and the entity (Harrison et al., 2010). Because not all stakeholders are directly involved in management, entities must be cautious or moral to forge relationships with those stakeholders that contribute money to the company and impact how the company operates. In addition to business operations, the company should consider the advantages and forging relationships with stakeholders to achieve its goals (Harrison et al., 2010). Building relationships with all stakeholders would assist the company in creating genuine commercial value and prevent moral failure among stakeholders, especially through showcasing the management team's potential on behalf of the entity (Sisodia et al., 2007). All stakeholders, including the owner of the money, the owner of the inputs, the business's clients, investors, and employees, must work together for the firm to realize its goals. A successful firm must consider all stakeholders and be concerned with morality, especially the influence on stakeholders. Because stakeholders seek to utilize information to make decisions, such as to analyze financial risks and the returns of shareholders or creditors, the financial data impact their thoughts and choices. The management or firm will operate more efficiently to accomplish its objectives if it recognizes and considers its obligation to stakeholders. Because comprehending the economic environment alone is insufficient, building relationships with stakeholders is equally crucial. It is about creating wealth and demonstrating responsibility for its stakeholders (Parmar et al., 2010; Supichayangkool, 2010).

We must be aware of the fairness in providing and sharing relevant information with all parties. Real value will be created for the organization, and potential conflicts between all stakeholders will be diminished. Implementing transparency and eliminating information asymmetry is necessary (Freeman, 1984; Parmar et al., 2010). Unusual trading volumes can be used to detect information imbalance. Stakeholders who are aware of and gain from such occurrences will run into information asymmetry if there is a use of information or benefits from information, whether it is the perception of news that influences the decision before or get-to-know information that affects decision-making in depth. New investors or interested parties may have disadvantages in the capital market, including victims of such investments or suffering losses. To make better judgments, stakeholders—especially investors—need to examine the causes of information asymmetry.

## 1. Literature Review

### 1.1 Information Asymmetry

Three specialists, Akerlof (1978), researched and developed the idea of the information economy, which was later referred to as information asymmetry (Seresht et al., 2015). One of the factors that may exacerbate stakeholder conflicts is information. This is because disclosing confidential information to inform users about one another can be both a source of information and a bad signal that could potentially benefit stakeholders. Due to the current state of the market, the seller of securities owns more crucial information than the buyer of securities. Despite the equitable benefits to the stakeholders, it results in gaps and the use of knowledge for personal gain. Conflicts will result from the creation of information asymmetry and the use of stakeholder interests in the entity. The entity's powerful stakeholders will be given knowledge crucial to decision-making or will perceive more facts. They will use their perception of these facts to their advantage for

personal gain, keeping other stakeholders in the dark and denying them the advantages of such events. Depending on who is involved or is interested in the firm, the effects of information perception vary (Li et al., 2017). The outcome of information asymmetry can be seen by the stakeholders from any irregularity that occurs. Many past tests of information asymmetry have been conducted, including the Bid-Ask spread asymmetry, the abnormal return, and the information asymmetry resulting from an aberration in the use of information. However, in this study, we will use Total Trading Volume to measure the occurrence or signal of an abnormal change in Information Asymmetry.

### 1.2 Total Trading Volume

Understanding the market climate is aided by trading volume. A test of trading volume that reveals information asymmetry and security pricing. Information disclosure will impact stock market investors' perceptions, and disclosing new information will determine how shareholders' beliefs and actions differ (Bhattacharya et al., 2012). The amount of stock trading will fluctuate when new information is made available. The information will initially reach the organization's stakeholders. Only after the news is announced will external stakeholders be informed. An announcement is connected to the time frame in which abnormal changes or volumes occur, either before or after the news is released (Chi, 2009). The trading value typically drops when official information is announced, whereas it rises when it is not. The trading volume of the stock will decrease once some information is revealed because individuals who do not know the actual price of the securities will be cautious and postpone trading to avoid the potential costs that could result from information asymmetry issues. This is because investors unaware of the genuine worth of security may mistakenly assume that analysts or stock market experts will have valuable insider knowledge that will give them an advantage. As a result, the trading volume will not match the demand of individuals aware of the true stock price information. The trading volume decreased during the news release period due to the requirement to trade the stocks of investors who lacked knowledge or were unaware of the true price of securities. As a result, the stock trading volume drops during the announcement period (Fabiano, 2008). Due to the degree of information asymmetry, fluctuations in stock trading volume may occur during the unauthorized news release. Suppose individuals aware of the securities' genuine price obtain more beneficial inside information than those unaware of the true price of the securities. In that case, the information asymmetry will be greater. Additionally, those aware of the actual value of security frequently trade before disseminating unofficial decision-making information. The actual stock price is unknown following the disclosure of information crucial to the official decision to gather the data required to decide whether to reinvest after the real stock price has been disclosed (Chi, 2009). Market Volume (How et al., 2005) Investor attitudes suggest that trading volume is unusually inversely correlated with the degree of information asymmetry. For instance, the discrepancy of the investor looking to review their shareholding expectations may be an indication that the asymmetry will cause a difference in the investor's share preferences. On the day the business declares its profits, having inside knowledge before the earnings announcement gives those aware of it an advantage. An information asymmetry that results from data during the earnings announcement could result in a rise or fall in the volume of shares held at the time of the announcement. Bhattacharya et al. (2012) Trading volumes as measured by investor attitudes appear unusually proportional trading volumes of the information asymmetry when measured from Total Trading Volume, which measures the accumulation of trading volume proportions (How et al., 2005). If an investor is in an asymmetrical situation, it will

result in a difference in the investor's share preferences. For instance, a discrepancy in the investor's desire to review their shareholding expectations on the date the business declares its profit may indicate this. For those who know the facts first, having inside knowledge before the earnings announcement gives them an advantage. The information disclosed during the earnings announcement will produce an imbalance that could increase or decrease the shareholding volume at the time of the earnings announcement. If some investors are more informed than the investment seller and buyer, the trading volume may occasionally rise or fall depending on the degree of information asymmetry. The buyer will decrease sales volume if the seller has more accurate information. However, the volume will rise if the buyer receives more accurate information than the seller. If the price is unsatisfactory or the sale results in a loss, it is the reason why sellers do not want to sell their shares. If the buyer receives better information, they profit in the meantime. Trading volumes are therefore determined by the level of information asymmetry, either more or less. It is clear that exposure to potentially harmful information changes the demand for money, unusual investments, or an increase in stock trading activity. This is one of the causes of the data's information asymmetry. The cumulative period is utilized in this study year after year.

$$VOL_{i,t} = \frac{\sum_{t=1} (V_{i,t} \times P_{i,t})}{CPI_{i,t} \times OUTSH_{i,t}}$$

Whereas

$VOL_{i,t}$	=	Trading volume ratio
$V_{i,t}$	=	Total average number of securities traded for t year
$P_{i,t}$	=	Last share price of t year
$CPI_{i,t}$	=	Last closing price of t year
$OUTSH_{i,t}$	=	Total number of shares issued for t year

The Event Period is set for 30 days before the announcement of accounting information (+30, 0, -30).

Changes in trade volume indicate information asymmetry. Suppose there is a significant change in trading volume. In that case, more knowledgeable individuals with more information or who knows a security's true value will benefit from this information asymmetry. This will give them an advantage over those who are less knowledgeable or lack more information. It displays the shift in the percentage of stocks traded compared to all issued securities that experience significant or extraordinary fluctuations (Bhattacharya et al., 2012; Cormier et al., 2013; Lasdi, 2013; Li et al., 2017; Wang, 2017).

### 1.3 Earning Management

The entity must instead use an agency to manage the business because stakeholders do not actively participate in its administration or management. The stakeholder or business owner will give the agency permission to act on his or her behalf. Conflicts between the principal and the agency may arise if the agency cannot carry out the entity's goals.

The agency may be motivated to pursue its interests or those of specific stakeholder groups rather than managing the achievement of business objectives or possibly anticipating significant returns from successful business management, which may become an incentive for wrongdoing. Long-term stock yields and operating results rise in accounting accruals, giving the financial statements an unusual performance. The effect of information asymmetry is the inability of outsiders to detect earnings management, which may be used to hide real returns or performance or manipulate the numbers to suit the desired outcome. The behaviour of profit management might lead to knowledge asymmetry. On the whole, Earning

Management will do poorly. Information Asymmetry, which now exhibits high performance or returns, is a component of profit management. An entity may use Earning Management, or accounting principles, that are advantageous to enhancing its performance and stock prices, even though generally accepted accounting principles require the entity to recognize the transaction on an accrual basis. The source of the hypothesis is Bhattacharya et al. (2012) and Dai et al. (2013). They found that when Information Asymmetry and Earning Management occur, it will reduce the efficiency of investing in the markets and lead to financial market distortions.

**Hypothesis 1: Earning Management factors positively influence the Information Asymmetry of listed companies.**

## 2. Corporate Governance

Corporate governance is significant because it demonstrates management transparency. As a tool to add value and encourage the expansion of the shareholder structure, it can help reassure stakeholders and all related parties due to its auditable quality (Jensen et al., 2019; S. Puangyane, 2018). (Chatchawanchanakit et al., 2019; Nakprasit et al., 2019; Pasopa, 2018; S. Puangyane, Yaowapane, P., Duangsawang, K., Jermisittiparsert, K, 2019; Thunputtadom et al., 2018). Suppose the entity has shareholders who have the ability to govern how the entity is run. In that case, this may give those owners the freedom to direct how the organization is run as they see fit and give them an advantage over other stakeholders who do not. This includes the board composition and its potential impact on corporate data. Strong Form Efficiency in the market will lead to excessive profits if internal stakeholders use inside knowledge that hasn't been shared with other parties.

Therefore, regulatory organizations penalize insiders who misuse such information (Thailand, 2017). Good corporate governance must be able to be verified and inspire confidence. The stakeholders will be impacted if the company's effective corporate governance is ineffective. Because a corporation would decide to abide by sound corporate governance principles following its own policies, the level of corporate governance impacts information asymmetry. Conflicts with the concept will arise if the company's level of excellent corporate governance results in a lack of openness. The Owner Structure and Board Structure that are not conducive to Information Asymmetry must boost monitoring and audit operations by the Companies with High Information Asymmetry (Sougné et al., 2013). Elbadry et al. (2015) examined the relationship between corporate governance and information asymmetry and discovered that because corporate governance lessens agency problems and fosters openness, it enhances information asymmetry. The entity is the source of the hypothesis if it has an Owner Structure devoid of Significant Influence or an Independent Board Structure.

**Hypothesis 2: Corporate Governance factors directly influence the information asymmetry of listed companies.**

Corporate governance is measured by Owner Structure, which reflects the proportion of influential ownership comprised of Family Ownership and Ownership Concentration. Suppose a shareholding percentage affects the business and contributes to the formation of information asymmetry. In that case, it will reflect the influence on corporate governance that may be advantageous to one's own. Direct influence and group joining for specialized or personal gain will result from an ownership structure where shares are held by family members and where there is a high concentration of ownership. Information asymmetry is made more likely by the benefits of faster information being accessible in various planning processes. The following is the proposed hypothesis:



Hypothesis 2.1 The shareholding as Family Ownership positively influences the information asymmetry of listed companies.

Hypothesis 2.2 Ownership Concentration proportion positively influences information asymmetry of listed companies.

As determined by the company's shareholding, the fraction of shares with significant voting power is reflected in the owner structure used to assess corporate governance. Institutional shareholders harm information asymmetry and reflect their effect on sound corporate governance. Institutional Shareholders were determined by [Jamalinesari et al. \(2015\)](#) to impart information transparency. Institutional investors will follow the rules and emphasize openness in public disclosure when presenting information that is already publicly available. Institutional investors are impacted by their investment in these institutions as a means of establishing credibility. The following is the proposed hypothesis:

Hypothesis 2.3 Shareholding proportion of Institutional Shareholders directly influences the Information Asymmetry of listed companies.

The Board Independent and Board Activities ratios, which indicate the firm's transparency and express corporate governance's negative impact on information asymmetry, can be used to measure the board structure reflecting good corporate governance. Because the Board Independent does not receive any other unstated benefits, [Jamalinesari et al. \(2015\)](#) discovered that the Board Independent proportion has the right to reveal information that lessens information asymmetry. [Elbadry et al. \(2015\)](#) discovered that committee meeting activities help communicate reporting outcomes and aid in examining reports on significant agenda items connected to administration and management using information asymmetry. Suppose the meeting outcomes are presented as the disclosure of information pertinent to decision-making. In that case, it will lessen information asymmetry and foster equality in how information pertinent to decision-making is perceived. As a result, the following assertion can be made:

Hypothesis 2.4 Board independence has a direct negative influence on the information asymmetry of listed companies.

Hypothesis 2.5 Board Activities directly negatively influence the Information Asymmetry of listed companies.

### 3. Financial Reporting Disclosure Quality

International law creates a more effective conceptual framework for information disclosure because previous company crises were brought on by the failure of the corporate governance principle and its effects on stakeholders. The Stakeholder Theory takes disclosure quality into account. Building relationships with stakeholders is necessary for an organization to show accountability and produce business value. The executives serve as the entity's representative, according to "Agency Theory." Both "Legitimacy Theory" and "Political Economy Theory" reflect the pertinent knowledge that decision-makers can employ. The concepts of practice and accountability to stakeholders can be reflected through cultivating relationships amongst stakeholders through communication in the annual report and posting such reports online or through the stock exchange ([Thailand, 2017](#)). One instrument that represents the management that stakeholders are interested in is financial reporting [Watts et al. \(1986\)](#). In addition to conventional disclosures, a corporation can report the outcomes of an important topic via several good corporate governance methods using its annual financial reports. For instance, a financial report is a document created by an organization and delivered to a third party. The financial

reporting must comply with the Stock Exchange of Thailand's requirements, which call for the disclosure of significant items or information in the financial statements and various financial statements. There are three concepts for an adequate disclosure: the minimum amount of information required by the regulations, parity in obtaining user information, and disclosing information related to all decisions. These concepts relate to the disclosures in other financial reports and how sufficient the disclosure of information in the financial report is. Users may receive crucial information from disclosures in financial reports. According to [Purwanti et al. \(2013\)](#), the quality of disclosure was significantly detrimental to Information Asymmetry. It suggests that increased transparency may help to lessen information asymmetry. [Brandenburg et al. \(2013\)](#) discovered that while improved financial report quality reduces information asymmetry, robust company governance is still necessary. As a result, the following assertion can be made: Hypothesis 3: Financial reporting-related variables Information asymmetry of listed firms is directly impacted negatively by disclosure quality.

#### 3.1 Dividend Payment

A company's ability to pay dividends may measure its wealth in producing returns for its owners. However, it also poses issues for the agency because business executives could have complex motives for increasing shareholder profit. The dividend payment may also impact the business's cash flow. Because the executives' actions may impact the resulting transparency, the dividend payment will cause capital to flow out of the company. In addition to increased stock prices, investors want a return on their investment. They continue to want dividend-paying returns. Changes in earnings per share can typically sway investors. There will be larger returns or earnings per share. The dividend policy expressed by the dividend payout principle will increase information asymmetry if the company generates higher profits. The organization itself makes the decision. The advantage of knowing the true value and actual performance will lead to profit sharing for stakeholders of the firm. The dividend payment policy reflects knowledge asymmetry ([Okpara, 2010](#)).

Furthermore, suppose internal management was aware of the dividend distribution. In that case, they might have exploited that information for their gain to decide how to hold or invest in shares before external stakeholders. If business executives use insider information to help them realize the dividend payout, [Sahar et al. \(2014\)](#) discovered the same association. Management, who has a stake in the company, will be able to use the knowledge to their advantage and establish their shareholding policy to get a competitive edge over other stakeholders. As a result, the following assertion can be made:

The information asymmetry of public businesses is directly positively impacted by dividend payment considerations, according to hypothesis 4.

### 4. Methods & Methodology

The researchers used the Stock Exchange of Thailand's Secondary Data database and the SETSMART database, which used study data from 2015 to 2019 to collect data based on variables of 301 enterprises to compile the published data.

The companies registered on the stock exchange are the population examined for research on variables influencing data asymmetry from [Table 1](#). Data from the previous six years, from 2014 to 2019, were used. Every year, all businesses must have full information based on the variables, i.e., 1) full information during the study year.

Table 1. Shows the number of businesses in each Industry Group of companies listed on the stock exchange by the number of years as an example for analysis

Industry Group	2015 - 2019	Total
1. Agro & Food Industry	28	140
2. Energy & Utilities	21	105
3. Technology	30	150
4. Services	69	345
5. Industrials	57	285
6. Consumer Products	28	140
7. Property & Construction	68	340
<b>Total</b>	<b>301</b>	<b>1,505</b>

There may be issues in comparison due to errors in data generation and different accounting periods for companies with different listing periods; for example, a company listed on a new stock exchange does not appear in financial statements, listed companies that are in the process of revising the financial statements or not submitting the financial statements, and so on. If there is information, it is insufficient to be used to find variables that need to be studied. Due to the inconsistency of the data period, it may cause issues in comparison. 2) They must not be associated with the financial sector, as their accounting procedures and financial statement presentation differ from those of other businesses in the sector. Due to the disparities in business practices and public disclosure of listed businesses on the Stock Exchange of Thailand, the combined study of these groups may result in inconsistent and unexpected research findings. The total sample size is 1,505 companies, with 301 companies every year meeting the criteria and being included in the sample group.

The researchers examined the hypotheses using the structural equation model and the structural relation model to acquire data compatible with the empirical data in the hypothesis testing for the analysis to provide an answer to the research question. To discover the model that is the most consistent, there are steps to alter the model. The equation model needs to have a negligible p-value of at least 0.05. This demonstrates how the model, and the empirical data are in agreement. Error in model harmonization Chi-square/d.f. must not be greater than 2, suggesting a favorable state. Harmony can be shown in Root Mean Square Error of Approximation (RMSE) values closer to 0. The model is symmetrical if the Goodness of Fit Index (GFI) is more than or equal to 0.95 and nearer 1. It is necessary to make model adjustments until the model is coherent and in harmony with the empirical facts. The hypothesis is tested using thorough test procedures. Following are some possible considerations for such harmony (Hair et al., 1998): 1. If the hypotheses are correct and there is a true zero, the Chi-Square test is performed to determine the harmony of the function. If there is a significant discrepancy between the model and the empirical data, the qui-square value is significant.

2. The model must be compatible with the empirical data if the relative correlation Chi-Square ( $\chi^2/\text{df}$ ) is less than 2.00.

3. To test whether the model is consistent and correlated, the Comparative Fit Index (CFI) is utilized. The CFI value must be larger than 0.90.

4. The Goodness of Fit Index (GFI), which measures the degree of variance, and the Adjusted Goodness of Fit Index (AGFI), which also measures variance, will be used to calculate the harmony using the Absolute Fit Index. The covariance can be explained by the model with the degrees of freedom changed. The GFI has to be there. The acceptable GFI and AGFI should be > 0.90, and the AGFI has a range of 0 to 1. 5. Root Mean Square Error of Approximation (RMSEA) is a statistic used to evaluate the efficacy of a hypothesis test. The most harmonic RMSEA value is less than 0.05, while an acceptable value is from 0.05 to 0.08. It shows that the model and the fictitious data are quite compatible. A value of 0.08 to 0.10 suggests that the model might appear coherent and harmonic even with sparse

data. Any value above 0.10 signifies that the model is both chaotic and harmonic. 6. The Standardized Root Mean Square Residual (SRMR), a common tolerance measurement, conformity and harmony in tolerance forms. As a sign that the model is accurate and harmonious in the hypothesis testing, the Standardized Residual and the error value divided by the Estimated Standard Error estimate must be less than 0.05. When the research model was compared to empirical data, it did not seem coherent and consistent. To bring the conclusions of the hypothesis testing and to bring the results of the hypothesis testing to qualitative research to confirm the hypothesis testing and to develop a model to assess the information asymmetry, the researcher adjusts and re-adjusts the model until it appears consistent and harmonious.

These were created as variables following quantitative research to test the research hypothesis. Total Trading Volume was used to calculate the information asymmetry variable by gathering information on stock trading activity 30 days before and after the release of accounting data.

The variable values that influence information asymmetry are as follows:

1. Earning management applied Yoon et al. (2006) calculated from  $\text{DAC}_{i,t} = [\text{TA}_{i,t}/\text{REV}_{i,t}] - [\alpha_1(\Delta\text{REV}_{i,t} - \Delta\text{REC}_{i,t}/\text{REV}_{i,t}) + \alpha_2(\Delta\text{EXP}_{i,t} - \Delta\text{PAY}_{i,t}/\text{REV}_{i,t}) + \alpha_3(\text{DEP}_{i,t} + \text{PEN}_{i,t}/\text{REV}_{i,t}) + \varepsilon_{i,t}]$ .  $\text{DAC}_{i,t}$  represents Discretionary Accruals of Company I in t year.  $\text{TA}_t$  represents the total Accruals occurring of Company I in t year.  $\text{REV}$  represents the Total Revenue of Company I in t year.  $\Delta\text{REV}_{i,t}$  = Change in Total Revenue of Company I in t year.  $\Delta\text{REC}_{i,t}$  represents Change in Account Receivable of Company I in t year.  $\Delta\text{EXP}_{i,t}$  represents Change in Total Cost and Expenses of Company I in t year.  $\Delta\text{PAY}_{i,t}$  represents the change in accounts Payable of Company I in t year.  $\text{DEP}_{i,t}$  represents Depreciation Expenses of Company I in t year.  $\text{PEN}_{i,t}$  represents retirement benefits expense of Company I in t year.  $\varepsilon_{i,t}$  represents error.

2. Financial Reporting Disclosure Quality uses a Disclosure index based on the principles of Petersen et al. (2006)

3. Dividend Payment uses Dividend Yield = Annual Dividends Paid per Share / Price per Share

4. Corporate Governance measured from Owner Structure including Ownership Concentration = Top 5 Major Shareholdings of the Business, Family Ownership = Family shareholding and Institutional Shareholders = shareholding proportion of Institutional Shareholders and Board Structure including Board Independent = proportion of board independence and board Activities = proportion of the number of meetings of the Board of Directors.

Table 2 shows the results of considering the harmonization index of the factors that influence and affect the information asymmetry of listed companies in the Stock Exchange of Thailand; overall, it was found that the model is consistent and has harmonious values with the empirical data. By showing the harmonious index values, all 6 index values that are considered and accepted are index value  $\chi^2 = 5.3400$ , df value = 6, p-value = 0.50138, CFI = 1.0000, GFI = 1.0000, AGFI = 0.9999, RMSEA =

The research results of THE FACTORS INFLUENCING ON INFORMATION ASYMMETRY ESTIMATE BY TOTAL TRADING VOLUME can be concluded as follows:

## 5. Research Results

Table 2: shows the analysis of the conformity index and harmonious model of The Factors Influencing on Information Asymmetry Estimate by The Total Trading Volume of companies listed on the Stock Exchange of Thailand

Index value	Criteria	Results of harmonization analysis	
		Statistical value	Results of consideration
$\chi^2 / df$	< 2.0000	0.8900	Passed
CFI	$\geq 0.9000$	1.0000	Passed
GFI	$\geq 0.9000$	1.0000	Passed
AGFI	$\geq 0.9000$	0.9999	Passed
RMSEA	< 0.0500	0.0000	Passed
SRMR	< 0.0500	0.0095	Passed

1. The relative chi-square ( $\chi^2 / df$ ) is 0.8900, indicating that the model is consistent and harmonious with empirical data since the relative chi-square value does not exceed 2.0000.

2. The Comparative Fit Index (CFI) value of 1.0000 indicates that the model is consistent and relatively harmonious because the value is greater than 0.9000 or more.

3. The Absolute Fit Index considers two indices; the Goodness of Fit Index (GFI) equals 1.0000 and the Adjusted Goodness Index of Fit Index (AGFI), which equals 0.9999. Thus, it can be concluded that the resulting model was consistent and

harmonious with the empirical data, indicating that the GFI index and the AGFI index were greater than 0.9000.

4. The root Mean Square Error of Approximation (RMSEA) is 0.0000, indicating that the model shown is consistent and harmonious with the empirical data where the RMSEA index is less than 0.0500.

5. The Standardized Root Mean Square Residual (SRMR) is 0.0095, indicating that the shown model is consistent and harmonious with the empirical data because it shows values less than 0.0500.

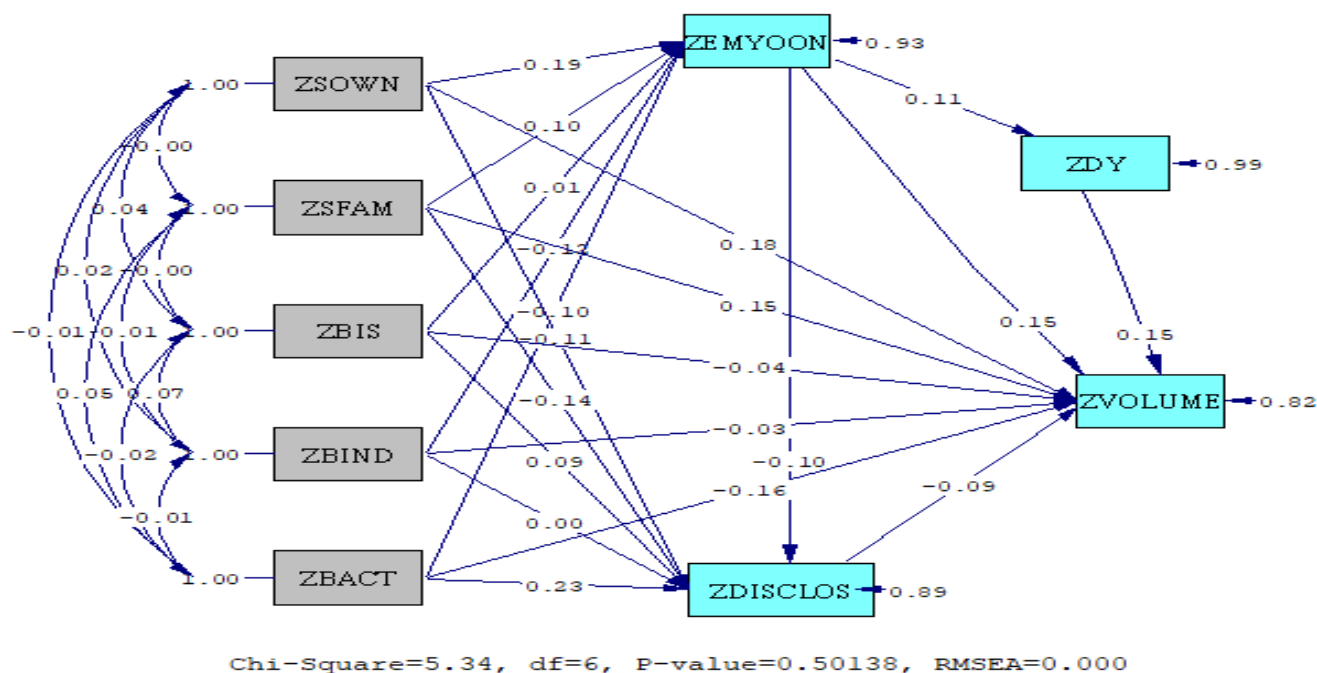


Figure 1. The Empirical Data was shown with The Theoretical Model

Table 3. Displays the Element of The Observable Variable Influencing Information Asymmetry Estimate by Total Trading Volume

Factor is influencing INASYM ( $R^2 = 0.27$ )			
Factor	Beta	SE	T-value
ZDISCLOSU	-0.09	0.02	-3.69**
ZDY	0.15	0.02	6.37**
ZEMYOON	0.15	0.02	6.16**
ZSOWN	0.18	0.02	7.62**
ZSFAM	0.15	0.02	6.11**
ZBIS	-0.04	0.02	-1.89
ZBIND	-0.03	0.02	-1.18
ZBACT	-0.16	0.02	-6.49**



ZDISCLOSU is Financial Reporting Disclosure Quality, ZDY is Dividend Payment, ZEMYOON is Earning Management, ZSOWN is Ownership Concentration, ZSFAM is Family Ownership, ZBIS is Institutional Shareholders, ZBIND is board independent, and ZBACT is Board Activities From Table 3, the results showed that the ZDISCLOSU factor had a direct negative influence on information asymmetry with an influence value of -0.09. The factors ZDY and ZEMYOON had a direct positive influence on information asymmetry with an influence value

of 0.15. and 0.15. Meanwhile, the Corporate Governance variables, separated into the owner structure and board structure variables, revealed that the ZBACT variable negatively influenced information asymmetry with -0.16. The variables ZSOWN and ZSFAM had a direct positive influence. The influence of information asymmetry was 0.18 and 0.15, respectively, but no direct influence of ZBIS and ZBIND was found to be statistically significant.

Table 4. shows the analysis of the factors with direct influence, indirect influence and the overall influence on the information asymmetry measured by the trading volume of companies listed on the Stock Exchange of Thailand

Contributing factors	EM			DISCLOSU			DIVIDEND			INASYM		
Factors	TE	IE	DE	TE	IE	DE	TE	IE	DE	TE	IE	DE
DIVIDEND	-	-	-	-	-	-	-	-	-	0.15	0.00	0.15
DISCLOSU	-	-	-	-	-	-	-	-	-	-0.09	0.00	-0.09
EM	-	-	-	-0.10	-	-0.10	0.11	-	0.11	0.20	0.05	0.15
ZSOWN	0.19	-	0.19	-0.13	-0.02	-0.11	0.02	0.02	-	0.23	0.05	0.18
ZSFAM	0.10	-	0.10	-0.15	-0.01	-0.14	0.01	0.01	-	0.20	0.05	0.15
ZBIS	0.01	-	0.01	0.09	0.00	0.09	0.00	0.00	-	-0.06	-0.02	-0.04
ZBIND	-0.12	-	-0.12	0.01	0.01	0.00	-0.01	-0.01	-	-0.05	-0.02	-0.03
ZBACT	-0.10	-	-0.10	0.24	0.01	0.23	-0.01	-0.01	-	-0.21	-0.05	-0.16
R <sup>2</sup>	0.17			0.22			0.09			0.27		

Table 4's findings revealed the variables affecting earning management (EM). It was discovered that the shareholding in Family Ownership (ZSFAM) characteristics and the Corporate Governance factor variable according to the Owner structure as evaluated by the Ownership Concentration (ZSOWN) had a favorable direct influence. Additionally, the Earning Management (EM) component showed statistically significant positive direct influence values of 0.19 and 0.10, respectively. With a statistically significant negative direct influence of -0.12 and -0.10, respectively, and a prediction coefficient of 17%, the corporate governance factor variable according to the ownership structure as measured by the shareholding ratio of institutional shareholders (ZBIS), corporate governance according to the board structure as measured by the proportion of board independent (ZBIND), and board activities (ZBACT). Earning Management (EM), Corporate Governance factor variables according to the Owner structure as measured by Ownership Concentration (ZSOWN), shareholding in the Family Ownership style (ZSFAM), and other factors were found to have a direct negative influence on the Financial Reporting Disclosure Quality factor (DISCLOSU), with direct negative influences of -0.10, -0.11 and -0.14 statistically significant. The institutional investor shares (ZBIS) measure of the shareholder structure and the board structure and board activities (ZBACT) measure of corporate governance directly influenced the Good Corporate Governance Factors variable. The Financial Reporting Disclosure Quality (DISCLOSU) factor also had a statistically significant positive direct influence of 0.09 and 0.23, respectively. According to the test results of factors that affect and influence financial reporting disclosure quality (DISCLOSU), corporate governance factor variables according to the owner structure measured by ownership concentration (ZSOWN) and family ownership (ZSFAM) had a negative indirect influence on the DISCLOSU factor. They had a negative indirect influence of -0.02 and -0.01 with statistical significance, respectively. With a significant positive indirect influence of 0.01 and 0.01, respectively, and a prediction coefficient of 22%, Board Independent (ZBIND) and Corporate Governance, as measured by Board Structure measured Board Activities (ZBACT), had a positive indirect influence on the Financial Reporting Disclosure Quality (DISCLOSU) factor. The Earning Management (EM) variable had a direct positive influence, and the Dividend Payment factor (DIVIDEND) had a direct positive influence of 0.11 with statistical significance, according to the

test of factors that influence and affect dividend payments (DIVIDEND). The Ownership Concentration (ZSOWN) and Family Ownership (ZSFAM) shareholding ratios used to measure the Corporate Governance factor variable according to Owner structure showed a positive indirect influence. The Dividend Payment (DIVIDEND) demonstrated a statistically significant indirect positive benefit of 0.02 and 0.01, respectively. The proportion of Board Independent (ZBIND) and Board Activities (ZBACT) evaluated by the Board Structure indirectly influenced the Corporate Governance factor variable. With statistical significance and a prediction coefficient of 9%, the dividend payment component (DIVIDEND) had a negative indirect influence of -0.01 and -0.01 on the outcome. The findings of the testing of the influencing factors and information asymmetry (INASYM) revealed that the factors of Earning Management (EM), Dividend Payment (DIVIDEND), Corporate Governance factor according to the Owner structure measured by Ownership Concentration (ZSOWN) and the Ownership Concentration (ZSOWN) ratio, and holding shares as Family Ownership (ZSFAM) had a direct positive influence, with direct positive influences of 0.15, 0.15, 0.18 and 0.25 respectively. Information asymmetry was directly impacted negatively by the Corporate Governance factor varies according to the Owner structure as measured by the shareholding percentage of Institutional Shareholders (ZBIS), the Board Structure as measured by the Board Independent (ZBIND), the Board Activities (ZBACT), and the Financial Reporting Disclosure Quality (DISCLOSU) ratios (INASYM). The statistically significant negative direct values were, in order, -0.04, -0.03, -0.16 and -0.09 correspondingly. Information asymmetry was found to be positively and indirectly influenced by the Earning Management (EM) Corporate Governance variable following the Owner structure as determined by Ownership Concentration (ZSOWN) and Family Ownership (ZSFAM) shareholdings (INASYM). The statistically significant results for the favorable indirect influence were 0.05, 0.05, and 0.05, respectively. Corporate Governance factor variable based on Owner structure as determined by the percentage of institutional shareholders that own shares (ZBIS) Information asymmetry (INASYM) was negatively indirectly influenced by corporate governance, as determined by the composition of the board (ZBIND and ZBACT), with negative indirect effects of -0.02, -0.02 and -0.05 being statistically significant. The probability of success was 27%.

## 6. Discussions & Conclusion

According to the results of the hypothesis testing of the factors influencing information asymmetry as measured by total trading volume, the Corporate Governance factor for businesses with boards of directors and board activities was able to reduce information asymmetry because it was a function of the activity that caused meeting news to be reported and assisted in monitoring the accomplishment of the business's goals (Sougné et al., 2013). A corporation's competitiveness and information asymmetry will benefit directly from the corporate governance aspects of an entity with an ownership structure that includes owner concentration and family ownership. Owner concentration will enable significant stakeholders to operate as the company's voice in management. It may lead to decisions that support the management monopoly, leading to information asymmetry. A company with a large percentage of family ownership develops a power that impacts the management structure. Information asymmetry may exist if an entity has executives or a group of directors with ownership stakes (Elbadry et al., 2015). For companies with an Owner Structure that has a shareholding proportion of Institutional Shareholders, no association between information asymmetry and shareholding was discovered. Such investors still require authorities to act in their best interests. They have no authority over them to practice good company governance (Jamalinesari et al., 2015). Board independent does not directly participate in the management and does not impact information asymmetry; rather, this group supports the entity's policies and strategies (Elbadry et al., 2015).

Accounting Reporting Information asymmetry is directly impacted negatively by the quality of disclosure, which increases stakeholders' confidence and transparency. This is so that accurate information can support decision-making (Fu et al., 2012; Gajewski et al., 2015). Because earning management distorts the knowledge or facts of figures used in management's financial reporting, it has a favorable direct impact on information asymmetry. Discretionary accruals cause stakeholders to be oblivious to facts that occur and impact decision-making by moving financial reporting numbers in the intended direction (Bhattacharya et al., 2012; Dai et al., 2013). Dividend payments directly and positively impact information asymmetry and wealth-making from equity investments. Information asymmetry is created by the dividend payout when the stakeholders are unaware of the actual performance or specific return actions. Additionally, the dividend payout lowers the money needed for investment activity (Sahar et al., 2014; Ziabari, 2014). It is a useful indicator to identify information asymmetry if quantified by information asymmetry based on changes in Total Trading Volume.

## 7. Recommendations for Future Research

Only companies listed on the Stock Exchange of Thailand between 2015 and 2019 were used as samples in this study. The research subject may repeat the study during the subsequent study. This is so that the researchers can look for additional factors affecting and influencing information asymmetry. They might have discovered different findings if they had studied at a different time or under more unusual circumstances. In the future, researchers may select a variety of circumstances in which a particular event takes place or a statistical tool created in the future. For those interested in the following research, it might impact the repeatability of this study and others in the future.

## References

Akerlof, G. A. (1978). The market for "lemons": Quality uncertainty and the market mechanism. In *Uncertainty in*

- economics* (Vol. 84, pp. 235-251): Elsevier, 235-251. doi: <https://doi.org/10.1016/B978-0-12-214850-7.50022-X>.
- Bhattacharya, N., Ecker, F., Olsson, P. M., & Schipper, K. (2012). Direct and mediated associations among earnings quality, information asymmetry, and the cost of equity. *The Accounting Review*, 87(2), 449-482. doi: <https://doi.org/10.2308/accr-10200>
- Brandenburg, B., Koudstaal, W., Goudsmit, J., et al. (2013). Mechanisms of hemagglutinin targeted influenza virus neutralization. *PLOS ONE*, 8(12), e80034. doi: <https://doi.org/10.1371/journal.pone.0080034>
- Chatchawanchanchanakij, P., Arpornpisal, C., & Jermisittiparsert, K. (2019). The role of corporate governance in creating a capable supply chain: A case of Indonesian Tin industry. *International Journal of Supply Chain Management*, 8(3), 854-864. Retrieved from <https://www.researchgate.net/profile/Kittisak-Jermisittiparsert/publication/334001423>
- Chi, W. (2009). *Trading volume and information asymmetry surrounding scheduled and unscheduled announcements: a thesis submitted in partial fulfillment of the requirements for the degree of Master of Finance, Massey University, February 2009*. Massey University, Retrieved from <http://hdl.handle.net/10179/1032>
- Cormier, D., Houle, S., & Ledoux, M.-J. (2013). The incidence of earnings management on information asymmetry in an uncertain environment: Some Canadian evidence. *Journal of International Accounting, Auditing and Taxation*, 22(1), 26-38. doi: <https://doi.org/10.1016/j.intaccudtax.2013.02.002>
- Dai, Y., Kong, D., & Wang, L. (2013). Information asymmetry, mutual funds and earnings management: Evidence from China. *China Journal of Accounting Research*, 6(3), 187-209. doi: <https://doi.org/10.1016/j.cjar.2013.03.001>
- Elbadry, A., Gounopoulos, D., & Skinner, F. (2015). Governance quality and information asymmetry. *Financial Markets, Institutions & Instruments*, 24(2-3), 127-157. doi: <https://doi.org/10.1111/fmii.12026>
- Fabiano, J. (2008). Asymmetric information and firms trading volume before a scheduled announcement: The Swiss evidence. Available at SSRN 1126688, 1-40. doi: <https://dx.doi.org/10.2139/ssrn.1126688>
- Freeman, R. E. (1984). *Strategic Management: A Stakeholder Approach*, Boston, Pitman.
- Lukas, Janina (2017): *Ethik als Standard in der Beschaffung. Werte und Normen als Gestaltungsausgangspunkt von Nicht-Regierungs-Organisationen*. Wiesbaden: Springer Gabler, 43. Retrieved from <https://www.worldcat.org/title/strategic-management-a-stakeholder-approach/oclc/9685996>
- Fu, R., Kraft, A., & Zhang, H. (2012). Financial reporting frequency, information asymmetry, and the cost of equity. *Journal of Accounting and Economics*, 54(2-3), 132-149. doi: <https://doi.org/10.1016/j.jacceco.2012.07.003>
- Gajewski, J.-F., & Li, L. (2015). Can internet-based disclosure reduce information asymmetry? *Advances in Accounting*, 31(1), 115-124. doi: <https://doi.org/10.1016/j.adiaac.2015.03.013>
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (1998). *Multivariate data analysis*. Upper Saddle River. *Multivariate Data Analysis (5th ed)* Upper Saddle River, 5(3), 207-219. Retrieved from <https://scirp.org/reference/referencespapers.aspx?referenceid=2123550>
- Harrison, J. S., Bosse, D. A., & Phillips, R. A. (2010). Managing for stakeholders, stakeholder utility functions, and competitive advantage. *Strategic Management Journal*, 31(1), 58-74. doi: <https://doi.org/10.1002/smj.801>
- How, J. C., Verhoeven, P., & Huang, C. X. (2005). Information asymmetry surrounding earnings and dividend

- announcements: An intra-day analysis. *Mathematics and Computers in Simulation*, 68(5-6), 463-473. doi: <https://doi.org/10.1016/j.matcom.2005.02.015>
- Jamalinesari, S., & Soheili, H. (2015). The Relationship between Information Asymmetry and Mechanisms of Corporate Governance of Companies in Tehran Stock Exchange. *Procedia-Social and Behavioral Sciences*, 205, 505-509. doi: <https://doi.org/10.1016/j.sbspro.2015.09.056>
- Jensen, M. C., & Meckling, W. H. (2019). Theory of the firm: Managerial behavior, agency costs and ownership structure. In *Corporate Governance* (Vol. 3, pp. 77-132): Gower, 77-132. Retrieved from <https://www.taylorfrancis.com/chapters/edit/10.4324/9781315191157-9>.
- Lasdi, L. (2013). The effect of information asymmetry on earnings management through accrual and real activities during global financial crisis. *Journal of Economics, Business, & Accountancy Ventura*, 16(2), 325-338. doi: <http://dx.doi.org/10.14414/jebav.v16i2.189>
- Li, T., & Zaiats, N. (2017). Information environment and earnings management of dual class firms around the world. *Journal of Banking & Finance*, 74, 1-23. doi: <https://doi.org/10.1016/j.jbankfin.2016.09.009>
- Nakpravit, C., & Rattanayong, P. (2019). Earnings Quality, Corporate Governance Structure and Corporate Social Performance of Manufacturing Companies Listed on the Stock Exchange of Thailand. *Corporate Governance Structure and Corporate Social Performance of Manufacturing Companies Listed on the Stock Exchange of Thailand (July 1, 2019)*. *PSAKU International Journal of Interdisciplinary Research*, 8(2), 14. doi: <https://dx.doi.org/10.2139/ssrn.3547043>
- Okpara, G. C. (2010). Asymmetric information and dividend policy in emerging markets: empirical evidence from Nigeria. *International Journal of Economics and Finance*, 2(4), 212-220. Retrieved from [https://d1wqtxts1xzle7.cloudfront.net/75539551/Asymmetric\\_Information\\_and\\_Dividend\\_Poli20211202-1126](https://d1wqtxts1xzle7.cloudfront.net/75539551/Asymmetric_Information_and_Dividend_Poli20211202-1126)
- Parmar, B. L., Freeman, R. E., Harrison, J. S., Wicks, A. C., Purnell, L., & De Colle, S. (2010). Stakeholder theory: The state of the art. *Academy of Management Annals*, 4(1), 403-445. Retrieved from <https://books.google.ae/books?hl=en&lr=&id=xF8-WN1QIIMC&oi=fnd&pg=PR7&dq=Parmar>
- Pasopa, P. (2018). The Relationship between Corporate Governance and Performance Measures of Companies Listed in the Stock Exchange of Thailand's Set100. *Asian Administration & Management Review*, 1(1), 10. Retrieved from <https://ssrn.com/abstract=3185248>
- Petersen, C., & Plenborg, T. (2006). Voluntary disclosure and information asymmetry in Denmark. *Journal of International Accounting, Auditing and Taxation*, 15(2), 127-149. doi: <https://doi.org/10.1016/j.intaccaudtax.2006.08.004>
- Puangyanee, S. (2018). The Influence of Board Independence on Ability to Operate and Capital Structure through Corporate Governance Disclosure of Companies Listed on the Stock Exchange of Thailand. *PSAKU International Journal of Interdisciplinary Research*, 7(1), 9. doi: <https://dx.doi.org/10.2139/ssrn.3226554>
- Puangyanee, S., Yaowapanee, P., Duangsawang, K., Jemsittiparsert, K. (2019). The Influence of the Shareholding Structure on Economic Performance through Good Corporate Governance of Listed Companies in the Stock Exchange of Thailand. *International Journal of Innovation, Creativity and Change*, 7(8), 116-133.
- Purwanti, M., & Kurniawan, A. (2013). The effect of earnings management and disclosure on information asymmetry. *International Journal of Scientific & Technology Research*, 2(8), 98-107. Retrieved from <http://www.ijstr.org/final-print/aug2013/The-Effect-Of-Earnings-Management-And-Disclosure-On-Information-Asymmetry.pdf>
- Sahar, M. E., & Mayahi, N. (2014). Asymmetric Information And Dividend Payout Policy: Evidence From Iran Stock Exchange. *Indian Journal of Fundamental and Applied*, 4(S1), 30-35. Retrieved from <http://www.cibtech.org/sp.ed/jls/2014/01/jls.htm>
- Seresht, D. J., Eivani, F., & Mohammadi, S. (2015). A Study on the Relationship between Information Asymmetry and Earnings Management in Companies Listed in Tehran Stock Exchange. *IPASJ International Journal of Management*, 3(2), 31-38. Retrieved from <https://www.semanticscholar.org/paper/A-study-on-the-Relationship-between-Information-and-Seresht-Eivani>
- Sisodia, A., Bayer, M., Townley-Smith, P., et al. (2007). *Advanced helmet mounted display (AHMD)*. Paper presented at the Head-and Helmet-Mounted Displays XII: Design and Applications: SPIE 6557, 165-175. doi: <https://doi.org/10.1117/12.723765>
- Sougné, D., Laouti, M., & Ajina, A. (2013). Do board characteristics affect information asymmetry? *International Journal of Academic Research in Business and Social Sciences*, 3(12), 660-675. Retrieved from <https://hdl.handle.net/2268/163375>
- Supichayangkool, S. (2010). "Stakeholder Theory: The State of The Art." *Journal of Graduate School of Commerce-Burapha Review*, 4(2), 129-132.
- Thailand, T. S. E. o. (2017). Corporate Governance Code for Listed Companies The Securities and Exchange Commission, Thailand. 3-64.
- Thunputtadom, P., Pongsupatt, T., Srijunpetch, S., Sincharoonsak, T., Chuaychoo, M., & Bosakoranut, S. (2018). The impact of corporate governance on operational performance of listed companies in the Stock Exchange of Thailand. *Asian Administration & Management Review*, 1(1), 10. doi: <https://dx.doi.org/10.2139/ssrn.3185385>
- Wang, L.-H. (2017). Accounting quality and information asymmetry of foreign direct investment firms. *Research in International Business and Finance*, 42, 950-958. doi: <https://doi.org/10.1016/j.ribaf.2017.07.029>
- Watts, R. L., & Zimmerman, J. L. (1986). Positive accounting theory. *Prentice-Hall Inc*, 431-436. Retrieved from <https://ssrn.com/abstract=928677>
- Yoon, S. S., Miller, G., & Jiraporn, P. (2006). Earnings management vehicles for Korean firms. *Journal of International Financial Management & Accounting*, 17(2), 85-109. doi: <https://doi.org/10.1111/j.1467-646X.2006.00122.x>
- Ziabari, A. Z., Samadi, M., Meshki, M. Masouleh, H. P. (2014). "Study of the Relationship between Information Asymmetry and Cash Dividend Policy." *Management and Administrative Sciences Review*, 3(4), 615-623.