Determinants of, and Stock Market Reactions to, Financial Reporting Lag in Indonesia

Asep Tatip Nugraha

Master of Management (University of Tarumanagara)

Victoria University Business School, Victoria University

Melbourne, Australia

Submitted in fulfillment of the requirement of the degree of

Doctor of Business Administration

22 December 2021

Abstract

Financial reporting timeliness is one of the characteristics that enhance and improve the quality of useful financial information, which can affect stock prices. Given the importance of financial reporting timeliness, this research extends prior studies regarding determinants of, and stock market reactions to, financial reporting lag. However, the impact of tax-related variables (related party transactions, capital structure and tax audits) on financial reporting lag was analysed in this as well as other determinants (audit report lag, firm size, profitability, and audit opinion). The related party transactions and a high level of debt on capital structure are notoriously popular for achieving tax benefits and possibly considered as bad news. Investors could consider that gaining tax benefits or minimising tax payment as a negative behaviour in business. This study uses a stratified random sampling method to obtain the data from various industry sectors on the Indonesia Stock Exchange (IDX) from 2014 to 2017. The sample consists of 468 firm-year observations. Two-stages least squares regression method, the OLS model, and dynamic GMM model were used to analyse the relationship between stock market reactions and financial reporting lag. In addition, the least square model and Wald test were also used to analyse the asymmetric stock market reactions between timely and late financial reporting lags.

Using LASSO Regression, the findings show that leverage, related party transactions, and tax audits are found to have no relationship with financial reporting lag. These findings indicate that the tax-related variables do not affect financial reporting timeliness. This means that the IDX firms do not consider related party transactions, high level of loan on capital structure, and tax audit results as bad news. Also, profitability and audit opinion have no relationship with financial reporting lag. Meanwhile, audit report lag and firm size are the variables, which are found to show a relationship with financial reporting lag. Moreover, the Wald tests on least square model reveal some evidence about asymmetric stock market reactions between timely and late financial reporting lag. Also, the data analysis using two-stage least-square model, the OLS model, and the dynamic GMM shows significantly negative relationship between predicted financial reporting lag and stock market reactions. However, the dynamic GMM model presents better results than those from the two-stage least square model and the OLS model due to the endogeneity problem on panel data used in this study. The results are consistent with the semi-strong form of the efficient market hypothesis. It indicates that the stock markets react to the publicly available information including prior stock prices and annual financial reporting during the event windows.

The academic contributions of this study are as follows:

1. Investigating the audit report lag and tax-related variables into financial reporting lag and stock market research for emerging economies.

2. Selecting samples from various industry sectors for stock market reactions to financial reporting lag because prior studies used the sample from listed manufacturing firms in Indonesia.
3. Applying the two-stage least square method and the dynamic GMM model to analyse the stock market's reactions to financial reporting lag because this method considers and tackles the endogeneity problem experienced in the model particularly on the panel data by the dynamic GMM model.
4. Using the Wald test to analyse the asymmetric stock market reactions between timely and late financial reporting lag.

Finally, the practical contributions of this study are as follows:

1. The Financial Service Authority of Indonesia (OJK) could enhance its supervision toward the non-compliant firms in submitting their annual financial reports.
2. Investors may discover that publicly listed corporations do not take related party transactions, a high degree of debt on a capital structure, and tax audit results into consideration when releasing their annual financial reports. As a result, to make an investment choice, investors do not need to seek information about listed corporations declaring those accounts.
3. The investors also may find the appropriate timeliness to invest or divest their money from the timely and late financial reporting firms.
4. The companies' managers could assess the impact of timely and late financial reporting of the listed firms.
5. The findings of this study have implications for investors in countries, which have similar financial reporting and tax regulations to Indonesia.

Student Declaration

I, Asep Tatip Nugraha, declare that the DBA thesis entitled 'Determinants of, and Stock Market Reactions to, Financial Reporting Lag in Indonesia', is no more than 65,000 words in length including quotes and exclusive of tables, figures, appendices, bibliography, references, and footnotes. This thesis contains no material that has been submitted previously, in whole or in part, for the award of any other academic degree or diploma. Except where otherwise indicated, this thesis is my own work.

"I have conducted my research in alignment with the Australian Code for the Responsible Conduct of Research and Victoria University's Higher Degree by Research Policy and Procedures.

Melbourne, 22 December 2021

Asep Tatip Nugraha

Acknowledgements

First, I would like to thank to Allah Almighty for giving me a healthy life during my study. My deepest gratitude to my principal supervisor, Dr. Guneratne Wickremasinghe, who has patiently guided me in studying this topic from the very beginning until I finished my thesis. I am very grateful to have that good opportunity in life for working together with him. Researching stock market reactions was very challenging since I had no knowledge in this area. Also, I would like to express my sincere gratitude to my associate supervisor, Dr. Syed Haider, who gave his full attention to supervise and direct me while I completed my thesis. My two supervisors were good enough to allocate their time among their busy schedules to help me to conduct this research in the right way.

I would also like to sincerely appreciate my lecturers at the course works program: Dr. Jo (Chau) Vu, Professor Elisabeth Wilson-Evered, Dr. Keith Thomas, and Dr. Peter Demediuk for teaching me research skills in the doctoral program. Studying research topic and issues, research methods, literature reviews, and research proposal development coursework was an excellent way to develop my research skills while practising research presentations in front of English-speaking communities. What a demanding as well as inspiring experience! Many thanks to my sponsor, the Indonesia Endowment Fund for Education (Lembaga Pengelola Dana Pendidikan - LPDP) to fund my doctoral degree at Victoria University, Melbourne, Australia. Also, thanks to the Victoria University for accepting me into the Doctor of Business Administration program. I am eternally grateful for having this opportunity to conduct research in an international environment.

I would like to thank my family: my mother, my father, my sisters, my brother, and my nieces for their support. It was not an easy life for me to survive alone far away from my closed families, particularly during the dire COVID-19 pandemic lockdowns. However, their prays and supports really mattered for my study in Melbourne. My thanks also go to my colleagues at the Directorate General of Taxation in Indonesia, to my fellows at Victoria University on DBA and PhD program, to several my friends researching PhDs at RMIT University in Melbourne, QUT University in Brisbane, Nottingham University in England, Ghent University in Belgium, and the University of Gadjah Mada in Indonesia. Thank you for your togetherness, prayers, and spirits. Finally, many thanks to Peter Symons, AAPHA who professionally edited my thesis, and Adrian Bernard Coen who professionally proofread my Summary of Responses to Examiners.

Table of Contents

Lists of Tables

Lists of Figures

Abbreviations

AAR	**Average Abnormal Returns**
AASB	**Australian Accounting Standards Board**
AR	**Abnormal Returns**
AR1	**Markov first-order autoregressive**
ARL	**Audit Report Lag**
ASEAN	**Association of Southeast Asian Nations**
ATL	**Actual Reporting Time Lag**
ATO	**Australian Tax Office**
AUD	**Australian Dollar**
AUDRLT	**Audit Report Lead Time**
Bapepam-LK	**Badan Pengawas Pasar Modal dan Lembaga Keuangan (Capital Market Supervisory Agency and Financial Institution)**
BPLM-test	**Breusch-Pagan Lagrange Multiplier test**
BEI	**PT. Bursa Efek Indonesia**
BEPS	**Base Erosion and Profit Shifting**
CAAR	**Cumulative Average Abnormal Returns**
CAPM	**capital asset pricing model**
CAR	**Cumulative Abnormal Returns**
CEO	**Chief Executive Officer**
CEM	**Common Effect Model**
CSW	**Cross Section Weight**
DATL	**Dummy Actual Reporting Time Lag**
DER	**Debt to Equity Ratio**
DGT	**Directorate General of Taxation**
DIM	**Dimson's beta estimate procedure**
DL or dL	**Lower bound of Durbin Watson**
DU or dU	**Upper bound of Durbin Watson**
DW	**Durbin Watson**
FEM	**Fixed Effect Model**
FGLS	**Feasible Generalized Least Square**
FRL	**Financial Reporting Lag**
FRT	**Financial Reporting Timeliness**
FRLT	**Final reporting lead time**
GAAP	**General Accepted Accounting Principle**
GDP	**Gross Domestic Product**
GICS	**Global Industry Classification Standard**

GLS	**Generalized Least Square**
GMM	**Generalized Method of Moments**
IAI	**Ikatan Akuntan Indonesia (Indonesian Institute of Accountant)**
IAS	**International Accounting Standard**
IASB	**International Accounting Standards Board**
IASC	**International Accounting Standards Committee**
ICAMEL	**PT. Indonesian Capital Market Electronic Library**
ICB	**Industry Classification Benchmark**
IDX	**Indonesia Stock Exchange**
IDX-IC	**Indonesia Stock Exchange Industrial Classification**
IFRS	**International Financial Reporting Standard**
IFA	**International Federation of Accountant**
IHSG	**Index Harga Saham Gabungan (Jakarta Composite Index)**
IMF	**International Monetary Fund**
ITA	**Indonesian Tax Authority**
ITAA	**Income Tax Assessment Act**
JASICA	**Jakarta Stock Industrial Classification**
LASSO	**Least Absolute Shrinkage and Selection Operator**
LEV	**Leverage**
LIFO	**Last in First out**
MOF	**Ministry of Finance of Republic of Indonesia**
NYSE	**New York Stock Exchange**
OECD	**Organization for Economic, Cooperation, and Development**
OJK	**Otoritas Jasa Keuangan (Financial Services Authority of Indonesia)**
OLS	**Ordinary Least Square**
OPIN	**Audit Opinion**
OROA	**Operating Returns on Assets**
PAT	**Positive Accounting Theory**
PSAK	**Pernyataan Standar Akuntansi Keuangan (National Accounting Standard)**
PT	**Perseroan Terbatas (Limited Company)**
PROF	**Profitability**
PWC	**Price Waterhouse Coopers**
REM	**Random Effect Model**
RI	**Republic of Indonesia**
ROE	**Return on Equity**
RPTs	**Related Party Transactions**

RQ	**Research Question**
SEC	**Securities and Exchange Commission**
SKP	**Surat Ketetapan Pajak (Tax Assessment Letter)**
SKPKB	**Surat Ketetapan Pajak Kurang Bayar (Tax Underpayment Assessment Letter)**
SKPKBT	**Surat Ketetapan Pajak Kurang Bayar Tambahan (Additional Tax Underpayment Assessment Letter**
SKPLB	**Surat Ketetapan Pajak Lebih Bayar (Tax Overpayment Assessment Letter)**
SKPN	**Surat Ketetapan Pajak Nihil (Nil Tax Assessment Letter)**
Simple OLS	**Simple Ordinary Least Square beta estimate procedure**
SIZE	**Firm Size**
SW	**Scholes-Williams' beta estimate procedure**
TAX	**Tax Audit**
TBK	**Terbuka (Public Company)**
TICMI	**The Indonesia Capital Market Institute**
TRBC	**Thomson Reuters Business Classification**
TSLS	**Two Stage Least Square**
UK	**United Kingdom**
US-SEC	**The United State's Security Exchange Commission**
USA	**United State of America**
VAT	**Value Added Tax**
VIF	**Variance Inflation Factor**
WLS	**Weighted-least square**

Chapter 1

Introduction

1.1 Background and Motivation

The Ministry of Finance (MOF) of the Republic of Indonesia issued a tax regulation No.169/PMK.010/2015, which has been effective since 2016, to regulate leverage or capital structure for a company in Indonesia to have a debt-to-equity ratio (DER) threshold of 4:1 (4 units of debt compared to 1 of equity). The regulation was started to apply in 2016. This regulation was purposed to prevent the Indonesian companies from minimising tax payments by creating a huge number of loans on their capital structures. According to the tax perspective, raising a debt on capital structure could have tax benefits (Graham 2000). Taylor and Richardson (2012) found that thin capitalisation[1] is one of critical drivers to avoid tax payment for publicly listed companies in Australia. Butler (1988) stated that tax savings from thin capitalisation is an example of agency problems.

Further, the number of new firms listed on the Indonesia Stock Exchange (IDX) was 23 new companies in 2014, 16 new companies in 2015, 14 new companies in 2016 (Kayo 2020), and 37 new companies in 2017 (Uly 2017). However, Aryanti (2017) reported that 70 listed companies delayed their financial reporting in 2017. According to Beest, Braam and Boelens (2009), timeliness is one of the enhancing qualitative characteristics of useful financial information. On 29 March 2018, the International Accounting Standard Board (IASB) revised Chapter 2 of the Conceptual Framework for Financial Reporting, which emphasises the essence of timeliness as one of the enhancing qualitative characteristics of useful financial information (Deloitte 2020d). Timeliness is also an essential aspect of the value of a financial statement (Eghlaiow, S, Wickremasinghe, G & Sofocleous, S 2012; Kogilavani 2012). The information on financial statements will be not relevant for decision making if the financial statements are reported late (Whitworth & Lambert 2014).

Hasan, Abdullah and Hossain (2014, p. 27) argued that due to the information content, the financial statement must be published on time. The timeliness of the financial statement publication will affect the variability of share prices (Haw et al. 2000). Therefore, reporting financial statements on time is very important for listed firms. Further, study into information

[1] A thinly capitalised firm is a firm in which its assets is financed by relatively low level of equity and high level of debt. Debt to equity financing of a firm is frequently measured as a percentage or DER/Debt to Equity Ratio (ATO 2016).

content and annual financial reporting timeliness[2] was pioneered by Beaver, WH (1968). Afterward, many studies were conducted in this area both in emerging and advanced countries, due to the essential nature of annual financial reporting timeliness and stock market reactions. Hence, it would be interesting to analyse the impact of the Indonesian tax regulation regarding the DER threshold on the financial reporting behaviours of Indonesian listed companies along with the reactions of stock markets to financial reporting timeliness using data around the year of the implementation of the DER tax regulation (2014-2017).

Furthermore, if daily data are employed, a four-year observation period is adequate to assess abnormal stock market returns (Strong 1992). Because of its strength in preventing poor R^2 on the market model produced by thinly traded stocks,[3] analysis of daily data is suggested for measuring stock market responses (abnormal returns) (Erlien 2011). According to Basdas and Oran (2014, p. 169) daily data can improve the accuracy of the event window. For example, the yearly reporting date is immediately identifiable, and additional compounding events in the same month may be eliminated. Daily data boost statistical power, minimise biased beta, and are sufficient for four-year observation periods (Strong 1992). Similarly, Brown (1985) stated that using the same research approach, daily data give well-specified market models employing traditional parametric tests in any situations. Furthermore, Brown (1985) elaborated on the statistical advantages of daily data, such as the biased OLS estimate in the presence of non-synchronous trading, the extremely non-normal daily excess returns, the increase in variance surrounding the event dates, the autocorrelation problems in daily excess returns, and the non-normality data of daily returns.

Determinants of financial reporting timeliness are also studied by some authors. Audit report lag (ARL), defined by Durand (2019) as the number of days that elapse between the end of a company's financial year and the date of the audit report, is the most important single determinant affecting the timeliness of annual financial reporting (Abernathy et al. 2017; Chan, Luo & Mo 2016). However, there has been a lack of research in Indonesia investigating the effect of the ARL on the financial reporting timeliness. In addition, firm size is also considered as the foremost determinant analysed in the study into audit delay (Khoufi & Khoufi 2018) and financial reporting timeliness (Al-Ajmi 2008). Al-Ajmi (2008) revealed that firm size has a negative relationship

[2] Financial reporting timeliness is the number of days between the end of company's financial year and when the company firstly publishes its annual financial reports or firstly submits to the Financial Services Authority of Indonesia (Otoritas Jasa Keuangan/OJK) or Capital Market Supervisory Agency and Financial Institution (Badan Pengawas Pasar Modal dan Lembaga Keuangan/Bapepam-LK). In this study, the term of financial reporting timeliness (FRT), financial reporting lag (FRL), and financial disclosure timing will be used interchangeably, unless otherwise stated.

[3] Erlien (2011) argued that thinly traded securities could cause low R^2. To minimise the risk of low R^2 caused by the thinly traded securities, daily data can be used due to their robustness to prevent the low R^2.

with financial reporting timeliness. Owusu-Ansah and Leventis (2006) and Owusu-Ansah (2000) also found a negative relationship between financial reporting lead time and firm size.

Moreover, as stated by Owusu-Ansah (2000), some reasons for the big firms reporting their financial report earlier than small firms are as follows:

1. Big firms have more resources than small firms. Big firms have a relatively modern accounting system and more accounting staff. Big firms can also use computerised tools in their inventory production systems so that they can process transactions quickly and timely prepare financial reports.
2. Most big firms have better internal control systems, making it easy for an independent auditor to conduct substantive and compliance audits.
3. Big firms also tend to be supervised by many financial experts.

The big firms are interested in publishing their financial reports in a timely manner to avoid speculation among financial analysts, which can trigger speculative trading in their securities. Speculative trading can affect the value of the company. Nonetheless, using 200 listed firms in Malaysia as samples, Hashim, Hashim and Jambari (2013) found a positive relationship between firm size and financial reporting lead time, which contradicts the finding of Owusu-Ansah and Leventis (2006) examining 294 listed firms at Athens stock exchange and Owusu-Ansah (2000) employing 75 non-financial listed firms in Zimbabwe. Therefore, it will be significant to reinvestigate the relationship between financial reporting timeliness and firm size using different samples.

Furthermore, profitability is a variable that impacts annual financial reporting timeliness. A company that has financial losses or bad news tends to delay its annual report longer than a company that has made a profit or has good news (Al-Ajmi 2008; Carslaw & Kaplan 1991; Owusu-Ansah 2000). There is an inverse association between profitability and financial reporting lag. Habib et al. (2019) and Khoufi and Khoufi (2018) discovered that profitability reduces ARL. Most loss-making firms delay their financial reporting timeliness; meanwhile, most profit-making firms publish their annual financial statements early, indicating that the auditors carefully increase the audit procedures for loss-making firms. However, Alkhatib (2012) revealed an insignificant correlation between profitability in the service sectors and audit report timeliness. Nevertheless, their study finds it significant in the manufacturing sectors with a negative relationship. Therefore, the profitability for different business sectors provides a different relationship with audit report timeliness.

Another variable that has been studied in this area is related party transactions (RPTs), for example by Habib and Muhammadi (2018). However, the related party transactions were not directly investigated into annual financial reporting timeliness. Habib and Muhammadi (2018)

investigated the relationship between related party transactions and audit report lag. They find a positive association between them, indicating that an independent auditor understands the implication of the RPTs, which exert additional audit effort to carefully examine yearly financial statements, leading to the long ARL. The RPTs are mostly complex, diverse, and conducted between a company and its affiliates, directors, managers, or owners (Habib & Muhammadi 2018). According to Weygandt, Kimmel and Kieso (2009, pp. 315-24), RPTs can be used as a tool for minimising tax payments (see Henry at al. 2007, Cheung at al. 2009, and Taylor & Richardson 2012). The bankruptcy of Enron, with losses of million dollars of employees' superannuation funds, thousands of jobs, and losses borne by creditors and shareholders, was caused by the agency problems using related party transactions (Kohlbeck & Mayhew 2004). Therefore, related party transactions are expected to influence financial reporting lag.

Another variable investigated into financial reporting timeliness is leverage. Afensimi (2015) revealed that the leverage variable has no significant effect on audit delay; however, Al-Ajmi (2008) has stated otherwise. In the study of Al-Ajmi (2008), the leverage is associated with the reporting timeliness due to the risk of failure or bankruptcy by owning a high level of debt on capital structure. However, Warner (1977) revealed that the costs of bankruptcy is not high, and can even be quite small when a particular industry determines its debt or funding policy. Further, Graham (2000) argued that rising debt on a capital structure can increase the tax benefits (see also Taylor and Richardson, 2012). Paying a large amount of interest can reduce a company's profits, minimise a firm's income tax, and eventually increase the amount of retained earnings because the interests paid to the lender are deductible when calculating a corporate income tax (see Appendix B).

The current Indonesian legislation on debt-to-equity ratio (DER), obliges the Indonesian companies to have a DER threshold of 4:1 to prevent a large amount of debt owed by a company from becoming a tool for minimising their tax payments (known as 'thin capitalisation'[4]). As stated by Buettner et al. (2012, p. 931), a DER tax rule is fundamental to reducing the debt to equity ratio (DER) in corporate capital structures effectively. Butler (1988, p. 109) argued that the tax savings from debt and increased leverage, which can raise a firm's profits (retained earnings), are an example of agency problems. Since this type of capital structure is considered as an agency problem, the company's stakeholders such as investors, managers, and shareholders could perceive it as bad news. Thus, an independent auditor will carefully investigate a listed company that has a high amount of debt, leading to long audit and reporting timeliness.

[4] A thinly capitalised firm is a firm in which its assets is financed by relatively low level of equity and high level of debt. Debt to equity financing of a firm is frequently measured as a percentage or DER/Debt to Equity Ratio (ATO 2016).

The type of audit opinion is another predictor of annual financial reporting timeliness. Abidin and Ahmad-Zaluki (2012) found a positive association between the audit report lag and qualified audit opinion. An independent auditor will resist publishing a qualification and will expend a long time to address an issue in question. Listed firms will be required to negotiate with the independent auditor if their financial statements are found to have a qualified opinion (Daoud et al. 2014). Therefore, the auditors need more time to process the audit for listed companies that have a qualified audit opinion, and this will make the financial reporting timeliness longer than the audit for those with unqualified audit opinion. Further, another variable examined into annual financial reporting timeliness is a tax audit. Pardede (2016) examined the impact of the tax audit variable on the yearly reporting timeliness for the period 2010-14 and found no relationship between them. However, Pardede (2016, p. 101) argued that a listed company that obtains bad news from the tax audit in the form of additional tax obligations and penalties, which are still in disputes with the tax authorities, may delay financial reporting timeliness.

Stock market reactions[5] were also studied by previous researchers with respect to their relationship with annual financial reporting timeliness. Some factors influence the stock market's response. For example, oil prices (In'airat 2018; Khositkulporn 2013), a joint venture (Koh & Venkatraman 1991), mergers and acquisitions (Haleblian et al. 2009), macro-economic variables (Ismail, S, Nijam & Musthafa 2015), dividend announcements (Dasilas & Leventis 2011) and many other factors. However, this study will only investigate the stock market reactions to yearly financial reporting timeliness for several reasons.

1. Timeliness is a mandatory circumstance for the useful economic data in the annual statements (Ball & Brown 1968).
2. The annual financial statements are reliable and not expensive (Givoly & Palmon 1982).
3. The yearly financial reports are one of the main means of communication by a listed firm to its stakeholders (Menike et al. 2013, p. 75).
4. Net income is of particular interest to stock markets (Ball & Brown 1968).
5. The regulatory board, the Financial Services Authority of Indonesia (Otoritas Jasa Keuangan/OJK), mandates the Indonesian listed companies to report or publish the annual audited financial statements.

In Indonesia, Rahmawati (2013) investigated stock market reactions to financial reporting timeliness. The study reveals insignificant differences between the stock market reactions on timely and late financial reports of the yearly financial statements using univariate analysis of

[5] Stock market reactions are the responses of stock market or share market toward an economic activity, which are signed by the variability in the stock or share prices and are measured by, for example, abnormal return or Cumulative Abnormal Return (CAR). This thesis will use the term of stock market reaction, stock market response, share market reaction, and share market response interchangeably, unless stated otherwise.

unbalanced panel data from 2003 to 2008, consisting of 568 unbalanced-pooled data. Those findings contradict the discovery of Givoly and Palmon (1982), Kross (1982), and Kross and Schroeder (1984). They found that the market's response to early earnings announcements is more significant than those to a late disclosure. It indicates that there is a decline in the value of information when the reporting delays increase. The abnormal returns of companies that announce the earnings late (early) were considerably lower (higher) than those of companies that announce the earnings early (late). In other words, the residual returns of late reporting companies are lower than those of early reporting firms (Kross 1982). According to Kross (1982), these reactions occur because the market assumes late reporting firms tend to have bad news. Meanwhile the early reporting firms tend to have good news. Therefore, the stock market reactions on early financial reporting are higher compared to companies that provide delayed or late financial reporting.

In addition, Rahmawati (2013) used the Indonesian listed manufacturing companies at the Indonesian Stock Exchange (IDX), which comprises only 48 per cent of the total number of firms on the IDX. There are several industry sectors at IDX other than the manufacturing firms, including agriculture, infrastructure, utilities, transportation, mining, property, real estate, building construction, trading, service, investment companies, banking and financial companies. Alkhatib (2012) found correlations between audit report timeliness and a firm's attribute or characteristics such as leverage, profitability, and firm size in the service sector and in the industrial sector (manufacturing). Türel (2010) also revealed that the type of industry influences financial reporting timeliness in Turkey. Due to the sample limitation, the findings in the study of Rahmawati (2013) do not represent the other industry sectors of the listed Indonesian firms. Rahmawati (2013, p. 173) suggested future research in the Indonesian context to use the sample data of all business sectors listed at the IDX. Therefore, this study will use all business sectors at IDX as the sample except banking and financial firms because of their distinct financial structures (Haider 2015). Drawing the sample from all industrial sectors could contribute to the literature and could be significant to the investors not only in manufacturing sector but also in the other sectors.

Further, Rahmawati (2013) employed the general market index, the index Harga Saham Gabungan (IHSG) or Jakarta Composite Index, to measure stock market reactions for the sample data of manufacturing firms. The IHSG is calculated from all securities traded at the IDX. Meanwhile, the sample of the study only included manufacturing firms. Benjelloun and Squalli (2008, p. 136) argued that the use of the general market index can be ambiguous in measuring stock market performances due to the capitalisation-weighted method when calculating the index which is overshadowed or dominated by big companies. This measurement could result in upward or downward biased beta and could provide an inconsistent ordinary least square market model

parameter caused by non-synchronous trading[6] between the security returns and the market index returns (Brown 1985, p. 5).

Rahmawati (2013) applied beta estimate procedures, as recommended by Scholes and Williams (1977) and Dimson (1979), to reduce the biased beta estimate. Nevertheless, Bartholdy and Riding (1994) found that the use of Scholes-Williams (SW) and Dimson's (DIM) adjusted beta estimate methods is not useful to reduce the upward or downward biased beta caused by the non-synchronousness. Brown (1985, p. 26) also revealed that the Scholes-Williams and Dimson's procedures do not present distinctive advantages in the event study compared to the simple ordinary-least square (simple OLS) market model in measuring abnormal performance. Also, Bartholdy and Riding (1994) recommended future research to select the appropriate market index in measuring stock market reactions.

An incorrectly estimated expected returns cause a biased information in the event study due to the improper choice of the market index in the model (Sitthipongpanich 2011, p. 65; Woon 2004). Woon (2004) further stated that the different choices of the market index will result in considerably different abnormal returns. In their agricultural sector study, Amegbeto and Featherstone (1992) suggested choosing a market index that is a close representative of the farmers' risks and returns when measuring risks in a single index model. In the event study, Woon (2004) emphasised that the market index returns should be derived from the same business core and the same policy with the observed security. Rahmawati (2018) revealed no evidence which supports the correlation between stock market reactions proxied by CAR (-2, +2) while applying the Scholes-Williams and Dimson's beta estimate methods and the annual financial disclosure timing when using the multivariate analysis. The findings in the multivariate analysis of Rahmawati (2018) and in the univariate analysis for the unbalance-pooled data of Rahmawati (2013) could be biased due to the improper choice of the market index in the model as Sitthipongpanich (2011) and Woon (2004) argued.

Furthermore, Rahmawati (2013, 2018) used the sample data, including the study period from 2003 to 2008 when the Global Financial Crisis (GFC) occurred from 2007 to 2008. Anagnostidis, Varsakelis and Emmanouilides (2016) found that the 2008 GFC inversely affected stock price efficiency for the majority of capital markets in Europe, which significantly affected to the critically abnormal movements of stock price trends. McManus et al. (2009, p. 341) stated that the Jakarta Composite Index and S&P500 index declined by 43.39 and 40.50 per cent,

[6] Non-synchronous trading occurs because of the different trading interval between a measured market index return and measured security return (Brown 1985, p. 5). Not all securities are traded everyday. Strong (1992, p. 543) stated that the infrequently traded security could result in downwards biased beta estimate while the frequently traded security could result in upwards biased beta estimate, which could finally present biased abnormal returns and mis-specified model in the event study methodology.

respectively, during the GFC period from 25 July 2007 to 31 December 2008. McManus et al. (2009) also revealed that the GFC affected the Malaysian and Indonesian equity markets which is shown by the diminishing benefits of diversification gained by investors. Thus, choosing the sample data from 2007 to 2008 could affect the biased results, which might lead to mis-specified stock market efficiency.

To sum up, reinvestigating the stock market reactions to the financial reporting lag using different observed periods and applying the samples from various industry sectors in the IDX will be a significant contribution to the knowledge in this area. Also, there has been a lack of research conducting asymmetric tests for stock market reactions between timely and late financial reporting firms. Measuring the asymmetric stock market reactions between timely and late financial reporting lag will also be a significant contribution to the event study, considering that prior studies find the abnormal stock returns of companies that announce the earnings early (late) were considerably higher (lower) than those of companies that publish the earnings late (early). Therefore, those findings could be measured by different methodology, for example, by testing for asymmetric using Wald test on the least square model.

1.2 Research Aims and Questions

Given the importance of reporting timeliness and stock market reactions, this research examines the variables influencing financial reporting delays for the whole business sectors of the firms listed on the IDX. Those variables are audit report lag (ARL), profitability, related party transactions (RPTs), firm size, leverage, audit opinion, and tax audit. The reactions of stock markets to financial reporting lag (FRL) are also measured, including the measurement of the asymmetry of the stock market reactions between timely and late financial reporting lags. Thus, the aims of this study are as follows:

1. To investigate the impact of the audit report lag, firm size, profitability, related party transactions, leverage, audit opinion, and the tax audit on the financial reporting lag of the listed companies in Indonesia.
2. To analyse the relationship between financial reporting lag and stock market reactions of the listed companies in Indonesia.
3. To examine the asymmetry of stock market reactions between timely and late financial reporting of the listed companies in Indonesia.

Following the aims of this study, there are specific research questions, which are the problems of financial reporting timeliness for the various business sectors of the listed Indonesian companies. This study answers the following research questions to achieve the aims mentioned above. Thus, the research questions are:

1. What is the impact of the audit report lag, firm size, profitability, related party transactions, leverage, audit opinion, and the tax audit on the financial reporting lag of the listed companies in Indonesia?
2. What is the relationship between the financial reporting lag and stock market reactions of the listed companies in Indonesia?
3. Are the stock market reactions asymmetric between timely and late financial reporting of the listed companies in Indonesia?

1.3 Contribution to Knowledge

This study is influenced by Rahmawati (2013), but there are some new contributions to the knowledge in this study including a different sample of data, variable constructions, methodology and observed period. Duvendack and Palmer-Jones (2014, p. 318) argued that scientific and statistical replication[7] are categorised as innovation. The academic contributions of this study are as follows:

1 This study applies various industry sectors at IDX as the sample, which includes agriculture, mining, property and real estate, infrastructure, utilities, transportation, trading, services, and investment. This limitation has been acknowledged by Rahmawati (2013, pp. 172-3) and is recommended for future research in this area. The sample of various industry sectors could be a contribution to the knowledge on stock market reactions to financial reporting lag for emerging economies.

2 This research uses the two-stage least square method, the OLS method, and the dynamic GMM to measure the relationship between stock market reactions and financial reporting lag. There could be a simultaneous relationship in the model caused by the existence of endogenous regressor.[8] According to Gippel, Smith and Zhu (2015, pp. 3-4), the endogeneity problem could exist due to some circumstances: (1) omitted variables,[9] (2) the simultaneity problem,[10] and (3) measurement errors.[11] Damodar (2004) suggested avoiding the OLS regression model in this simultaneous effect and they also advised to use the two-stage least

[7] Duvendack and Palmer-Jones (2014, p. 318) defined statistical replication as 'reconducting research', which applies an alternative estimation method, statistical software, variable construction, or comparable data. They also stated that scientific replication employs alternative conceptual or theoretical methods to examine how the statistical replication works. The new method employed with the new or the same data applying scientific and statistical replication are categorised as research innovation (Duvendack & Palmer-Jones 2014).

[8] An endogenous regressor is a variable which can be both an endogenous and exogenous variable in the system (Owusu-Ansah 2000). In Rahmawati (2013), financial reporting timeliness could be an endogenous regressor according to the research framework.

[9] Omitted variables are the variables not specified in a model, which theoretically could impact a response variable in a model.

[10] The simultaneity problems occurs when one or more predictors and a response variable are jointly figured out. These conditions trigger the causal relationship between the response variable and the predictors.

[11] A measurement error is a dissimilarity in the middle of a quantity being assessed and the true value of the quantity. The measurement errors occur when a surrogate is employed to analyse a difficult or an unobservable variable to estimate predictors or response variable.

square to make the model estimate consistent and unbiased.[12] Nonetheless, Ullah, Akhtar and Zaefarian (2018) stated that the endogeneity bias can be caused by some factors, and there are several techniques for mitigating it, for example, the dynamic generalized method of moments (GMM) is used to handle panel data (i.e., dynamic endogeneity bias), whereas the two-stage least squares (2SLS)/three-stage least squares (3SLS) are commonly used for survey data. Hence, applying the two-stage least square model and dynamic GMM as well as comparing their results are contribution to the event study.

3 This research investigates tax-related variables, which involve related party transactions, leverage proxied by debt-to-equity ratio and tax audit. Related party transactions and a high level of loan on a capital structure are popular for minimising tax payments. Thus, investigating the tax-related variables is a contribution to the knowledge in this area.

4 This research investigates audit report lag (ARL) as a predictor of financial reporting lag. Investigating the impact of the audit report lag would be the academic contribution into financial reporting lag research for emerging economies.

5 The asymmetric stock market reactions between timely and late financial reporting lag using the Wald test are measured in this study. Therefore, measuring the asymmetric stock market reactions between timely and late reporting lag using least square model would be another academic contribution to the event study.

6 This study does not include the period from 2007 to 2008 as the sample data because Anagnostidis, Varsakelis and Emmanouilides (2016) revealed that the 2008 global financial crisis has adversely impacted stock market efficiency which considerably affects the reverting movements of the stock price trends for the capital markets in Europe. The concurrent event in the event study could result in the biased abnormal returns not fully affected by the particular or scrutinized event (Sitthipongpanich 2011; Woon 2004).

This study is expected to fill the gaps in these areas. Duvendack and Palmer-Jones (2014) concluded that, although rarely conducted, research replication in social science has often been recommended due to its significant advantages in creating a more robust analysis or method and in verifying the condition of current knowledge and policy.

1.4 Statement of Significance

The discoveries of this research will be useful for the users of the annual financial reports in Indonesia in the following ways: external users, government, investors, and shareholders can gain an in-depth insight into management's accountability and appropriate use of their company's resources through the study of the financial reporting lag, which can help them in decision making. According to the tax perspective, a high level of debt on capital structure and related

[12] Consistency of an estimator is experienced if the sample size is getting larger, and the estimate is getting closer to the real value of the parameter. Meanwhile, the estimate is unbiased, if the expected value of an estimate is closed to the real value of parameter.

party transactions are popular as a tool for minimising tax payments. This study assumes that these variables are perceived as bad news for the investors which could affect longer financial reporting lag. However, this study finds that the high level of debt on a capital structure is not associated with financial reporting timeliness. Therefore, the investors may find that the listed firms with a high level of debt in their capital structures are not considered bad news and could not be exposed to higher risk to minimise tax.

Furthermore, the investors may also uncover that the tax audit results contained in the tax assessment letters are not associated with financial reporting lag. The Indonesian listed firms do not lengthen their financial reporting lag when they have higher amount of tax audit results and so it is not considered bad news. Furthermore, related party transactions are also found to have a non-significant relationship with financial reporting lag. Thus, the Indonesian listed firms do not consider their related party transactions as bad news for the investors. The reason for this condition could be the majority (94 per cent) of the related party transactions in the sample data are local related party transactions,[13] which do not involve overseas affiliation, and only utilise local related parties.[14] Therefore, the investors may discover that their investment decision that not all related party transactions are considered bad news.

Also, since this study employs data from various industry sectors, the existing or potential investors and the accounting managers from agriculture, mining, manufacturing, property or real estate, infrastructure, transportation, trading, services, and investment can benefit from this research to decide about investment and assess the impact of annual financial reporting on the variation of return. The existing or potential investors can determine the timing of investment. Meanwhile, company managers can determine the timing to announce the yearly financial statements. Finally, the research findings will be considered significant to the Financial Services Authority of Indonesia (Otoritas Jasa Keuangan/OJK) for increasing its supervision and imposing harsh sanctions on non-compliant firms for not meeting financial reporting timelines. The OJK could increase fines on late financial reporting firms to improve their compliance on financial reporting timeliness. Luypaert, Van Caneghem and Van Uytbergen (2016) also suggested that imposition of administrative and monetary penalties are considered effective to assure the compliance of financial reporting timeliness. Also, the OJK could shorten the financial reporting timeliness since the three months financial reporting timeframe is easily fulfilled by around 90 per cent of the Indonesian listed firms as also proposed by Givoly and Palmon (1982) to the

[13] Local related party transactions mean the transactions performed among the company's related parties which are all located within the same tax jurisdictions, for example, within the Indonesia's territory.

[14] Local related parties mean affiliations of a listed firm within the same tax jurisdiction, not involving overseas alliances or not using associations in tax-haven countries or tax haven territories in respect with their related party transactions.

Securities and Exchange Commission (SEC) for firms listed on the New York Stock Exchange (NYSE).

1.5 Structure of the Thesis

This thesis consists of 7 (seven) chapters and will be structured as follows:
Chapter 1 is the introduction which describes the background and motivation for this study, research aims and questions, conceptual framework, the contribution to knowledge, statement of significance and thesis structure.

Chapter 2 reviews prior studies pertaining to determinants of financial reporting timeliness, audit report lag, and stock market reaction, continued by the development of hypotheses related to this research. This chapter divides into three sections:

1. The background of the study which describes the Indonesian financial reporting regulation, accounting, and tax regulation environments. The agencies relevant to the issues in these regulations are explained in this section.
2. Analysis and discussions of theories underpinning this research, including existing research literature.
3. A literature review of determinants of, and stock market reactions to, financial reporting lag: impact of taxation. This section is further divided into two sections: developed and developing countries. The research gaps on the determinants of financial reporting lag and stock market reactions are also presented in this section.

Chapter 3 provides a sample, data, and methodology. In this part, the sampling procedure and source of data will be described, followed by presenting methods for analysing the data of determinants of financial reporting lag, stock market reactions to financial reporting lag, and the asymmetric stock market reactions between timely and late financial reporting lag.

Chapter 4 describes the result of data analysis for determinants of financial reporting lag. This part will present descriptive statistics of the data, correlation analysis between independent and dependent variables using the fixed effect model with and without dummy time effect. Also, a robustness test using an alternative proxy for specific variables is presented in this section.

Chapter 5 also presents the result of the analysis for stock market reactions to financial reporting lag using two-stage least square model as the main analysis. A robustness test to analyse stock market reactions to financial reporting lag is also presented in this section. The robustness test used the actual days of financial reporting lag using ordinary least square model both in Scholes-Williams' and Dimson's beta estimate procedures. In addition, the data analysis results using dynamic GMM model are explained in this chapter along with the comparative arguments to

compare the findings among the two-stage least square model, the OLS model, and the dynamic GMM model.

Chapter 6 explains data analysis of asymmetric stock market reactions between timely and late financial reporting firms using the least square model and Wald test. The analysis to measure the asymmetric stock market reactions is presented both using Scholes-Williams' and Dimson's beta estimate methods.

Chapter 7 summarises the thesis and acknowledges the limitations as well as recommendations for future research. The summary of the research method is described in this chapter. The summary of findings in respect to research question one (RQ1), research question two (RQ2), and research question three (RQ3) is also explained in chapter 7. Finally, the summary of academic and practical contributions is presented in this section.

The next chapter will elaborate on the Indonesian financial reporting and other relevant regulations, hypotheses development, theories, and literature review.

Chapter 2

Literature Review and Development of Hypotheses

2.1 Introduction

Chapter 1 describes the research background, research aims, research questions, conceptual framework, contribution to knowledge, statement of significance, and thesis structure. As stated in Chapter 1, this thesis aims to examine the impact of some variables on financial reporting lag, which includes the effect of taxation. Those variables are audit report lag, firm size, profitability, related party transactions (RPTs), leverage, audit opinion and tax audit. Investigating the stock market reactions to financial reporting lag, including their relationship and the asymmetric stock market reactions between early and late reporting lag, are also the aims of this study. The objective of this chapter is to explore the evidence to provide a base to answer the research questions identified in Chapter 1. The research literature associated with the observed variables of, and stock market reactions to, financial reporting lag, including the impact of taxation, will be reviewed for developing innovation and significance, theoretical background, hypotheses development, and identifying research gaps.

This chapter is divided into several sections. Section 2.2 describes the financial reporting lag (FRL) and other relevant regulations, including Indonesian regulations in respect to financial reporting timeliness, Indonesian tax regulations and accounting standards on related party transactions, Indonesian tax regulation on leverage or debt to equity ratio, and Indonesian tax regulation on tax audit. Section 2.3 elaborately explains the theories I use including prior works on those theories. Section 2.4 describes the literature review on determinants of financial reporting lag both in developed and developing countries, involving research gaps and hypotheses development. Section 2.5 presents literature reviews of stock market reactions, providing the efficient market hypothesis theory, literature on information content, the literature on stock market reactions to financial reporting lag, research gaps, and hypotheses development for stock market reactions. Section 2.6 is the chapter summary.

2.2 Financial Reporting Lag and Other Relevant Regulations

The average period of financial reporting lag vary among countries. Givoly and Palmon (1982) showed the average financial reporting delay is 37 days, and the required announcements of annual financial reporting in the observed periods is 90 days after the end of the US listed firms' financial year. In France, Khoufi and Khoufi (2018) reported that the average audit report lag was 76 days in 2014 and 90 days in 2010. The financial reporting deadline based on the regulatory requirement was 180 days after a company's end of financial year. Since the average financial

reporting compliance in France was excellent,[15] the study suggested the regulatory body reduces the reporting lag deadline. Meanwhile, a study into audit report lag in Indonesia conducted by Habib and Muhammadi (2018) found that the average audit report lag for the Indonesian listed firms was 78 days for the period from 2007 to 2013. Similarly, Rusmin and Evans (2017) also provided the average audit report lag for listed Indonesian firms was 79 days after the end of the company's financial year. Therefore, the average financial reporting lag and audit report lag vary according to each author due to the different study periods and the regulatory deadline to publish the annual financial reports of every country.

Although studies on financial reporting have been conducted in several countries, Indonesia's economy has a different character compared to other countries including Southeast Asian and developing countries. Saputra and Ali (2021) stated that Indonesia is a country with significant economic power and the most robust among the Southeast Asian countries. Indonesia is also the only country in the Southeast Asian region as the G20 member. In 2018, Indonesia was the host of the International Monetary Fund and World Bank Group forum in Bali. It makes foreign investors confidently invest their capital in Indonesia. In addition, according to a report by PWC (2017), Indonesia's economy is already 8th most prominent in the world, and it will be 5th most significant in 2030, and 4th most notable in 2050. Compared to other emerging economies, Santikajaya (2016) also emphasized that material capability of Indonesia is not as big as the other emerging economies like Brazil, Russia, India, and China (BRIC).

In addition, Indonesia and other emerging economies have different approaches to their financial reporting. According to Ghio and Verona (2015), China and India have determined to create national accounting standards based on IAS/IFRS through a 'translation/editing' procedure; meanwhile, Brazil and Russia have adopted the IAS/IFRS ('imitation') completely. Meanwhile, according to Gamayuni (2009), Indonesia started using a national accounting standard in 1974 called Accounting Principles (Prinsip Akuntansi), which was adopted from the US accounting standards. IAI (2020a) also explained that Indonesian Financial Accounting Standard (SAK) includes Statements of Financial Accounting Standards (PSAK), starting to converge most with IFRS on January 1st, 2015. Similarly, Brazil started to converge with IFRS in 2005, however, it began to fully adopt the IFRS in 2007. Although Indonesia and Brazil similarly converged their accounting standard with the IFRS, Indonesia does not fully link its accounting standards to the IFRS like Brazil and Russia do. Also, the Indonesian Financial Accounting Standard is issued by the Indonesian Institute of Accountants (IAI). Meanwhile, the Brazilian Financial Accounting Standard is issued by Brazilian tax authority except for its financial sector, which is issued by the

[15] Reporting delivery time declined to 76 days in 2014 from 90 days in 2010. The legal deadline to publish is 180 days the end of the financial year. The study suggests decreasing the deadline requirement by the regulatory body.

Central Bank of Brazil (Ghio & Verona 2015). In Indonesia, the tax authority does not have the competence to issue a national accounting standard; instead, it merely issues tax regulations.

For China's financial reporting, Ghio and Verona (2015) stated that, in recent decades, the accounting system in China has evolved substantially by deciding to build its national accounting standards based on IAS/IFRS, which are similar to what India has. Ghio and Verona (2015) also explained that China's financial disclosure exists to offer accurate information to the government, the most significant stakeholder, based on the correlation between income and expenditure and historical costs, which were mainly applied for businesses to estimate taxes. Conversely, Indonesia has different recording rules for accounting and taxation, which require the country to regularly develop, improve, and replace old tax rules to be more business friendly (Nasip & Sudarmaji 2018). Nasip and Sudarmaji (2018) argued that most contemporary tax systems must adhere to tax principles that are fair, widely known and understood, convenient for taxpayers, and efficient in terms of the cost of the taxing system as well as the future cost to taxpayers. Meanwhile, accounting policy has represented modern companies, which change swiftly and in complex ways, but it is more difficult for the Indonesian tax system to be more contemporaneous since the country is one of the nations with distinct recording systems for taxes and accounting.

For example, the issue of IFRS 16 convergence about leasing. According to Saptono and Khozen (2021), Indonesian tax authorities must implement tax policies that guarantee legal clarity, which accommodate a more explicit policy direction. Their report advised that tax authorities to establish a dialogue with key stakeholders to avoid future tax conflicts in the years ahead to bridge the practical gap between accounting and taxes. Moreover, Saptono and Khozen (2021) advised the Indonesian tax authorities to be aware of various withholding tax difficulties when the lessee reports interest expenses, as well as transfer/delivery issues that result in the VAT due when the lessee recognizes a right-of-use asset.

Joshi, Yapa and Kraal (2016) found that, compared to their ASEAN counterparts, accounting experts in Singapore, Malaysia, and Indonesia were overwhelmingly in favour of adopting IFRS. Nonetheless, their findings show that accountants in Singapore are more optimistic about the economic advantages of IFRS adoption for society than their colleagues in Malaysia and Indonesia because they have experienced the effective implementation of IFRS in their country, which is like Brazil's adoption of IFRS. Brazil's commitment to fully engage in the convergence process toward IAS/IFRS is primarily motivated by the country's ambition to attract further international capital and investment (Ghio & Verona 2015).

Furthermore, Indonesia has different tax regulations from developed country, for example Australia. The Indonesian tax authority announced a policy requiring all firms in Indonesia to

have a DER ratio of 4 to 1 on their capital structure, which they started to implement in 2016. Meanwhile, division 820 of the Income Tax Assessment Act (ITAA) 1997 requires Australian corporations to have a DER of 1.5:1, which means that for every AUD 3 of debt, the company is supported by AUD 2 of equity (ATO 2019). Nonetheless, ATO restricts the DER tax regulation to be subjected to organizations that meet the following criteria: Australian enterprises with international operations and linked organizations, Australian firms controlled from abroad, and foreign firms having operations and funding in Australia. Meanwhile, the Indonesian DER tax regulation is applied to all Indonesian companies except banking and financial companies.

To sum up, the above different tax regulation and systems, different financial reporting policies, and different economic conditions between Indonesia and other developing, as well as developed countries, mean that research on Indonesia's financial markets remains relevant. Although research has been widely conducted on financial markets in developing and developed countries, Indonesia's unique economic conditions, distinct tax regulation and systems, and its own policy in respect to financial reporting compared to other countries, could result in different findings. Furthermore, the detailed explanation about the Indonesian financial reporting regulations is presented in the next section. Also, Indonesia's accounting standards and tax regulations on related party transactions, Indonesia's tax regulations on leverage or DER, and Indonesia's tax audit regulation are presented in full in the following sections.

2.2.1 Indonesia's Financial Reporting and Accounting Standards

Indonesian financial reporting and capital market regulation have changed over the last three decades. On January 17th, 1996, Bapepam-LK[16] issued the financial reporting regulation number KEP-38/PM/1996 concerning 'the Regular Financial Reporting Timeliness for Listed and Public Companies'. The regulation obligates all listed Indonesian companies to submit the yearly financial statements for a maximum of 5 months after the end of the company's financial year. Further, the financial reporting regulation number KEP-134/BL/2006 was ratified by the Bapepam-LK on December 7th, 2006, replacing the prior financial reporting rule. According to KEP-134/BL/2006, 'The Regular Financial Reporting Timeliness for Listed and Public Companies', the annual financial reporting should be provided by the Indonesian listed firms to the Bapepam-LK within 4 months after the end of a company's financial year.

[16] Bapepam-LK is Badan Pengawas Pasar Modal dan Lembaga Keuangan (Capital Market Supervisory Agency and Financial Institution). Currently Bapepam-LK is replaced by OJK or Otoritas Jasa Keuangan (Financial Service Authority of Indonesia). One of the duties of Bapepam-LK (currently OJK) is issuing the regulation of regular financial reporting timeliness for listed and public company.

On July 5th, 2011, KEP-346/BL/2011, 'The Regular Financial Reporting Timeliness for Listed and Public Companies' was published by the Bapepam-LK. The new reporting standard required listed companies in Indonesia to send their yearly financial statements within 3 (three) months of the end of the company's financial year. This study uses the sample data from 2014-17 when KEP-346/BL/2011, The Regular Financial Reporting Timeliness for Listed and Public Companies' was coming into effect. Therefore, the financial reporting timeliness for the Indonesian listed companies to convey their annual report to the OJK for this study is within 3 months after the end of a company's financial year.

According to Gamayuni (2009) and IAI (2020a), the history of the Indonesian accounting standard (PSAK) from the beginning to the present can be summarised as follows:

1. During the colonial era, Indonesia did not have an accounting standard. Indonesia used the Dutch sound business practice which was adopted from the Netherlands.
2. Indonesia did not get its accounting standards until 1955.
3. In 1974, Indonesia followed the US accounting standards arranged by the Ikatan Akuntan Indonesia (Indonesian Institute of Accountans – IAI) called Accounting Principles/Prinsip Akuntansi.
4. Indonesian accounting standards were implemented in 1984, adopted from the International Accounting Standards Committee (IASC) at the end of 1984.
5. The IAI has committed to follow IFRS/IASC in 1994.
6. The differences between PSAK and IFRS were expected to be resolved in 2008.
7. Starting on January 1st, 2015, PSAK began to converge most with IFRS. Rahmawati (2013) summarises the hierarchy[17] of the accounting rules for listed companies in Indonesia as follows:
    a. The rules issued by the OJK.
    b. The accounting standards are arranged by the IAI.
    c. The regulations and rules are made by the IDX.
    d. The International Financial Reporting Standards (IFRS).

2.2.2 Financial Reporting Standards and Tax Regulation on Related Party Transactions

According to Deloitte (2020b), the International Accounting Standards (IAS) 24 (revised in 2013), by the IASB in respect to 'Related Party Disclosure', obligates listed companies to disclose any transactions among their related parties. The Indonesian capital market law (RI, 1995)

[17] The hierarchy is the level of accounting rules in Indonesia from level 1st as the most important accounting standard to level 4th as reference. The first level of accounting standard for the Indonesian listed firms is issued by the OJK. The second level and the third level are issued by the IAI and IDX, respectively. The last level refers to the international accounting best practice like IFRS.

number 8 (1995), article 1, verse 1 in Chapter 1, defines a related party as follows:

1. Family relationships due to marriage and descent to the second degree both horizontally and vertically.
2. Relations between the Party and employees, directors, or commissioners of that Party.
3. Relationship between 2 (two) companies where there are one or more members of the same board of directors or board of commissioners.
4. The relationship between the company and the Party, both directly and indirectly, controls, or is controlled by the company.
5. A relationship between two companies that are controlled, directly or indirectly, by the same Person.
6. The link between the company and significant shareholders.

Related party transactions are used as a tool to minimise tax payment (Weygandt, Kimmel & Kieso 2009, pp. 315-24). Empirical evidence provided by Habib and Muhammadi (2018) found that more than 90 per cent of the Indonesian listed companies conduct related party transactions (RPTs) in which the RPTs are associated with the audit report lag (ARL). The related party transactions lengthen audit report timeliness. It indicates that the independent auditors are aware of the consequences of RPTs, which lead to lengthy completed public audits.

Further, Weygandt, Kimmel and Kieso (2009, p. 315) also stated that the RPTs are intended to maximise the returns to a company group. A company could make a transaction with its affiliation located in a tax-haven country to minimise a corporation's income tax payment. For example, a company could purchase raw material from its affiliated company in a tax-haven country with a higher price compared to the price of the same goods from an independent company. The higher price of raw material imposed on the related party's transactions will cause financial losses to a company in a non-tax haven country, and will make profit for its affiliation in a tax-haven country. Further, none of companies will pay taxes to a government, or the tax payment could be minimised. By minimising the tax payment, the company will keep the tax money that should be paid to a government. Finally, the retained earnings of a company group will be higher due to unpaid taxes. Henry et al. (2007) investigated the capacity of RPTs in criminal financial reporting for US-listed companies. The study finds that RPTs have a significant impact on financial statements and have some characteristics of a crime involving misappropriation, which employ companies' high profile management, although the tax minimisation utilising the RPTs has a profound implication on financial statements. Further, Henry et al. (2007) elaborated that the most types of RPTs are payments to the company's top management for services or goods which are

fictitious or artificially made[18] as well as loans to related parties.

Beasley, Carcello and Hermanson (2001) emphasised that independent auditors should ensure that related party transactions must meet the following requirements.

1. The related party transactions should follow the General Accepted Accounting Principle (GAAP) regarding disclosure in the financial statements and related party transactions documentation.
2. The transactions are occurred, existed and are not fictitious so that the prices on the transactions are charged fairly based on the true conditions.
3. The related party transactions should be valued as those that were incurred among independent parties regarding the goods or services rendered, the term and conditions, and the economic conditions on the transactions.[19] Beasley, Carcello and Hermanson (2001) also revealed that independent auditors failed to investigate the clients' internal control further once the auditees have related party transactions.

However, Henry et al. (2007) argued that in some cases, the overlapping use occurs regarding the terminology used among related party transactions such as tunneling, insider trading, and self-dealing. Johnson et al. (2000) defined tunneling as transferring a company's resources or assets to its controlling stockholders using transfer pricing contracts for asset sales, stealing, embezzlement, seizure of business change, loan warranty, and unrestricted payments to top management. Meanwhile, La Porta et al. (2005) defined self-dealing as activities conducted by a person having the power to manage a company (controlling stockholders or managers) to redirect a company's profits for their interests without distributing or allocating to other investors. Similarly La Porta et al. (2005), Shapiro (1987) refered self-dealing to abusing insider powers for their advantage, including seizure of money, embezzlement, allocating the company's resources or contracts for their own interests. In a capital market study conducted by Engelen (2004) and Frijns, Gilbert and Tourani-Rad (2013), insider trading is categorised as criminal behaviour. However, this research will not refer to this definition for the RPTs. Instead, it will use PSAK number 7 revised in 2014 (IAI 2020b), IAS 24 revised in 2013 called 'Related Party Disclosure' (Deloitte 2020b), and the Indonesian capital market law number 8 (1995), Article 1 in Chapter 1.

According to Deloitte (2020b), the intention of IAS 24 (revised 2013) about 'Related Party Disclosure', is to promote the awareness of the probability that the loss or profit on the financial statements could be affected by the presence of RPTs and the ongoing financial positions derived

[18] Payments to the company's top management for fictitious services or goods are financial burdens or expenses for the company, which will reduce corporate income and finally will decrease corporate-income taxes.

[19] The price of transactions between a company and its affiliation should be made as fair as the price of the transactions to an independent company for the same goods, the same services, the same term of transactions and the same economic condition.

from the relevant party (IFRS, 2017). As a comparison, the Australian Accounting Standards Board (AASB) states that the aim to disclose the RPTs as obliged by AASB 124 (AASB 2015) about 'Related Party Disclosure', is to identify the influence of the transactions among the related parties (associates, joint ventures, or subsidiaries) on their operating and financial strategy although those transactions are relevant to business activities. However, the AASB 124 (AASB 2015) about 'Related Party Disclosure' reiterates that the related party transactions could have affect a company's financial loss or profit. For instance, a company may sell its product to its parent company or subsidiary. The amount of the product, the prices, the circumstances, sales terms and conditions between the related parties could be different from those between the independent or unrelated parties.

Cheung et al. (2009) researched related party transactions of listed companies in Hong Kong. They found that firms impose lower prices if they sell assets to their associated parties compared to the sales prices of similar products marketed to independent parties or unrelated parties on similar terms and conditions. Conversely, firms are charged higher rates if they purchase assets from their related parties compared to the purchase costs of a similar product bought from independent parties or unrelated parties. Those unfair circumstances could be intended to minimise tax payments because related party transactions are notoriously famous as a tool for reducing tax payment.[20] For Australian listed companies, the related party transactions concerning tax-haven utilisation, profit shifting,[21] thin capitalisation, and transfer pricing[22] are significantly associated with tax avoidance (Taylor & Richardson 2012). Similarly, Clausing (2003) revealed significant findings of tax benefits stimulation from related party transactions in the US companies by charging low prices. The US import prices are higher and the US export prices are lower compared to those imposed between unrelated or independent parties.

For listed Indonesian companies, Habib and Muhammadi (2018) uncovered that the RPTs are associated with audit report lag, which indicates that independent auditors are aware of the consequences of the RPTs. The consequences of the existence of RPTs force them to carefully inspect the RPTs based on PSAK number 7 (revised 2014), IAS 24 (revised 2013) about 'Related Party Disclosure', and the Indonesian capital market law number 8 (1995), article 1 in Chapter 1.

[20] The higher or lower prices on the related party transactions compared to the independent party transactions in the similar product, similar transactions terms, and similar economic conditions are purposed to shift the profits of a company from a higher tax-rate jurisdiction to a lower tax-rate jurisdiction or to no-tax country (tax-haven region). At the end, the whole firm groups will pay low taxes or will not pay taxes because their profits are in a tax-haven region.

[21] Profit shifting, known as Base Erosion and Profit Shifting (BEPS), is a tax avoidance technique used by multinationals to exploit similarities and discrepancies globally between tax law in various jurisdictions. This is achieved to move income artificially into low or non-tax jurisdictions where there is little to no economic activity (ATO 2019a).

[22] Transfer pricing is determining the price of transactions between related parties for tax aims (Feinschreiber, R. 2004). *Transfer pricing methods: An applications guide*. John Wiley & Sons. Feinschreiber, R. (2004).

Further, since the RPTs have an implication on tax motives, the Directorate General of Taxation (DGT) and the Ministry of Finance of Republic of Indonesia also regulate all companies (listed firms, unlisted firms, public companies, and state-owned companies) to perform their RPTs based on the 'arm's length' principle. Those regulations are the Director General of Taxation's decision number PER-32/PJ/2011 about 'the Fairness of Related Party Transactions' and article 18, verse (3) by Law number 36/2008 about 'Income Taxes'.

According to PER-32/PJ/2011, the arm's length principle exists when the transaction's prices, terms and conditions conducted among the related parties must be comparable to those performed with unrelated or independent parties. An independent auditor who conducts a public audit on a listed company is advised to consult the company's tax department to assure that the RPTs performed by the auditee are in line with the local tax regulation and international best practice recommended by the Organization for Economic, Cooperation, and Development's (OECD) Transfer Pricing Guidelines. Therefore, a public audit involving the RPTs takes longer than the inspection, which does not include the RPTs (Habib & Muhammadi 2018). It could lead to longer financial reporting timeliness.

However, based on chapter II letter A of SE-50/PJ/2013 on the Preparation of Tax Audit on Related Party Transactions point 4, tax avoidance risk is high on RPTs in low tax rate countries. Article 2, verse 1 of PER-32/PJ/2011, the regulation of the fairness of RPTs comes into effect on the Indonesian taxpayers who have RPTs with their overseas affiliations. Article 2, verse 2 of PER-32/PJ/2011 also defines whether the regulation is valid or in effect for the Indonesian taxpayers who have RPTs with their related parties within Indonesia's territory to take advantage of the different tax rate. Differences in tax rates are not due to the different tax rates among regions within the Indonesia's territory, rather it is caused by certain conditions[23] such as tax regulation imposed on the final and non-final income tax rate for business, the tax regulation imposed on value added tax (VAT) on sales of luxury goods and transaction performed by taxpayers of oil and gas cooperation contractor.

[23] Corporate income tax rates are the same across the Indonesian provincial or gubernatorial territories. According to the Indonesian tax legislation regarding RPTs mentioned in this paragraph, the fairness of the related party transactions is only come into effect on the overseas transactions. Meanwhile only local related party transactions, which should be measured in respect to their fairness, are the local related party transactions involving final and non-final income tax rate, value added transactions on luxury goods, and oil as well as gas cooperation contract contractors. For example, In Indonesia, the non-final corporate income tax rate is 25 per cent imposed on the corporations in areas such as manufacturing, financing, farming, or trading firm. Meanwhile, the final corporate income tax rate is 4 per cent imposed on building construction companies. If there are local RPTs in a building construction company and the general industry corporation, for example a manufacturing firm, the fairness of the transactions must be met based on the Indonesian RPTs tax legislation to avoid minimising corporate income tax payments due to the different corporate income tax rate between the building construction company and the manufacturing firm. Meanwhile, the local related party transactions among the general industries subjected to 25 per cent corporate income tax rate do not need to follow the fairness of the RPTs rule because there are no gaps on the corporate income tax rate among them which could be utilised for minimising tax payments.

2.2.3 Tax Regulation on Capital Structure

Previous studies have examined the relationship between leverage and financial reporting timeliness, for example, Abidin and Ahmad-Zaluki (2012), Al-Ajmi (2008), and the relationship between leverage and audit report delay, for instance, Afensimi (2015), Al-Ghanem and Hegazy (2011), Durand (2019), Carslaw and Kaplan (1991). However, those studies have not discussed the background of leverage based on tax perspectives. For example, a study by Carslaw and Kaplan (1991) investigating the association between leverage and audit delay, employed the failure and bankrupt risks as the background to measure the impact of leverage on audit delay. Carslaw and Kaplan (1991) argued that the debt to asset ratio might represent the financial health of a firm, and if that company were to fail, it affects the audit delay. In other words, according to Carslaw and Kaplan (1991), an independent auditor will take more time to complete a public audit on a firm owning a high level of debt, as high debt increases the risk.

While, from the taxation perspective, possessing a high level of debt on capital structure does not mean a risk of failure or bankruptcy. Having a high level of debt could be intentional in order to minimise tax. Graham (2000) argued that rising debt on a capital structure can increase the tax benefits. Having high debt levels can increase interest expenses, reduce corporate income, decrease the payments of corporate income tax, and eventually increase a company's retained earnings without any dividend payment (see Appendix B). Taylor and Richardson (2012), using sample data of 203 publicly listed companies in Australia over the period from 2006 to 2009, found that thin capitalisation is one of the critical drivers to avoid tax payment. Butler (1988, p. 109) further described the tax savings from debt and increased leverage, which can raise a firm's profits (retained earnings), as examples of the agency problems. This condition can encourage an independent auditor to carefully investigate a listed company that has a high amount of debt, leading to long audit and reporting timeliness. Jensen and Meckling (1976) also emphasised it as stated in the agency theory, high monitoring expenses occur in highly leveraged companies.

Many countries, including Indonesia, have issued tax regulations to handle those problems. In 2015, the (DGT) issued a regulation which ensures all companies in Indonesia to have a DER on their capital structure with a ratio of 4 to 1. This regulation applied from the beginning of the 2016 fiscal year. In Australia, Division 820 of the Income Tax Assessment Act (ITAA) 1997 mandates Australian companies to have DER of 1.5:1, meaning that for every AUD 3 of debt, the company is financed by AUD 2 of equity (ATO 2019). However, not all Australian-based companies are subject to the Australian thin capitalisation rule. The Australian thin capitalisation regulation is mandated to the entities which have the following criteria: Australian firms with overseas

businesses and their associated organizations, Australian firms which are overseas-managed and foreign firms with performances and financing in Australia declaring a debt deduction.

Although their detail varies, most countries have a thin capitalisation rule to prevent tax minimisation by increasing debt on capital structure. The study conducted by Buettner et al. (2012) uncovered that the thin capitalisation rule successfully decreases tax planning using intra-group loans, although it does not affect the external investments. For the Indonesian context, the thin capitalisation rule, number: 169/PMK.010/2015, is not only subjected to intra-group loans but also to external loans, including the loans obtained from banking and financial institution. Therefore, since increasing the loans are subject to tax benefits (Graham 2000), thin capitalisation is the primary tool to avoid tax payment for the publicly listed companies in Australia (Taylor & Richardson 2012), and tax savings from the thin capitalisation is an example of agency problems (Butler 1988). This research examines the relationship between the leverage or capital structure and the financial reporting lag. The public audit is a mechanism to minimise the agency problem. The independent auditors who are performing the public audit will inspect longer the listed companies which have a high level of debt,[24] leading them to take a longer time to complete the audit and causing the financial reporting lag longer than those for the companies without a high level of debt.

2.2.4 Financial Reporting Standards and Tax Regulation on Tax Audit

According to the DGT (2019), there are two types of tax systems in Indonesia, the official assessment tax system and the self-assessment tax system. In the official assessment tax system, the tax authority calculates the tax obligation of every taxpayer directly, and the taxpayers are passive and wait for their tax obligation to be assessed and delivered by the tax authority. Meanwhile, in the self-assessment tax system, the taxpayers calculate, pay, and report the tax obligation by themselves. The roles of the tax authority in the self-assessment tax system are supervising the tax compliance and enforcing the tax law through examination and investigation; for example, a tax audit. Indonesia applies self-assessment in its tax system. Thus, all taxpayers should calculate, pay, and report their tax obligation to the Indonesian tax authority. Then a tax audit is employed to verify the accuracy of tax calculation on tax returns based on the actual data such as bookkeeping, financial statements, commercial invoice, tax invoice, bank statements.

In 2019, the Indonesian tax authority aimed for a 16.67 per cent growth in tax revenue compared with 2018. This accounts for US$99.29 billion in tax revenue (Hermansyah 2018). Previous

[24] Since the high level of debt is, sometime, purposed to minimise tax payment according to tax perspective (thin capitalisation), it could be perceived as bad news by company's stakeholders including investors because tax savings from thin capitalisation is the example of agency problem.

experience provided evidence that the Indonesian tax targets have never been reached. A study carried out by McMillan (2018, p. 11) identified a decrease in Indonesia's tax revenue. It also revealed that the failures to reach tax targets for state budget have incurred in Indonesia, achieving only 81.61 per cent and 91 per cent in 2016 and 2017, respectively. In another report, Valenta (2018), also stated that Indonesia's tax revenue target has not been achieved in the last decade. The ratio of tax revenue to gross domestic product (GDP) or tax ratio of Indonesia compared to other developing regions was only 10 per cent in 2016 (OECD 2016). Meanwhile, Turkey's and Thailand's tax ratio in 2016 was 18.32 per cent and 15.42 per cent, respectively. The OECD (2016) also described that the highest tax ratio was that of South Africa (approximately 28 per cent), and OECD countries' average tax ratio reached around 18 per cent in 2016. The higher the tax ratio, the better the tax revenue is. Therefore, the Indonesian tax revenue and ratio are still low compared to other developing countries and OECD members.

As recommended by the OECD (2016), to reach the tax target and to increase the tax ratio, the DGT must examine the effectiveness of its tax collection. Increasing the supervision of the taxpayers' compliance by a tax audit is one of the methods which the DGT has used to make the tax collection more effective. Karyadi (2017) stated that the Indonesian tax authority has updated its tax audit regulation to improve the tax audit effectiveness, which will finally increase the tax audit results to encourage the Indonesian taxpayers' compliance. The tax regulation issued by the DGT is Circular Letter number: SE-11/PJ/2017 about 'the measurement, strategy, and plan of the audit' in 2017. The Director-General of Taxation regulation number: PER-07/PJ/2017, related to 'the Guidance of the Field Audit in the Audit Framework to Verify the Tax Obligation and Tax Compliance', was also issued in 2017. Further, the DGT's Circular Letter number: SE-10/PJ/2017 concerning 'the Technical Guidance of the Field Audit in the Audit Framework to Verify the Tax Obligation and Tax Compliance', was also ratified on April 21st, 2017. The regulations emphasise the tax audit procedures, which should be followed by tax auditors and taxpayers during the audit process.

Further, the tax audit regulation mandates taxpayers subjected to the tax audit should comply with the procedures determined by the tax authority such as providing the required data for the tax audit, attending the meeting with the tax authority, discussing the tax audit findings, allowing the tax auditors to inspect the business site or company's location, etc. Following the procedures of the tax audit process sometimes takes a lot of effort by the company to provide additional time to follow the tax audit procedures and processes. Pardede (2016) argued that these tax audit procedures and processes are assumed to lengthen financial reporting timeliness. Besides, the bad news from the tax audit outcomes in the case of the additional tax audit obligations and penalties could impact the financial reporting timeliness of a company being tax audited (Pardede 2016). According to article 1 number 15 'the General Tax Provisions and Procedures Law' number 16

(2009), the tax assessment letter (Surat Ketetapan Pajak/SKP) resulted from the tax audit can be: (1) tax underpayment assessment letter (Surat Ketetapan Pajak Kurang Bayar/SKPKB),[25] (2) additional tax underpayment assessment letter (Surat Ketetapan Pajak Kurang Bayar Tambahan/SKPKBT),[26] (3) tax overpayment assessment letter (Surat Ketetapan Pajak Lebih Bayar/SKPLB),[27] and (4) nil tax assessment letter (Surat Ketetapan Pajak Nihil/SKPN).[28]

Further, according to IAI (2020d), the latest PSAK 57 (revised 2014) concerning 'Provision, Contingent Assets and Liabilities' was validated on August 27th, 2014. This new version replaced the previous one that was ratified in 2009 and 2000. Adopted from IAS 37 (revised 2020), PSAK 57 (revised 2014) in respect to the 'Provision, Contingent Assets and Liabilities' defines the contingent liabilities as 'the possible liability arising from the past events whose existence will be confirmed only by the occurrence or non-occurrence of some uncertain future event not wholly within the entity's control'. Therefore, based on PSAK 57 (revised 2014) in respect to 'Provision, Contingent Assets, and Liabilities', the tax audit results should be disclosed if they create the potential liabilities.

Moreover, the latest PSAK 46 (revised 2014) about 'Income Taxes' was also ratified by the IAI on August 27th, 2014. PSAK 46 (revised 2014) was adopted from the IAS 12 (revised 2017). Therefore, based on PSAK 46 (revised 2014) or IAS 12 (revised 2017) about 'Income Taxes' and PSAK 57 (revised 2014) or IAS 37 (revised 2020) regarding the 'Provision, Contingent Assets, and Liabilities', tax audit results should be disclosed on the footnote of a company's financial statements as tax-related contingent liabilities (Pardede 2016). This argument is also in line with the study of Gleason and Mills (2002), which defines that the contingent tax liabilities are the specific cases of contingent losses or the potential liabilities as to the process of a tax audit, appeals, or litigation in which a company may bear because of the tax audit results. Since the company might consider that the tax-related contingent liabilities are the audit outcomes conducted by a government's tax revenue body, the tax audit or tax inspection results could be categorised as contingent liabilities. As stated in Owusu-Ansah (2000, p. 245), Ng and Tai (1994) found that companies that have extraordinary items or contingent liabilities need a long time to carefully investigate the elements, leading to an increase in their reporting delay.

[25] SKPKB includes additional tax obligation and penalty. The penalty consists of 2 per cent of additional tax obligations per month with a maximum of 24 months.

[26] SKPKBT includes additional tax obligations and penalty. The penalty consists of 50 per cent or 100 per cent of additional tax obligations, depending on the individual case.

[27] SKPLB does not contain additional tax obligations and/or penalties. However, in some circumstances, the Directorate General of Taxes (DGT) should pay interest calculated from the tax overpayment to the taxpayer receiving SKPLB.

[28] SKPN does not contain additional tax obligations and penalties.

Further, Hanlon, Hoopes and Shroff (2014) argued that tax authority enforcement and monitoring have a positive relationship with financial reporting quality. A tax audit is an example of tax enforcement and control. Hanlon, Hoopes and Shroff (2014) also emphasised that the government (tax authority) has an interest in the disclosure of firms' (taxable) profit like other stockholders. It conducts tax audits on those firms to prevent them from hiding income for the firm's benefit, for example, minimising tax payment. Hanlon and Slemrod (2009) conducted a study on the relationship between news regarding corporate tax aggressiveness and stock prices. They found that companies that had the news about tax shelters' involvement to reduce tax payments, tend to have a decline in their stock prices. Therefore, the tax-related variables, which include tax audit and transactions intended to minimise tax payments, are expected to influence the financial reporting timeliness, and indirectly affect stock market reactions to the company.

2.3 Theories on Financial Reporting

Gaffikin (2008) explained that agency theory expands traditional information economics which exerts some forces to empower how it operates. Information assymetry is one of the issues which affects the resource allotment, in which some parties (managers) have more information than the others (investors). Ross (1973, p. 134) described the economic presumption of the agency, which emphasises the agency relationship existing among groups when one is formulated as a surrogate who performs in support of other parties, which are intended as a principal. The shareholders have great trust in the managers, who do not own 100 per cent of the company's stock. The managers, as the agent, linked by contractual arrangements to the firm, influence the firm's condition or behaviour, such as the attitude toward risk-taking, the accounting technique, remuneration policies, organisational structure, and capital structure (Gaffikin 2008). In that case, a conflict of interests between the stockholders and the managers can arise because the shareholders have their own interests to increase the rate of return. Meanwhile, the managers have their own interests to get rewards in managing a company, for example, to increase their salary, to improve their reputation as a good manager, etc (Boshkoska 2015).

Furthermore, Ali (2020) stated that agency theory was founded on two major assumptions: (1) principals and agents have asymmetric information, and (2) principals and agents have diverging interests. The different interests of the principal and the agent could lead to various agency issues such as substandard investments, asymmetric information, poor purchasing decisions, and excess spending for particular benefits (Jensen & Meckling 1976). Similarly, Panda and Leepsa (2017) and Shleifer and Vishny (1997) also emphasised that the separation of ownership and control, distinct risk preferences, information asymmetry, and moral hazards all contribute to the conflict of interest and agency cost. According to Jensen and Meckling (1976), the information asymmetry is caused by the three fundamental issues: the first is the attempt to minimise or avoid the agency problems; the second is the problem costs which are triggered by the agency interdependence,

and the third is the monitoring problems because of the segregation between the owners and the managements.

However, Jaggi and Tsui (1999), Jensen and Meckling (1976), Owusu-Ansah and Leventis (2006) argued that timely reporting is a remedy to address the asymmetric information issues and improves the capital market's function. Also, declining the financial reporting lag is one of the salient methods to assure financial transparency, which could reduce agency issues (Kulzick 2004). Nonetheless, Boshkoska (2015) categorised parameters to address the agency problems into two factors: (1) internal factors and (2) external factors. The internal factors include internal audit, management remuneration, concentrated ownership, and excellent corporate governance. Meanwhile, the external factors consist of external audit, capital market, and regulation.

Besides, Watts and Zimmerman (1983) stated that a public audit is also a mechanism for the stockholders to verify what the managers have done. An audit by an independent auditor is an example of a monitoring mechanism to address the agency problems (Gaffikin 2008). The principal could hire a third party to monitor the agent's behaviour so that the principal would know what the actual activities are that the agent conducts. If a manager invests in high-risk projects, wrong purchasing decisions, or ineffective expenditures, an independent auditor can be assigned to investigate those manager's activities.[29] Further, a public audit is also an essential part of the financial reporting timeliness because a company cannot publish the annual financial statements if the audit has not been completed. An increase in audit delay could become a bad signal to potential or existing investors. Therefore, investors will react to the reporting timeliness, which results from the public audit process. Hence, a company needs to reduce agency problems by appointing an independent auditor and reporting the financial statements on time. As a result, both hiring an independent auditor to audit the company and applying timely financial reporting are the solutions to mitigate those agency issues, which could increase the value of the firms and improve the quality of the firm's output.

Moreover, Watts and Zimmerman (1983) argued that companies are organised by a set of contracts that could raise incentives for opportunistic stakeholders. The opportunities, such as stealing, shirking, or overconsuming, could decrease the value of the firms and their total output. Gaffikin (2008) also stated that opportunistic behaviour such as self-interest is the fundamental to any economic affair. Based on the Positive Accounting Theory (PAT), self-interest or the opportunistic attitude is the cause for deciding toward the policy, technique, and accounting

[29] Even if the substandard investments, wrong purchasing decisions, and ineffective expenditures are company policy, the shareholders could still hire an independent auditor to reveal such a bad policy because the shareholders should assure that their money invested in that company is allocated in the company's business appropriately.

methods. Further, Gaffikin (2008) argued that according to the positive accounting theory, a firm can be considered as a nexus of contract. For instance, the contract is made among a company's managers, employees, and capital suppliers. The contract is essential for the individual involved in the economic activity within a company or organization to accord to collaborate to increase the prosperity of the shareholders.

Nevertheless, some contracting costs occur due to the nexus of the contract, for example, the costs for negotiating, monitoring, and maintaining the individuals arranging the contracts. Positive accounting theory acknowledges that the company will minimise the contracting costs, which will affect the policy applied for the company such as accounting policy (Gaffikin 2008). Therefore, the opportunistic behaviour could be reduced by creating contractual arrangements among the stakeholders, which restricts their opportunistic attitude. Furthermore, Butler (1988) asserted that the principle of the nexus of the contract is that a substantial number of shareholders in a modern firm do not have the opportunity to directly monitor the company's management, officers and directors, who mostly behave based on their own purposes and not on behalf of the shareholders' aims.

Like Agency Theory, the conditions on the nexus of contract can create agency costs and agency problems. However, Butler (1988) emphasised that those agency costs and problems can be minimised by making the contractual terms upon legal constraints and in the face of the market. Butler (1988, p. 120) also stated that the parties who form a firm under the nexus of contract, anticipate the numerous problems associated with specialisation, team production, delegation, and agency relationships. Thus, the link of the agreement will restrict the contractual makers' behaviour to handle or avoid those agency costs and problems. Bricket and Chandar (1998) also argued that the purpose of the agreement under the nexus of a contract between the shareholders and the manager in a company is to reduce agency costs.

In addition, in a modern corporation, a company's ownership and management are separated. However, their relationship can be linked by a contract. Fama (1980) argued that from the perspective of contractual agreement, the segregation of a company's management and ownership can be described as a well-organised model of commercial institutions. Further, Fama (1980) reiterated that in the modern company, a manager has at least two purposes: bearing the risk of the business and controlling the company's management. Since other corporations are the competitors, the company has a risk of losing to the competition. This condition forces the company to develop a model and mechanism to control the accomplishment of every worker and the whole group within the organisation. The managers accept the chance and control delivered by the market for the managers' amenity outside and within the company. Both companies and managers have rivals, which eventually forces them to develop their resources to be more

competitive.

According to Butler (1988, p. 106), in the efficient market hypothesis, the prices are actually active and they reflect the publicly available information about a company. Therefore, a corporate's contracts or company's managements or business, which are different from the shareholders' interests, will be revealed and reflected in the decline in their stock prices.[30] The power of the stock markets can replace an inefficient manager with an effective one since the replacement is one of the solutions to lessen the agency costs and the agency problems. However, Butler (1988, p. 111) emphasised that in viable or efficient share markets, dissatisfied shareholders will sell their shares with low prices rather than trying to reduce the agency costs through the internal mechanism like replacing the ineffective managers. Those shareholders will divest their money from the company within which incompetent managers, who have a conflict of interests with the shareholders, operate the business. Therefore, the nexus of contract theory not only suggests that stock prices are fair but also indicates that the corporates' managers have incentives to increase the stock value to improve the company's performance as well as to avoid of being replaced (Butler 1988, p. 106).

Kohlbeck and Mayhew (2004) asserted that the opportunistic attitude can be demonstrated by creating RPTs. Also, the trades are arranged using the nexus of contract among the associated parties. Agency Theory emphasises the related party transactions could be harmful or favourable for a company's stakeholders, for example, the foreign entities or subsidiaries utilised by Enron to channel the cash and income (Kohlbeck & Mayhew 2004). In the study by Arnold and De Lange (2004), the opportunistic attitude of agents such as legal companies, auditors, and top management as well as the information asymmetry, are investigated in their role in the Enron bankruptcy. Besides, the incompetence of the principals – stockholders and agents – are also examined in their capacity toward the Enron collapse. Their study reveals that the catastrophe and denial of the salient procedure of capitalism called corporate governance and market efficiency contribute to Enron's failure. The article presents the bankruptcy of Enron with losses of millions of dollars of employees' superannuation funds, thousands of jobs and losses borne by creditors and shareholders was caused by the agency problems using related party transactions (Kohlbeck & Mayhew 2004).

The finding of Arnold and De Lange (2004) supported the discovery of Kohlbeck and Mayhew (2004), which revealed that RPTs have a relationship with CEO stock options, fragile corporate governance, and have a contradictory relationship with the CEO and director's cash

[30] Shareholders would react to a firm's condition caused by management's behavior. If a company manager makes a business decision which is not approved by the shareholders, the shareholders could divest their money from the company. This condition could reduce the share price of the company.

compensation. This study will highlight the role of the agent's opportunistic behaviour and information asymmetry in the study of Arnold and De Lange (2004), which contributed to the Enron collapse. The studies of Arnold and De Lange (2004) and Kohlbeck and Mayhew (2004) emphasised the opportunistic behaviour of the firm's agent in arranging the related party transactions, which finally could contribute to a firm bankruptcy as in the case of Enron. Therefore, to minimise the risk of bankruptcy caused by RPTs, firms with RPTs require an independent auditor to exert additional effort in conducting an in-depth audit. This condition can mean that the audit of companies with RPTs will take longer than a company without RPTs. The long completed audit is expected to result in a prolonged financial reporting lag.

In Australia, tax avoidance by the RPTs is performed using tax-haven region by Australian listed firms. In other words, the transactions are conducted from a higher tax rate jurisdiction to a lower tax rate jurisdiction (Taylor & Richardson 2012). However, some authors do not agree with negative assessment of RPTs. Gordon and Henry (2005) argued that not all RPTs is intended for earning management. Instead, RPTs' purpose is to provide business demand by supplying an alternative form of compensation, for example, providing expertise, in-dept-skills, or knowledge by a company's related party. Related party transactions could also be intended for maximising firm value and minimising transaction costs (Chen, Wang & Li 2012). In those circumstances, the RPTs provide the positive image of the company and could be perceived as good news. If this is the cases, an independent auditor does not need to examine any further RPTs. Therefore, this sort of RPTs is presumed to shorten financial reporting lag.

In the context of Indonesia, referring to chapter II of SE-50/PJ/2013 letter A about 'Preparation of Tax Audit on Related Party Transactions' number 4, tax avoidance risk is high on RPTs using low tax rate countries. Further, article 2, verse 1 of PER-32/PJ/2011 regarding 'the Fairness of RPTs' is in effect Indonesian taxpayers having RPTs with their overseas affiliations. Furthermore, article 2 (two) verse 2 (two) of PER-32/PJ/2011 also defines that the regulation is valid for the Indonesian taxpayers having related party transactions with their related parties within Indonesia's territory to take benefit from the difference in the tax rate. The difference in tax rate is not caused by the different tax rate among the regions within the Indonesia's territory. Therefore, it could be concluded that the high-risk tax avoidance applying RPTs for companies involving tax-haven countries in their transactions or involving business for the Indonesian firms if they perform local related party transactions.[31]

[31] Local related party transactions mean the transactions performed among the company's related parties, which are all located within the same tax jurisdictions, for example, within the Indonesia's territory.

Furthermore, Jensen and Meckling (1976) applied Agency Theory to measure the correlation between the value of the company and its capital structure. According to the Agency Theory, all managers have the theoretical possibility to misuse the company's assets on various types of capital structure for their benefit, which are against the stockholders' interests. On the other hand, the company's managers also could minimise the cost of capital using a combination of debt and equity to avoid failure or bankruptcy. To raise the equity capital, a company's managers should obtain the trust of potential investors by ensuring that the agency costs can be minimised. According to Jensen and Meckling (1976), there is no perfect capital structure within companies because various agency problems occur in different conditions of capital structure. Creditors should handle the conflict of interest issues by demanding firms with high leverage be audited by the high quality of independent auditors (Ashbaugh & Warfield 2003). In line with Jensen and Meckling (1976), Carslaw and Kaplan (1991) emphasised that a company's capital structure could indicate its financial health. Had the company failed to tackle the agency problems derived from the proportion of capital structure, it could affect the audit delay. However, Warner (1977) revealed that the costs of bankruptcy are not high, and even quite low as expected when a particular industry determines its debt or fund policy.

In addition, from the tax perspective, the proportion of capital structure is irrelevant to the possibility of failure or bankruptcy. A firm with a high level of debt on the capital structure could have income tax benefits (Graham 2000). Increasing the level of debt could minimise the corporate's taxable income because the interest expenses are deductible, meanwhile, dividend payments are not. The corporate's tax income can be reduced by increasing the interest payment arising from higher borrowings. If there are no tax motives, supposed only perfect capital market motives, the firm value is independent of capital structure (Modigliani & Miller 1958, 1963). Nonetheless, due to the deductible characteristic of interest and the non-deductible aspect of dividends, some companies consider tax benefits against the probability of bankruptcy related to risky loans. Maximising the level of loans on capital structure is the particular method of all debt for tax motives (Modigliani & Miller 1963). The tax savings from the debt-heavy structure is an example of agency problem (Butler 1988, p. 109). Therefore, firms with a high level of debt on the capital structure need a longer time to be audited by independent auditors to handle the agency costs coming from the tax benefits or tax avoidance using the high level of debt on the capital structure.

Further, Pardede (2016) employed the Agency Theory to examine the impact of tax audits as an independent variable on financial reporting timeliness. The study assumes that the tax audit process conducted by the tax authority toward listed companies could force them to allocate extra time to focus on the tax audit process. During the tax audit process, the listed firms should provide data and documents for the tax audit purposes required by the tax authority. Also, they should

discuss the tax audit findings with the tax authority, and they should allow the tax authority to visit their business site during the tax audit period. Pardede (2016) also stated that the tax audit results, which potentially create liability, should be disclosed in the notes of annual financial statements classified as 'contingent liability'. In addition, the tax audit results are expected to influence the financial reporting timeliness due to their nature as bad news. The tax audit results, which might be considered as bad news, could potentially create tax obligations and penalties. Haw et al. (2003) found that bad news is positively associated with reporting lag. Therefore, firms with bad news as a result of a tax audit, which could potentially create a tax liability, are expected to delay their reporting timeliness (Pardede 2016).

Agency costs have also been associated with firm size (Chow 1982). Those agency costs can be reduced by the high quality of external audits (Al-Ajmi 2008). Al-Ajmi (2008) argued that delegation of work becomes more complex when a company grows due to a larger number of employees and wider range of jobs. In a large company, an opportunistic attitude and risk of moral hazard can increase because of declined visibility, control, or monitoring. Many studies have adopted Agency Theory to investigate the relationship between firm size and financial reporting timeliness.

Furthermore, based on IAS 24 (revised 2013) about 'Related Party Disclosure', the main aim in publishing the RPTs is to grab the highlight of the possibility that the financial reports (loss or profit) might be affected by the existence of RPTs and the ongoing financial positions coming from the relevant party (IFRS 2017). Minimising tax payments using RPTs and a debt-heavy structure is one of the agency problems that need to be tackled. It can affect the profitability or financial position of a company. An independent auditor hired by the stockholders to audit a loss-making firm will make additional efforts to complete the auditing to verify the loss or profit presented in the financial statements. Therefore, profitability is presumed to be associated with the financial reporting lag.

A qualified audit opinion is also assumed to have a negative effect on financial statements, which can make the audit delay longer (Che-Ahmad & Abidin 2008). An independent auditor will resist publishing a modification on the annual financial statement and will expend a long time to address a questionable issue that is found during the audit as it will need to be resolved through discussion or negotiation between the independent auditor and the client. Therefore, the type of audit opinion is expected to influence financial reporting lag. For the audit report lag variable, some studies such as Givoly and Palmon (1982, p. 491), Chan, Luo and Mo (2016), Eghlaiow, S, Wickremasinghe, G and Sofocleous, S (2012), and Abernathy et al. (2017) stated that this variable is the most critical determinant on financial reporting timeliness. Owusu-Ansah (2000) also emphasised that the significant association between audit report lead time and pre-reporting lead

time corroborates the finding of Givoly and Palmon (1982, p. 491) about the time taken for audit as the single most important determinant on the earnings announcement. Thus, financial reporting lag is supposed to be significantly influenced by audit report lag.

2.4 Determinants of Financial Reporting Lag

Due to the large number of studies in this area across the world, approximately 126 independent variables have been examined (Durand 2019). However, the independent variables can be summarised using some characteristics. For example, company attributes, auditor attributes, engagement attributes, economic, politic, and regulatory attributes (Abdelrazik 2017). Abdelrazik (2017) and Abernathy et al. (2017) explained that the client's characteristics include size, risk, complexity, profitability, financial condition, industry sector, corporate governance and ownership variables. The auditor's attributes according to Abdelrazik (2017) and Abernathy et al. (2017) encompassed the audit tenure, audit process, audit opinion, audit firm's size, auditor specialization, audit partners, gender, education, experience and location factors.

Similarly to Durand (2019), Habib et al. (2019) conducted a meta-analysis study into determinants of audit report lag. Habib et al. (2019) categorised the variables of audit report lag as follows: (1) clients' characteristics, (2) corporate governance-related characteristics, and (3) auditor and engagement characteristics. In addition, Habib et al. (2019) also made recommendations for future research into audit report lag area, for example, audit industry specialization, corporate governance and family-controlled firms. However, the meta-analysis study conducted by Habib et al. (2019) did not review any literature examining the relationship between RPTs or other tax-related variables and audit report lag (ARL). These tax-related variables are part of the financial statements required to disclose according to the International Accounting Standard (IAS). Shackelford and Shevlin (2001, p. 322) stated that there has been a lack of tax-related variables researched in the financial accounting field, although they could affect financial accounting decisions in the business. Financial accounting is different from tax accounting in income recognition and other crucial issues; moreover, tax planning often produces and reports lower profit than the real one (Shackelford & Shevlin 2001, p. 327).

Furthermore, Hanlon and Heitzman (2010) argued that, according to Miller and Modigliani, taxes are perceived as a market inefficiency. This viewpoint motivates research into whether taxes affect firm value (for example, if dividend taxes have an impact on estimated returns), company financial policy decisions (for example, whether taxes influence a company's use of leverage), and investor's portfolio decisions (for example, the role of international tax considerations in portfolio allocation). Nonetheless, Slemrod (2004) believed that additional challenges develop in widely held firms due to the split of ownership and control. Risk-neutral shareholders want managers operating on their behalf to focus on profit maximization, which includes pursuing

opportunities to lower tax obligations if the estimated additional gain exceeds the incremental cost. Separating ownership and control might result in corporate tax choices that reflect the manager's private interests.

Related party transactions are often used for minimising tax obligations by making any transactions with the joint ventures, parent companies, subsidiaries, shareholders, or management. IAS 24 (revised 2013) was issued to regulate the related party disclosure on financial statements. The reason for the issuing of IAS 24 (revised 2013) about 'Related Party Disclosure' is to highlight the possibility that the loss or profit on the financial statements could be affected by the existence of the RPTs and the ongoing financial positions derived from the relevant party (IFRS 2017). The empirical evidence in accounting research conducted by Habib and Muhammadi (2018) has proved that the related party transactions increase audit report lag. It indicates that independent auditors are aware of the consequences of the RPTs, which is in line with the purpose of the issuance of IAS 24 (revised 2013) about 'Related Party Disclosure'. Thus, the independent auditors require additional effort to complete the audit, which finally leads to long audit report lag (Habib & Muhammadi 2018).

Another tax-related variable in accounting research is capital structure. Although the capital structure has long been recognized as the leading variable discussed in the finance literature, it is not researched extensively in the financial accounting field[32] (Shackelford & Shevlin 2001). In a meta-analysis study, Durand (2019) and Habib et al. (2019) reviewed several pieces of literature measuring the impact of capital structure on audit report lag. However, neither Durand (2019) nor Habib et al. (2019) reviewed the theoretical background of capital structure studies applying tax perspectives. For example, as stated in Habib et al. (2019), Carslaw and Kaplan (1991) implied that leverage is one of the benchmarks to measure a firm's financial health. Firms with high leverage might face financial stress, which could lead to bankruptcy. However, firms with a high level of debt will have corporate's income tax benefits due to the deductible characteristic of interests paid to creditors and the non-deductible aspect of dividend paid to the stockholders (Graham 2000).

Furthermore, the hypotheses development, particularly for independent variables measured in this study such as audit report lag (ARL), firm size, profitability, related party transactions (RPTs), leverage, audit opinion, and tax audit, will also be described based on the prior studies. The literature review is also purposed to achieve the first research aim: 'To investigate the impact of the audit report lag, firm size, profitability, related party transactions, leverage, audit opinion, and

[32] Capital structure is discussed widely in financial literature. However, there has been a lack of research investigating capital structure in relation with tax perspective in the financial accounting field.

the tax audit on the financial reporting lag of the whole business sectors of the listed companies in Indonesia'. The research studies on audit report lag will also be discussed in this part together with the research into determinants of financial reporting lag because the ARL is the most important single determinant affecting on the reporting timeliness (Abernathy et al. 2017; Chan, Luo & Mo 2016; Eghlaiow, S, Wickremasinghe, G & Sofocleous, S 2012; Givoly & Palmon 1982; Owusu-Ansah 2000).

2.4.1 Prior Studies into Determinants of Financial Reporting Lag in Advanced Markets

Researchers have examined in prior studies several independent variables into audit report lag and financial reporting lag in developed regions. Firm size is predicted to negatively impact financial reporting lag due to the ability of large firms to appoint big audit companies and complete the audit in time (Khoufi & Khoufi 2018). The bigger or the more prominent the company, the higher priority the audit will be, to reduce the financial reporting lag (Gilling 1977). The negative correlation between the reporting lag and firm size was found by Dyer and McHugh (1975), Chambers and Penman (1984), and Bamber, Bamber and Schoderbek (1993). Similarly, Carslaw and Kaplan (1991) and Khoufi and Khoufi (2018) revealed that firm size significantly affects audit report lag or audit delay. On the contrary, Ashton et al. (1987) uncovered that firm size is positively associated with audit delay for non-public firms; meanwhile, Abdelrazik (2017) found that firm size does not affect audit report lag.

Profitability is also expected to have a negative relationship with financial reporting lag because profitability is one of the measurements used in a company's evaluation of its operational performance (Abdelrazik 2017, p. 56). Loss-making firms (bad news) tend to delay their reporting timeliness while profit-making firms (good news) tend to publish their annual financial statements early, indicating that the auditors carefully increase the audit procedures for loss-making firms. Khoufi and Khoufi (2018) revealed that profitability was found to have a significant relationship with audit delay, in line with the finding of Ashton et al. (1989), Ashton et al. (1987), Carslaw and Kaplan (1991), and Bamber, Bamber and Schoderbek (1993). Meanwhile, Abdelrazik (2017) found a negative relationship between the profitability and audit report lag for UK's as well as Egypt's data, although it is insignificant. However, Dyer and McHugh (1975) revealed no relationship between reporting lag and profitability.

Leverage or debt to asset ratio might depict a firm's financial performance, and if that company were to fail, it impacts the audit delay (Carslaw & Kaplan 1991). According to Abdelrazik (2017), listed companies in the UK with higher leverage have shorter ARL than the firms with lower leverage. The finding of Abdelrazik (2017) is contradictive with the discovery of Abidin and Ahmad-Zaluki (2012), Al-Ajmi (2008) in developing countries and Carslaw and Kaplan (1991) in developed countries for a single year; however, it supports the finding of Al-Ghanem and

Hegazy (2011) in emerging markets discovering that an audit delay is negatively associated with leverage. Nonetheless, no studies in developed countries have employed a tax perspective to examine the relationship between leverage and financial reporting lag. Those studies are mostly based on the financial risk perspective. According to the tax perspective, highly-debt firms could have tax benefits; meanwhile, based on financial risk perspective, firms with high level of debt could face bankruptcy risk if they failed to pay the debt.

The qualified audit opinion is expected to increase financial reporting timeliness because firms with many qualifications concerning audit opinion need a long time to complete the audit (Bamber, Bamber & Schoderbek 1993). Using pooled ordinary least squares (OLS), Khoufi and Khoufi (2018) found that audit delay is increased by auditor's opinion with qualifications, which supports the finding of Soltani (2002). Soltani (2002) found that listed companies in France with qualified audit opinions tend to publish their financial reports later than those with unqualified audit opinions. Ashton et al. (1987) showed the positive association between the type of audit opinion and audit delay. Bamber, Bamber and Schoderbek (1993) also revealed a positive association between qualified audit opinions and audit report lag. Although Baldacchino Peter (2016) revealed 7 of 12 interviewees agreeing on the positive relationship between qualified audit opinion, one of 12 participants disagree with their relationship. They contend that instead of qualifying the audit opinion, the company and the auditor will have benefit by extending audit report lag. Also, Baldacchino Peter (2016) uncovered that 3 of 12 interviewees disagree with the positive relationship between qualified audit opinion and audit report lag. However, they state that in some cases, the auditor must extend the lag, rather than decreasing the company's trust by presenting the qualified audit opinion in the financial reports.

In France, Khoufi and Khoufi (2018) used panel data in their study resulting in the value of adjusted R^2 of 22 per cent for the whole variation in audit delay. The adjusted R^2 reflects the goodness of the fit of the fitted sample regression line, which explains the percentage of the total variation in the dependent variable defined by the single explanatory variable (Gujarati & Porter 2010, p. 102). Using 50 firms' data from 2010 to 2014 (250 firm-year observations), Khoufi and Khoufi (2018) also found a significant decline of audit report delay from 90 days in 2010 to 76 days in 2014, although the legal requirement for the audit delay in French is 180 days. Thus, the finding was as a recommendation for the regulatory board in French to amend the regulation for audit delay, reducing from 180 days to around 90 days. Khoufi and Khoufi (2018) also revealed that profitability and firm size are statistically significant in predicting audit delay at 1 per cent level, and statistically significant at 5 per cent level for qualified audit opinion. On the contrary, leverage (debt to equity ratio) has no relationship with the audit report lag.

Notwithstanding, using cross-sectional data analysis, Bamber, Bamber and Schoderbek (1993) provided a better model than that made by Khoufi and Khoufi (2018). The study of Bamber, Bamber and Schoderbek (1993) created the specified model with the very high value of R^2, accounting for 43 per cent, which is even far higher than that specified by Ashton et al. (1989), only 13 per cent maximum of the R^2 value. Bamber, Bamber and Schoderbek (1993) used the sample data of the US listed firms from 1983 to 1985. The study employs 972 listed companies in the USA from 7 business sectors (banks, utilities, technical instruments, automotive, electrical, building, chemicals). The mean audit report lag was around 40 days. For each independent variable, the study finds that net losses are uncovered to result in a positive association with ARL. Loss-making firms experience longer audit report lag than profit-making firms. The bigger the financial losses, the longer the audit report is completed.

In Malta, Baldacchino Peter (2016) used both primary and secondary data to research determinants of audit report lag. Primary data were collected by 12 semi-structured interviews with statutory auditors. Meanwhile, the secondary data were collected from financial statements of public and private firms, resulting in a sample of 373 firms from 2006 to 2010 by using simple random sampling. The ANCOVA linear regression model was used to analyse quantitative data. The study finds that the average ARL was 223 days, with the standard deviation of 139 days. This mean of ARL was much higher than that resulted by other studies such as 81.5 days in Spain by Bonsón-Ponte, Escobar-Rodríguez and Borrero-Domínguez (2008), 98 days also in Spain by Leventis, Weetman and Caramanis (2005), and 62.5 days in America by Ashton et al. (1987). Further, qualified audit opinions are found to have a positive relationship with ARL. Financial service firms with profits and big firms experience short ARL. Further, there have been many authors examining the impact of client's and auditor's characteristics on financial reporting lag and audit report lag. The summary of prior studies in developed regions is presented in Table 1.

Table 1 The summary of prior studies in financial reporting lag and audit report lag for the company attributes and the audit attributes in developed countries

Authors (year)	Country	Independent Variables	Dependent Variables	Data and Analysis	Main Discoveries
Khoufi and Khoufi (2018)	France	Profitability, the month of year-end, firm size, the type of audit opinion, audit firm.	Audit report delay	Secondary data of 250 firm-year observation of French listed companies from 2010-2014. Pooled ordinary least square regression was used to analyse the data. The adjusted R^2 is 22 per cent for overall variation in audit delay described by independent variables.	Audit delay was revealed to have a statistically significant relationship with profitability, the month of year-end, firm size, the type of audit opinion, audit firm. A qualified audit opinion increases the audit report delay. Reporting delivery time was declined to 76 days in 2014 from 90 days in 2010. The legal deadline to publish was 180 days since the fiscal year-end. The study suggested decreasing the deadline requirement by the regulatory body.
Baldacchino Peter (2016)	Malta	Type of industry, extraordinary items, profitability, type of audit opinion, size of the audit firm, firm size.	Audit report lag (ARL)	Secondary and Primary (Interview). The sample data were 373 firms in Malta from 2006 to 2010 for secondary data and 12 semi-structured interviews for primary data. Mixed methods were conducted. The ANCOVA linear regression model was used to analyse quantitative data.	Extraordinary items and qualified audit opinions have a positive relationship with ARL, making ARL longer. Meanwhile, big audit firms, financial profits in financial service firms, and big firms experience short ARL. The interview result is in line with the secondary data finding regarding extraordinary items. The usefulness and relevance of ARL are various among interviewees' perceptions. The need for collaboration between clients and external auditors to reduce ARL. The average of ARL was 223 days, with the standard deviation of 139 days.
Tina and Marko (2014)	Croatia	Firm size, audit opinion, profitability, leverage, audit committee, type of audit firm, audit effort, absolute level of total accrual.	Audit delay	Secondary data of 281 firm-year observations were collected from the Croatian listed firms from 2008 to 2011. Pooled OLS regression was used to analyse the data, resulting in the value of R^2 of 17 per cent.	Leverage and profitability are statistically significant determinants of audit delay for listed firms in Croatia. Mean audit delay was 106 days, with a minimum of 4 days and maximum of 208 days.
Hitz, Löw and Solka (2013)	Germany	Accounting complexity, auditor size, adoption of IFRS, return on equity	Audit delay	OLS regression is used to analyse the data. Secondary data were collected from 269 listed firms at Frankfurt Stock Exchange.	The adjusted R^2 is 34,13 per cent. Leverage increases audit delay in model 5 but insignificant in model 3. Market capitalisation reduces audit delay significantly in model 4 and model 5. ROE reduces audit delay significantly in model 3 but insignificant in model 5.

Authors (year)	Country	Independent Variables	Dependent Variables	Data and Analysis	Main Discoveries
		(ROE), firm size (market capitalization), leverage, firm performance, cross-listed firm, profitability.			
Bonsón-Ponte, Escobar-Rodríguez and Borrero-Domínguez (2008)	Spain	Regulation changes, the type of audit opinion, auditor, firm size, regulation pressure.	Audit delay	Secondary data from listed firms in Spain from 2002 to 2005, comprising 105 firms. Panel or pooled data analytical regression was conducted, resulting in the R^2 and adjusted R^2 were 20.03 per cent and 19.02 per cent, respectively.	Firms with regulatory pressure have shorter audit delays than those without regulatory pressure in particular sectors. Big firms experience shorter audit delays than small firms. The mean of audit delay for all samples of all business sectors was 81.5 days, comprising a minimum of 16 days and a maximum of 163 days.
Owusu-Ansah and Leventis (2006)	Greece	Proportion of equity shares indirectly or directly controlled by insiders, number of remarks in audit report, type of auditor, industry type, leverage, firm size.	Final reporting lead time (FRLT)	Secondary data of 294 listed firms at Athens Stock Exchange for the year ended 1999. *Cross-sectional regression model* was used to analyse the data. The values of adjusted R^2 range from 31.7 per cent to 39.4 per cent.	The longest FRLT was 183 days; meanwhile, the shortest FRLT was 34 days. The average FRLT was 113 days. Company size has a negative relationship with FRLT. Meanwhile, qualified audit reports experience long FRLT.
Leventis, Weetman and Caramanis (2005)	Spain	Extraordinary items, audit fees, audit opinion, auditor type.	Audit report lag (ARL)	Secondary data of listed firms at the Athens Stock Exchange for the year of 2000, comprising 171 companies. Multiple regression model was used to analyse the data, resulting in the adjusted R^2 of 24.3 per cent.	Uncertainty of audit opinion or many remarks, extraordinary items are associated with longer ARL. Premium fees and internationally affiliated auditors are associated with shorter ARL. The mean of ARL was 98 days. The legal requirement to publish was 160 days since the end of the firms' fiscal year.

Authors (year)	Country	Independent Variables	Dependent Variables	Data and Analysis	Main Discoveries
Soltani (2002)	France	The type of audit opinion, parent firms, subsidiary firms.	Reporting delay	Secondary data of listed firms in France from 1986 to 1995, consisting of 5000 yearly reports. The trend in reporting timeliness, the relationship between the predictors and reporting timeliness, and the type of audit were analysed for 10 years periods.	Big firms experience shorter reporting delays due to their access to more resources. The qualified audit opinion increases the reporting delay.
Bamber, Bamber and Schoderbek (1993)	America	Companies number of business lines (audit complexity or audit risk), firm financial condition, ownership concentration.	Earnings announcement lag, audit report lag (ARL).	Secondary data of nine hundred seventy-two firm-year observations from 1983 to 1985 in seven industries collected from Compustat quarterly data. Cross-sectional data analysis was performed, resulting in a considerably high-value R^2 of 43 per cent.	Qualified audit opinion and net losses increase the ARL. A higher audit structure is associated with longer ARL. However, accounting firms with great structure react faster toward unexpected issues. The mean value of earnings announcement lag was 40 days.
Carslaw and Kaplan (1991)	New Zealand	Leverage, firm ownership, firm year-end, auditor, audit opinion, extraordinary items, profitability, industry, firm size.	Audit delay	Secondary data of listed firm at New Zealand Stock Exchange consisting of 206 firms in 1988 and 245 firms in 1987. The regression models employed provides the relatively low values of adjusted R^2.	Leverage has a significant relationship with audit delay for a single year. Firms with financial losses experience longer audit delay than those with financial profits. Also, big firms tend to experience shorter audit delays than small firms due to reasonable internal control, making it easy for an independent auditor to conduct the audit.
Carslaw and Kaplan (1991)	New Zealand	Leverage, firm ownership, firm year-end, auditor, audit opinion, extraordinary items, profitability, industry, firm size.	Audit delay	Secondary data of listed firm at New Zealand Stock Exchange consisting of 206 firms in 1988 and 245 firms in 1987. The regression models employed provides the relatively low values of adjusted R^2.	Leverage has a significant relationship with audit delay for a single year. Firms with financial losses experience longer audit delay than those with financial profits. Also, big firms tend to experience shorter audit delays than small firms due to reasonable internal control, making it easy for an independent auditor to conduct the audit.
Ashton et al. (1989)	Canada	Firm year-end, extraordinary items, profitability (loss or	Audit delay	Secondary data of four hundred sixty-five listed firms from the Toronto Stock Exchange from 1977 to 1982. The proportion of variability in audit delay explained by	Due to the relatively low of the explanatory power of variables in the specified model, it is suggested that predictors outside the model contribute significantly to the audit delay.

Authors (year)	Country	Independent Variables	Dependent Variables	Data and Analysis	Main Discoveries
		income), industry, auditor size, firm size.		independent variables was relatively low, although some predictors measured in the model are statistically significant.	
Atiase, Bamber and Tse (1989)	America	Firm size, type of news, information content.	Financial reporting delay	Secondary data of 8,320 earnings announcements from listed firms in America for the periods of 1975-1984. The multiple regression model was used to examine the data.	Big firms tend to publish their earnings earlier than small firms. However, the stock market reactions of big firms tend to be lower due to the size effect. Inversely, although small firms delay their earnings announcements, the stock market reactions are high because of the size effect. Longer delays are also related to lower stock market reactions if the company size is continuously held. Their relationship is strengthened when the bad news appears in the earnings announcement.
Ashton et al. (1987)	America	The interactions between auditor and client, auditor characteristics, client characteristics.	Audit delay	Primary data of 488 questioners were collected from managing partners at Peat, Marwick, Mitchel & Co, America. The OLS regression was used to analyse the cross-sectional data, resulting in the adjusted R^2 of 26.5 per cent.	A positive association between qualified audit opinion and audit delay for industrial firms was found. Firm size is negatively related to audit delay for public firm; however, it is positively associated to audit delay for private firm. Private firms experience longer audit delays than public firms. Also, timing factors, internal control, and some firms' performance are associated with audit delay. The mean of audit delay was 62.5 days.
Chambers and Penman (1984)	America	Information content, firm size.	Earning reporting lag	Secondary data of yearly and interim earnings announcements of 100 listed companies (2456 earnings announcements) from 1975 to 1976. Pooled time-series and cross-sectional regression of the T-test were used to analyse the data.	Earning reporting lag has a negative relationship with firm size. Stock market reactions to early reporting are higher than those to late reporting. In other words, when the reports are released earlier than forecasted, they have a greater influence and more significant impact on stock prices due to the useful information contained in the early reporting.
Givoly and Palmon (1982)	America	Firm characteristics, information content, trends of industry reporting.	Early reporting, late reporting	Secondary data of 210 industrial firms from 25 industries from 1960 to 1975. Least square of cross-sectional data regression was employed, resulting in the adjusted R^2 for reporting lag of firm attributes about 26 per cent and 19 per cent in 1973 and 1974, respectively.	Reporting lag has a significant relationship with the presence of bad news, industry trends, and firm size. Reporting delay seems to be reduced for the American firms, which contradicts to some previous findings. The median reporting delay was 37 days in 1974. The required publication by rule was 90 days since the fiscal year-end.

Authors (year)	Country	Independent Variables	Dependent Variables	Data and Analysis	Main Discoveries
				Surprisingly, the R^2 of the total sample was 88 per cent.	
Davies and Whittred (1980)	Australia	Profitability, the month of fiscal year-end, firm size.	Total lag, auditor signature lag, preliminary lag	Unrestricted random sample of 100 firms taken from Australian Associated Stock Exchange on 31 December 1972 and 31 December 1977 to specify time lag. Sample from Sydney Stock Exchange from 1972 to 1977 applying a random sample of 100 listed firms. T-test was used to analyse the data.	Only one variable shows a significant association with total reporting lag. The size variable is determinant of total reporting lag. Small firms or big firms experience more significant timely reporting than moderate firms. Meanwhile, profitability and financial year-end were not significantly associated with total reporting lag.
Whittred (1980)	Australia	Audit opinion	Total lag, auditors' signature lag, preliminary lag.	Listed companies at the Sydney Stock Exchange, consisting of 245 firms.	Firms with qualified audit opinions at first time experience higher reporting delays because of the discussion or negotiation between the auditor and the client to modify audit opinion. The average of reporting lag was 62 days.
Gilling (1977)	New Zealand	Firm Characteristics, the size of the auditor.	Reporting lag	Data consists of 187 New Zealand public firms in 1976.	Client attributes like the foremost and most prominent firm are prioritized to be audited early. Big accounting firms experience audit process as timely as the schedule. The average reporting lag was between 53 and 70 days.
Courtis (1976)	New Zealand	Industry, company attributes, profitability.	Reporting lag	Data consists of 204 public firms in 1974.	The particular industry has longer report lag than other types of industry. Reporting lag and profitability was revealed to have an inverse relationship. Nonetheless, there was no significant relationship between reporting lag and firm attributes like the length of the annual report, the total of stockholders, firm age, and firm size. The average financial reporting lag was 83 days.
Dyer and McHugh (1975)	Australia	Profitability, the month of fiscal year-end, firm size.	Total lag (comprising auditor signature lag and preliminary lag)	Data of time lag were taken from the sample at Sydney Stock Exchange from 1965 to 1971 using a random sample of 120 listed firms and primary data one hundred eighteen questioners were spread with a 45 per cent response rate. Primary data were collected from 118	No relationship between reporting lag (total lag) and profitability was found. The total delay seems to be persistent for the whole sample period. Big firms experience short reporting lag. Firms with year-end on 30th June tend to have longer reporting lag than those with year-end in non-30th June. The average of the total delay was 118 days for 1971 from respondents'

Authors (year)	Country	Independent Variables	Dependent Variables	Data and Analysis	Main Discoveries
				questionnaire distributed to 120 firms and auditing firms of those companies. T-test was used to analyse the data.	data. Also, the average reporting lag from secondary data was between 82 and 92 days.

2.4.2 Prior Studies into Determinants of Financial Reporting Lag in Emerging Markets

Like studies in advanced markets, most listed firms in developing countries have been subjected to studies in financial reporting lag or audit report lag. In Jordan, Daoud et al. (2014) employed 114 listed firms at the Amman Stock Exchange in 2012. Consistent with the research in developed countries like Ashton et al. (1987), Jordanian listed firms with qualified audit opinions experience audit report lag longer than those with an unqualified audit opinion (Daoud et al. 2014). Daoud et al. (2014) also revealed that firms with excellent performance (good news) or profits experience shorter audit report lag than those with bad news or financial losses. The study finds that the average audit delay was 69 days, with a maximum of 271 days and a minimum of 14 days. The multiple regression analysis was used for 114 listed firms at Amman Stock Exchange, resulting in 18.4 per cent of the adjusted R^2. The Jordan Security Commission requires a listed firm to publish its annual financial reports within 3 months or 90 days from the end of a company's financial year. This study was concerned by the reality that the timeliness of Jordanian listed firms was below standard.

Further, Jaggi and Tsui (1999) revealed a significant and negative relationship between the audit report lag and the qualified audit opinion, which is not in line with the majority of studies. Jaggi and Tsui (1999, p. 27) argued that the contradictory finding regarding the relationship between qualified audit opinion and audit report lag is because of the few firms with qualified audit opinion in the sample. Also, Jaggi and Tsui (1999, p. 27) stated that the plausible reason for a qualified audit opinion to shorten audit report lag is the large number of qualified audit opinion. Thus, the company's management decided not to negotiate for modifying the qualified audit opinion which takes longer for audit process to complete. Using a data of 393 companies from 1991 to 1993, the explanatory power resulted in the study provides the value of adjusted R^2 of 14.16 per cent, which is relatively low. The low value of adjusted R^2 in the study of Jaggi and Tsui (1999) indicates the total variation in audit report lag explained by independent variables outside the model is much higher.

Al-Ghanem and Hegazy (2011) examined variables that influence audit delay. In 2017 177 firms and in 2006 149 listed firms in Kuwait were chosen, and cross-sectional data analysis using yearly comparison was used in the study. The findings reveal that leverage is found to have a negative association with the audit report delay in 2006. The research also shows that firm size is the only predictor that has a negative association with audit delays for all observed periods, which also supports the finding of Carslaw and Kaplan (1991) who found that firm size is negatively associated with audit delay. Using cross-sectional data analysis, Al-Ghanem and Hegazy (2011) found a relatively high adjusted R^2 of 39.2 per cent and 34.7 per cent in 2006 and 2007, respectively. The average audit delay was 62 days in 2007 and 57 days in 2006. Kuwait's

authority mandates the listed firms to publish their annual reports within 90 days after the closing period.

Pardede (2016) researched the relationship between financial reporting timeliness and factors unique to Indonesia, including tax audit as an independent variable. His study uses the top 150 listed companies in the IDX from various industry sectors from 2010 to 2014. Pardede (2016) found that profitability and the type of audit firm are associated with financial reporting timeliness. Pardede (2016) stated that his study provides a theoretical contribution by employing agency theory for the financial reporting timeliness context. Furthermore, although the coefficient of tax audit as independent variable is negative as the expected direction, the analysis of the tax audit conducted by Pardede (2016) did not result in a significant correlation with the financial reporting timeliness. It indicates that firms audited by the tax authority do not delay their financial reporting timeliness. Therefore, the analysis result disproved the hypothesis. His study used a dummy variable for tax audit. Firms exposed to tax audit are coded '1', and firms not exposed to tax audit are coded '0'. In addition, Pardede (2016) found that firm size, leverage, and audit opinion are not the significant predictors for financial reporting timeliness.

Still in Indonesia, Habib and Muhammadi (2018) examined the relationship between political connection and audit report lag, which included RPTs. Habib and Muhammadi (2018) revealed firms with RPTs tend to have longer audit report lag than those without RPTs. Habib and Muhammadi (2018) claimed that the coefficients of abnormal RPTs are positive significant at a 10 per cent level for both credit and sales abnormal RPTs, presenting p-value accounting for 0.054 and 0.078, respectively. This finding indicates that independent auditors are aware of the consequence of RPTs, which can be used as a tool for minimising tax payments. Therefore, auditors exert additional effort to carefully investigate the RPTs, leading a longer time to complete the audit. The overall explanatory power resulted in the study is relatively high, ranging from 17 per cent to 33 per cent.

On the contrary, Gordon and Henry (2005) argued that not all RPTs are intended to crate earnings management. Instead, they are sometimes intended to create the economic demand to make the company's business operation effective by providing alternative way of incentives or providing expertise and in-depth skills or knowledge. Related party transactions could also be aimed at increasing a company's value and decreasing business costs (Chen, Wang & Li 2012). In other words, the statement of Weygandt, Kimmel and Kieso (2009, p. 315) regarding the purpose of RPTs to increase the returns of the whole firm groups could be translated as increasing company's value or decreasing business costs, and it is not always be translated into conducting tax avoidance, decreasing tax payment, or saving the tax payment in their own pocket. If this is the case, an independent auditor does not need to examine any more RPTs.

In Bahrain, Al-Ajmi (2008) presented determinants of annual financial reports timeliness. This study uses 231 firms-year Bahrain Stock Exchange with unbalanced panel data analysis for all types of industries, including the financial sector. Leverage, profitability and firm size are revealed to be the determinants of yearly financial reporting timeliness by Al-Ajmi (2008). The average reporting lag was 60.5 days with a minimum delay of 8 days, and a maximum lag was 161 days, exceeding the legal reporting lag of 90 days. The unbalanced panel of yearly financial reports, consisting of 231 firm-year observations, were examined in the study. Meanwhile, the fixed effect model presents a high level of adjusted R^2 ranging from 42.15 per cent to 45.02 per cent for the audit lag period and from 43.90 per cent to 45.01 per cent for an interim period.

In Zimbabwe, Owusu-Ansah (2000) investigated the relationship between a company's attributes and financial reporting timeliness using two-stage least squares for analysing 47 non-financial firms at the Zimbabwe Stock Exchange. Descriptive evidence implies that 98 per cent of listed firms in Zimbabwe timely report their financial statements on time thus complying with the regulatory deadline. Regression analysis results in a statistically significant inverse association between financial reporting lags and independent variables like profitability and company size. It indicates that companies with many assets and high profit tend to have shorter financial reporting lags than those with a small number of assets and low gain. Large firms tend to have excellent internal control, current information technology, and a competent audit committee, leading the auditors to not spend much time conducting the public audit.

Further, consistent with the finding of Courtis (1976), Owusu-Ansah (2000) also provided empirical evidence that profitable firms with excellent performance or good news experience shorter financial reporting lags than those with bad performance (loss-making firms) or bad news. Moreover, highly-geared firms conduct timely financial reporting. Owusu-Ansah (2000) also discovered that audit report lead time is statistically significant related to financial reporting timeliness (pre-financial reporting lags), which supports the finding of Givoly and Palmon (1982) who stated that audit report lag is the single most important determinants of financial reporting lag (earnings announcement timeliness). The legal deadline to publish annual reports was 160 days after the financial year-end. The average audit report lag when the auditor takes time to certify the account was 62 days since a firm's financial year-end, which is similar to the findings of Al-Ajmi (2008), 60.5 days.

However, Hashim, Hashim and Jambari (2013) found contradictory findings to the majority of prior research. They revealed that profitability proxied by return on equity (ROE) has no statistically significant association with financial reporting timeliness although it has the same coefficient direction (negative) as that of the research of Owusu-Ansah (2000). Also, firm size

proxied by the logarithm of total assets is found to have a statistically significant relationship with financial reporting lead time with positive direction, which contradicts with most prior studies. Hashim, Hashim and Jambari (2013) argued that big companies require more time in processing independent audit because they have many stocks to be verified. Moreover, leverage was found to have no significant relationship with financial reporting lead time although the coefficient is on positive sign, which is the same direction with prior studies by Owusu-Ansah (2000) and Carslaw and Kaplan (1991). The summary of prior studies of reporting lag and audit report lag for company's and auditor's attributes in developing regions is presented in Table 2.

Table 2 The summary of prior studies in financial reporting lag and audit report lag for the company attributes and the audit attributes in developing countries

Authors (year)	Country	Independent Variables	Dependent Variables	Data and Analysis	Main Discoveries
Rahmawati (2018)	Indonesia	Financial reporting timeliness, accounting complexity, capital structure, profitability, audit opinion, auditor size (big four/non-big four accounting firm, earnings quality, and firm size.	Information content, financial reporting timeliness	Secondary data of 434 firm-year observations at Indonesia Stock Exchange from 2003 to 2008. The panel data regression was used to analyse the data, providing the adjusted R^2 ranging from 11.10 per cent to 13.34 per cent for determinants of financial reporting timeliness.	Accounting complexity, capital structure, and profitability do not show a statistically significant association with financial reporting timeliness. Significant predictors for financial reporting timeliness are the type of audit opinion, auditor size (big four/non-big four accounting firm), earning quality, firm size. Two hundred thirteen firms or 49 per cent of the sample reported their annual financial reports lately beyond the regulatory deadline, 90 days, although 50 per cent of the sample, 221 firms reported their financial statements around two months since the fiscal year-end. The average reporting lag was 97 days, with a maximum of 314 days and a minimum of 28 days. The study claimed that the average reporting lag exceeded beyond the 90 days of the legal deadline. The examination failed to provide the evidence supporting the association between information content and financial reporting timeliness.
Habib and Muhammadi (2018)	Indonesia	Political connection, related party transactions,	Audit report lag (ARL)	Secondary data of 2,296 firm-year observations excluding financial companies at the IDX from 2007 to 2013. Ordinary least square regression to analyse data collected from the IDX. The explanatory powers were spanned from 17 per cent to 33 per cent.	Politically connected firms are not associated with the audit report lag. Meanwhile, related party transactions increase audit report lag, indicating that auditors are aware of the effect of RPTs. The average ARL was 78 days, with a standard deviation of 28 days.
Ahmed Mohammed, Che-Ahmad and Malek (2018)	Nigeria	Shareholders as the audit committee, two characteristics of audit quality, return on asset, firm growth, block holder, shareholder financial expert, type of auditor	Financial reporting lag	Secondary data. Quantile regression and panel corrected standards errors were used for analysing data at the Nigerian Stock Exchange from 2011-2015. Quantile regression and panel corrected standard errors were used to analyse the data.	A significant and negative association between return on asset, firm growth, block holder, shareholder audit committee chair, shareholder financial expert, and financial reporting lag. Big audit firms can conduct an audit period shorter than non-big audit firms, and shareholders can improve reporting timeliness. The mean value of financial reporting lag was 95 days, with a minimum of 0 days and a maximum of 455 days. The required deadline by law to publish was 90 days.

Authors (year)	Country	Independent Variables	Dependent Variables	Data and Analysis	Main Discoveries
		(big/non-big audit firms).			
Rusmin and Evans (2017)	Indonesia	Family ownership, industry sectors, financial performance, number of subsidiaries, industry classification, auditors' business risk, firm profitability, auditing complexity, auditor size (big four/non-big four audit firm), industry-specialist auditors.	Audit report lag (ARL)	Secondary data of listed manufacturing firms from IDX from 2010 to 2011. Multiple regression and ordinary least square were used to analyse the data, providing the adjusted R^2 ranging from 19.9 per cent to 24.9 per cent.	Family ownership and low-profile industry sectors accelerate audit report timeliness. Firms with a massive number of subsidiaries and firms with poor financial performance tend to have longer reporting delays. The ARL is found to have a significant association with industry classification, auditors' business risk, firm profitability, auditing complexity. Big four accounting firms conduct audits faster than non-big four accounting firms. Firms audited by industry-specialist auditors experience shorter audit delay than those audited by non-Industry specialist auditors. The average audit report lag of the sample was 79 days. The required lag to publish was 90 days since the fiscal year-end.
Pardede (2016)	Indonesia	Company post-employment benefit plan, implementation of IFRS adoption, tax audit, profitability, type of auditor (big/non-big four accounting firms).	Financial reporting lag	Secondary data of 114 listed firms at the IDX from 2010 to 2014. Logistic (logit) regression was used to analyse the data. The values of R^2 were 12.5 per cent, 10.8 per cent, 11.9 per cent, 15.2 per cent, and 19.7 per cent in 2010, 2011, 2012, 2013, and 2014 consecutively.	Company post-employment benefit plan and the adoption of IFRS are significantly related to financial reporting lag. Firms with post-employment benefit programs and firms with a higher number of IFRS adoption experience longer financial reporting lag. Profitability and the type of auditor are also associated with financial reporting lag. However, the study failed to provide empirical evidence that tax audit is related to financial reporting lag. This study also found that firm size and audit opinion have no significant association with financial reporting timeliness.
Daoud et al. (2014)	Jordan	Audit opinion, profitability, industry	Audit report lag (ARL)	Secondary data of 114 listed firms in Jordan. Adjusted R^2 and R^2 are 18.4 per cent and 22 per cent, respectively.	Jordanian listed firms with qualified audit opinions experience audit report lag longer than those with an unqualified audit opinion. Also, firms with excellent performance (good news) or profits tend to have shorter audit report lag than those

Authors (year)	Country	Independent Variables	Dependent Variables	Data and Analysis	Main Discoveries
		sector, board size, and board independence.			with bad news or financial losses. The study found that the average audit delay was 69 days, with maximum of 271 days and minimum of 14 days. The multiple regression analysis was used for 114 listed firms at Amman Stock Exchange, resulting in 18.4 per cent of the adjusted R^2.
Hashim, Hashim and Jambari (2013)	Malaysia	Size, profit, leverage, industry sector, audit type, and audit duration.	Financial Reporting Lead Time (FRLT)	Secondary data of 200 listed firms at Bursa Malaysia from different sectoral index component. Using stratified random sampling to ensure firms in every sector are selected proportionately. Multiple regression was used to analyse the cross-sectional data.	The value of R^2 is 36 per cent. They revealed that profitability proxied by return on equity (ROE) has no statistically significant association with financial reporting lead time. Also, firm size surrogated by natural logarithm of total assets was found to have statistically significant relationship with financial reporting lead time with positive direction, which was contradictive with most prior studies. Further, leverage was uncovered to have no significant relationship with financial reporting lead time.
Abidin and Ahmad-Zaluki (2012)	Malaysia	Leverage, extraordinary income, qualified audit opinion, type of industry (financial/non-financial), firm size, profitability, type of audit firm (big four/non-big four accounting firm), specialist auditor.	Audit report lag (ARL)	Secondary data of the sample of data was 873 listed firms in Malaysia. Ordinary least square (OLS) regression was used to analyse the data, providing the adjusted R^2 of 18.8 per cent.	Qualified audit opinion, leverage, and extraordinary income have a significant impact on longer ARL. Financial firms, big firms, and profit-making firms are related to shorter ARL. Big four accounting firms perform audits faster than non-big four accounting firms. However, specialist auditors do not impact on ARL. The mean of ARL of the total sample was 101 days. The Malaysian authority mandates listed firms in Malaysia to publish their annual reports within 120 days since the fiscal year-and.
Alkhatib (2012)	Jordan	Leverage, profitability, type of audit firm, firm size.	Audit report timeliness	Secondary data of 137 listed firms in Jordan. Multiple regression model was employed to analyse the data.	Profitability, type of audit firm, firm size has a negative association with audit report timeliness for the service sector, but it is insignificant. However, leverage was the only variable which has a significant relationship with the timeliness of audit report. In comparison, in the industrial sector, leverage, profitability, type of audit firm,

Authors (year)	Country	Independent Variables	Dependent Variables	Data and Analysis	Main Discoveries
					firm size is all negatively associated with the timeliness of audit reports. The mean audit report lag was 40.8 days, with a minimum of 2 days and a maximum of 131 days.
Al-Ghanem and Hegazy (2011)	Kuwait	Liquidity, auditor type, change in earnings per share, leverage, industry classification, firm size,	Audit delay, financial reporting timeliness.	Secondary data of 177 in 2007 and 149 in 2006 listed firms in Kuwait were chosen, and cross-sectional data analysis using year by year comparison is operated in the study. A multiple regression analysis was applied for analysing the data, deriving the adjusted R^2 of 34.7 per cent and 39.2 per cent in 2007 and 2006, respectively.	Leverage and liquidity were found to have a negative association with audit delay in 2006. The type of auditor has a negative relationship with the audit delay in 2007. The study also reveals that firm size is the only predictor that has a negative association with audit delays for all observed periods. The mean of audit delay was 62 days in 2007 and 57 days in 2006. Kuwait's authority obliges listed firms to publish their annual reports within 90 days from the fiscal year-end.
Puat Nelson and Norwahida Shukeri (2011)	Malaysia	Qualification of audit committee members, audit committee meeting, audit committee size, board independence, audit opinion, firm profitability, auditor type.	Audit report timeliness	Secondary data of 703 listed firms in Malaysia, excluding financial companies. Multiple regression analysis was used to analyse the data, leaving the R^2 of 12.9 per cent and adjusted R^2 of 12 per cent.	Qualification of audit committee members, audit committee meetings, board independence, are not related to audit report timeliness. Meanwhile, audit opinion, firm profitability, auditor type, and audit committee size are associated with audit report timeliness. The average audit report delay was 101 days, with a standard deviation of 22.32 days. The Malaysian authority mandates the listed firms in Malaysia to publish their annual reports within 180 days since the fiscal year-end.
Afify (2009)	Egypt	Ownership concentration, the presence of an audit committee, CEO duality, board independence, profitability, industry, firm size.	Audit report lag (ARL)	Secondary data of eighty-five listed firms were collected as sample data from Alexandria Stock Exchange. Multiple regression analysis was used, providing R^2 of 61.2 per cent and the adjusted R^2 of 57.10 per cent.	Control variables, profitability, industry, firm size significantly influences the ARL. Also, the presence of an audit committee, CEO duality, board independence significantly affects the ARL. However, ownership concentration does not significantly impact the ARL. The minimum and maximum of ARL were 19 days and 115 days. Meanwhile, the average ARL was 67.21 per cent, and the standard deviation was 18.66 per cent.

Authors (year)	Country	Independent Variables	Dependent Variables	Data and Analysis	Main Discoveries
Al-Ajmi (2008)	Bahrain	Industry classification, good news, and bad news, corporate governance of the client, auditor type (big four/non-big four), accounting complexity, leverage, profitability, firm size.	Timeliness of annual reports (interim period, audit lag period).	Secondary data of the unbalanced panel of yearly financial reports, consisting of 231 firm-year observations. The fixed firm effect model was used to analyse the unbalanced panel data, presenting the adjusted R^2 ranging from 42.15 to 45.02 per cent for the audit lag period and from 43.90 per cent to 45.01 per cent for an interim period.	Corporate governance proxies were found to be determinants of the period between yearly reporting dates and auditor's signature dates. Leverage, profitability, and firm size were found as determinants of annual reporting timeliness. No evidence was revealed that auditor type and accounting complexity affect the timeliness of yearly reporting. The total audit lag was 48 days, with a minimum of 7 days and a maximum of 154 days. The average interim period was 12.46 days, with one day and 79 days of minimum and maximum, respectively. The average reporting lag was 60.5 days, with a minimum and maximum of 8 days and 161 days consecutively. The legal deadline to publish the annual report was 90 days since the fiscal year-end.
Nor Izah Ku Ismail and Chandler (2004)	Malaysia	Leverage, growth, profitability, firm size	Timeliness of quarterly financial reporting	Secondary data of one hundred seventeen quarterly reports were collected from the Kuala Lumpur Stock Exchange.	One hundred sixteen firms reported their quarterly financial statements within the two months of the allowed reporting deadline. Also, leverage, growth, profitability, and firm size show a significant effect on the timeliness. The reporting lag was between 32 and 64 days. The median and mean were 58 days and 55.7 days, respectively. The legal deadline for the reporting lag was 60 days.
Haw et al. (2003)	China	Audit opinion, earnings surprise	Announcement delay (span between recent and prior reporting lags), reporting lag.	Secondary of 2,921 earnings announcements were collected from 858 Chinese listed firms from 1995 to 1999.	A modified or qualified audit opinion delays earning announcements regardless of negative or positive earnings. The bad news is positively associated with reporting lag.
Owusu-Ansah (2000)	Zimbabwe	Company age, business segments, fiscal year-end, extraordinary items, leverage, profitability, firm size.	Audit reporting lead time (AUDRLT), preliminary earnings	Secondary data of forty-seven non-financial listed firms in Zimbabwe. Two-stage least squares were used to measure the data. This study provided adjusted R^2 of 0.62 for PRERLT (pre-reporting lead time) and 0.16 for sqrt FINRLT (square root final report lead-time). Both PRERLT and sqrt FINRLT was treated as post-AUDRLT in which	Highly-gear firms experience more reporting lag. Timeliness of audit reporting is related to the timeliness of earnings announcements. Also, firm size, profitability, and age are associated with reporting timeliness proxied by preliminary earnings announcement dates. The legal deadline to publish annual reports was 160 days after the fiscal year-end. The average of audit report lag when the auditor takes time to certify the account was 62 days since a firm's fiscal year-end.

Authors (year)	Country	Independent Variables	Dependent Variables	Data and Analysis	Main Discoveries
			reporting lead time.	AUDRLT was included in their model as predictor.	
Jaggi and Tsui (1999)	Hong Kong	Structured audit, financial condition, family ownership.	Audit report lag (ARL)	Secondary data of three hundred ninety-three firms from the Global Vantage, Hong Kong from 1991 to 1993. The adjusted R^2 resulted from analytical regression was 14.6 per cent.	Qualified audit opinion has negative and significant relationship with ARL. The structured audit was found to have a positive relationship with ARL. Big firms experience shorter ARL than small firms. Firms with weak financial situations tend to experience longer ARL than firms with stable economic conditions. Family-controlled firms have shorter ARL, but statistically insignificant. The mean of audit delay for the whole sample was 105.88 days. The legal requirement to publish a financial report was 180 days since the fiscal year-end.
Ng and Tai (1994)	Hong Kong	Subsidiaries' locations, auditor changes, diversification level, audit opinion, auditor size, extraordinary items, classification of the industry, firm year-end, earnings changes, and firm size.	Audit delay	Secondary data of listed firms at the Hong Kong Stock Exchange, comprising 292 firms in 1991 and 260 in 1990. A multiple regression analysis was used, providing the adjusted R^2 was very low for each observed period.	A firm with extraordinary items experiences longer audit delay than firms without extraordinary items. The level of diversification is directly various toward the audit period. Also, big firms tend to have shorter audit delays than small firms.

2.4.3 Research Gaps on Determinants of Financial Reporting Lag

Some variables such as firm size, profitability, leverage, and the type of audit opinion have been widely examined regarding their relationship with financial reporting lags or audit report lags by researchers in both developed and developing countries. However, there has been a lack of research into tax-related variables like RPTs (Habib & Muhammadi 2018), leverage from a tax perspective (Shackelford & Shevlin 2001), tax audit (Pardede 2016), and audit report lag (Owusu-Ansah 2000) as predictors of financial reporting lag in developed and developing countries (Hanlon & Heitzman 2010). This study examines the impact of tax-related variables and audit report lag on financial reporting lag for the first topic due to the lack of research into those variables in this area. Nevertheless, to avoid under-fitting or misspecified models because of missing some essential variables as stated by Gujarati and Porter (2010), this research also includes several of the most researched and critical independent variables of financial reporting lag based on previous literature such as firm size (Al-Ajmi 2008), profitability (Owusu-Ansah 2000), and the type of audit opinion (Owusu-Ansah & Leventis 2006).

In addition, some variables (firms size, profitability, and the type of audit opinion) were found to be inverse to their relationship with financial reporting timeliness between the study of Rahmawati (2013) and Pardede (2016) in the Indonesian context. Thus, those variables are required to be reinvestigated in this study. Further, a prior study conducted by Rahmawati (2013, 2018) into the financial reporting lag in the Indonesian context shows low values of adjusted R^2. The low values of adjusted R^2 reflect more explanatory variables into financial reporting lag outside the specified model in the study. The choice of independent variables could be the reason for the low values of the adjusted R^2. The limitation of the study of Rahmawati (2013, 2018) is that it only used listed manufacturing firms at IDX. Therefore, there is an opportunity to conduct research in this area using the various business sectors of listed firms at IDX including agriculture, mining, property and real estate, infrastructure, utilities, transportation, trading, services, and investment.

2.4.4 Hypothesis Development of Determinants of Financial Reporting Lag

This section will present the development of a hypothesis for some independent variables investigated in this study. The hypotheses in this section are intended to answer research question one (RQ1) as follows: ‘What is the impact of the audit report lag, firm size, profitability, related party transactions, leverage, audit opinion, and the tax audit on the financial reporting lag of the listed companies in Indonesia?’ Research question one aims to achieve the first research objective: ‘To investigate the impact of the audit report lag, firm size, profitability, related party

transactions, leverage, audit opinion, and the tax audit on the financial reporting lag of the listed companies in Indonesia'.

2.4.4.1 Audit Report Lag

Audit Report Lag (ARL) is interpreted as the number of days that elapse between the end of a company's financial year and the date of the audit report (Durand 2019; Krishnan & Yang 2009). Bamber, Bamber and Schoderbek (1993) and Ashton et al. (1987, p. 275) stated that the ARL may impact the timeliness of the annual report's release and this timeliness is related to the market reactions of published financial information. Chan, Luo and Mo (2016), Eghlaiow, S, Wickremasinghe, G and Sofocleous, S (2012), and Abernathy et al. (2017) also argued that the ARL is the most important single determinant affecting on the reporting timeliness. However, researchers have used different approaches to model the determinants of financial reporting lag or financial reporting timeliness, providing the model of financial reporting lag with or without audit report lag as a predictor.

Although some authors contend that the ARL is the most critical determinant of financial reporting timeliness, there has been a lack of research examining the relationship between audit lag and financial reporting lag. Nonetheless, Owusu-Ansah (2000) built a model that covers the ARL as the independent variable. The study of Owusu-Ansah (2000) uncovered that audit report lead time is statistically significant in relation to financial reporting timeliness (pre-financial reporting lags), which supports the finding of Givoly and Palmon (1982) who stated that audit report lag is the single most important determinant of financial reporting lag (earnings announcement timeliness). Further, Durand (2019) also stated that long ARL can delay the revelation of financial information to the markets. This research includes the ARL in the FRL model as a predictor. Therefore, based on the previous literature, the researcher postulates that the ARL has a positive relationship with financial reporting timeliness. The higher the ARL, the longer the financial reporting timeliness or financial reporting lag will be. Thus, referring to research question one (RQ1), the hypothesis for the ARL is as follows:

H_1: Firms that have long audit report lag experience longer financial reporting lag than do the firms that have short audit report lag.

2.4.4.2 Firm Size

Firm size is the most recognized or popular variable discussed in the research of audit delay (Eghlaiow, S, Wickremasinghe, G & Sofocleous, S 2012) or financial reporting lead time (Owusu-Ansah & Leventis 2006). The size of a company has also been associated with high agency costs (Chow 1982). When a company gets bigger, responsibility, control, power, management, and duty must be delegated to many employees, and it needs a more high-quality audit to ensure that the company's business are more transparency. Those conditions occur due

to many outsiders or broadly external interests or huge external stockholders, and to avoid any moral hazard risk and the possibility of opportunistic behaviour. Davies and Whittred (1980, p. 50) stated that to remove the unpredictability of the stock market reactions to the company's performance, the large interests of the outside firms should also reduce the yearly financial reporting timeliness. Davies and Whittred (1980) also argued that firms categorised as large or small tend to publish their annual reports earlier than firms classified as moderately sized.

Using meta-analysis methodology, Durand (2019) found that client size, employing total assets as proxy of firm size, is an essential explanatory variable for the ARL with a strong negative relationship. The negative correlation between the reporting lag and firm size is also found by Dyer and McHugh (1975) for Australian companies and by Chambers and Penman (1984) for North American enterprises. Similarly, Carslaw and Kaplan (1991) and Khoufi and Khoufi (2018) revealed that firm size significantly affects audit report lag or audit delay. On the contrary, Ashton et al. (1987, p. 289) uncovered that firm size is positively associated with audit delay for non-public firms, and Abdelrazik (2017) found that firm size does not affect audit report lag. Meanwhile, Courtis (1976) found that firm size has no significant effect on financial reporting lag for New Zealand firms. Another study also revealed a negative relationship between firm size and reporting timeliness, for example, the access to more resources (Soltani 2002).

In developing countries, prior studies by Alkhatib (2012) for the industrial sector and Abidin and Ahmad-Zaluki (2012) found that firm size is related to audit report timeliness in a negative direction. Similarly, Owusu-Ansah (2000) found that firm size is correlated to financial reporting timeliness, which also supported the finding of the study by Dyer and McHugh (1975) and Chambers and Penman (1984) in developed countries. Further, firm size was also found to have a negative association with audit report lag or audit delay by Al-Ghanem and Hegazy (2011), Jaggi and Tsui (1999), and Ng and Tai (1994). In Bahrain, Al-Ajmi (2008) found that firm size is revealed to be the determinant of yearly financial reporting timeliness.

On the contrary, Pardede (2016) found that firm size is not a significant predictor for financial reporting timeliness, which is consistent with the study of Alkhatib (2012) in the service sector. Alkhatib (2012) found an insignificant association between firm size and audit report timeliness in the service sector. Therefore, although the findings of the relationship between firm size and financial reporting timeliness or audit report lag are various among the authors both in a developed and developing countries, most discoveries claim that firm size is negatively correlated to the audit reporting timeliness. It indicates that most large firms experience shorter audit reporting timeliness than small firms. Thus, the researcher postulates that the bigger the auditee, the shorter the audit report lag, and the quicker the financial reporting timeliness or the financial

reporting lag will be. The hypothesis for the firm size, referring to research question one (RQ1), is as follows:

H_2: Bigger firms experience shorter financial reporting lag than do the smaller firms.

2.4.4.3 Profitability

Operating Returns on Assets (OROA) measures a company's management performance both in controlling expenses and in using a company's resources (assets) to produce sales. OROA also estimates how much profit is generated by the assets funded by all types of investors, such as equity shareholders, preferred shareholders, and debt creditors (Titman, Keown & Martin 2018). Further, based on the Agency Theory, a principal can hire an independent auditor to verify what an agent has done within a company. Profitability is thought to have a negative correlation with financial reporting lag because profitability is one of the measurements used in a company's evaluation of its operational performance (Abdelrazik 2017, p. 56). Loss-making firms (bad news) tend to delay their financial reporting timeliness while profit-making firms (good news) tend to publish their annual financial statements early, indicating that the auditors carefully increase the audit procedures for loss-making firms.

Several authors have investigated the impact of profitability on the financial reporting timeliness and the ARL both in developed and developing regions. Using meta-analysis, Durand (2019) found that profitability is a significant factor in the ARL, particularly for loss-making companies. Similarly to Durand (2019), by applying meta-analysis, Habib et al. (2019) uncovered that profitability reduces ARL. However, in developed countries, Dyer and McHugh (1975) revealed that total reporting lag is no associated with profitability and financial reporting lag time is not significantly associated with profitability. Nonetheless, Abdelrazik (2017) found a negative relationship between the profitability and audit report lag for the UK's as well as Egypt's data, although insignificant. Further, Khoufi and Khoufi (2018), Tina and Marko (2014), Bamber, Bamber and Schoderbek (1993), and Carslaw and Kaplan (1991) also revealed that profitability is found to have a significant inverse relationship with audit delay. Similarly, Courtis (1976) found that profitability is negatively associated with financial reporting lag, and Baldacchino Peter (2016) revealed that profitability reduces ARL for financial service companies.

Some studies in developing countries also present the findings for the profitability variable. Puat Nelson and Norwahida Shukeri (2011) and Rusmin and Evans (2017) revealed that profitability has a significant relationship with the audit report lag. Further, the negative correlation between audit report lag and profitability was found by Daoud et al. (2014) and Abidin and Ahmad-Zaluki (2012). Similarly, profitability was also found by Al-Ajmi (2008) and Nor Izah Ku Ismail and Chandler (2004) to be a significant determinant of financial reporting timeliness. Profit-making firms are frequently considered as good news, and loss-making firms are mostly assumed as bad

news. The presence of good news (bad news) is found by Leventis et al. (2005) to have a negative (positive) relationship with audit report lag. Similarly, Owusu-Ansah (2000) also provided empirical evidence that profitable firms with good financial conditions or good news experience shorter financial reporting lag than those with bad financial conditions or loss-making firms or bad news. Nonetheless, Alkhatib (2012) revealed an insignificant relationship between profitability in the service sectors and audit report timeliness; however, their study finds a significant negative relationship in the manufacturing sectors.

Although the relationship between profitability and financial reporting lag or audit report lag vary among the authors in developed and developing countries, the researcher assumes that most findings reveal that profitability is associated negatively with financial reporting lag or ARL. Firms with higher profits tend to complete and publish audit reports earlier than do the firms with lower profits. Therefore, based on the prior studies, which mostly uncover a negative relationship between the financial reporting's timeliness and the profitability, the researcher hypothesises that the profitability has a negative correlation with the financial reporting lag. The more successful the business, the earlier the yearly audit will be carried out, and the better the report's timeliness will be, leading to a shortening of the financial reporting lag. Therefore, referring to research question one (RQ1), the hypothesis for the profitability is as follows:

H_3: Firms with higher (lower) profitability have shorter (longer) financial reporting lag.

2.4.4.4 Related Party Transactions (RPTs)

Purchasing decisions are one of the agency problems that arise from the contradictory goals between the principals and their company's managers (Jensen & Meckling 1976). The managers, for their interests, could initiate the existence of RPTs. However, none of the prior studies analysed the impact of the RPTs on the financial reporting delay. Based on the managerial accounting perspective, the related party transactions can be used as a tool for minimising tax payments (Weygandt, Kimmel & Kieso 2009, pp. 315-24). Weygandt, Kimmel and Kieso (2009, p. 315) stated that the RPTs are intended to maximize the returns to the whole company. The appropriate disclosure of the RPTs in the financial statements is mandatory, based on the International Financial Reporting Standards (IFRS) supporting the International Accounting Standard Board (IASB) 24 (revised 2013) about 'Related Party Disclosure'. The RPTs are mostly complex, diverse, and carried out between a company and its managers, affiliates, directors, or owners (Habib & Muhammadi 2018).

Habib and Muhammadi (2018) investigated the impact of the RPTs on the ARL. They found that the RPTs have a positive relationship with the ARL, indicating that an independent auditor understands the implication of the RPTs, which exert additional audit effort to carefully examine yearly financial statements, which lead to the long ARL. However, Gordon and Henry (2005)

argued that not all RPTs are intended for profit managements. Instead, their existence is intended to give the economic demand to make the company's business operation effective by providing alternative way of incentives or providing expertise and in-depth skills or knowledge. Related party transactions could also be purposed for enhancing the company's value and decreasing business costs (Chen, Wang & Li 2012). Although there are contradictory arguments regarding the purpose of RPTs, research literature argues that the RPTs are popular for minimising tax payments. Also, Habib and Muhammadi (2018) found that the RPTs have a positive relationship with the ARL. Therefore, the more significant the amount of the RPTs, the longer the auditors take to complete the audit, leading to a longer financial reporting lag. Thus, based on the explanation above and referring to the research question one (RQ1), the hypothesis for this variable is as follows:

H_4: Firms with a higher (lower) number of related party transactions experience longer (shorter) financial reporting lag.

2.4.4.5 Leverage

According to Agency Theory, high monitoring expenses occur in highly leveraged companies (Jensen & Meckling 1976). Carslaw and Kaplan (1991) argued that the debt to asset ratio's proportion might indicate a company's financial health, and if a company were to fail, it affects the audit delay. Some studies have investigated the effect of leverage on audit delay or financial reporting delay both in developed and developing markets using the financial risk perspective. In developed markets, Abdelrazik (2017) found that listed companies in the UK with higher leverage have shorter ARL than firms with lower leverage. Similarly, Tina and Marko (2014) also found that leverage is a statistically significant determinant of audit delay. Carslaw and Kaplan (1991) also uncovered a significant relationship between leverage and audit delay for a single observed period.

In developing markets, Al-Ghanem and Hegazy (2011) found that leverage has an insignificant impact on an audit delay, although Al-Ghanem and Hegazy (2011) uncovered that an audit delay is negatively associated with leverage, for listed companies in Kuwait in 2006. Alkhatib (2012) revealed that leverage has a significant relationship with the timeliness of audit report for both the service sector and the manufacturing sector. Moreover, leverage was found to increase the audit report lag by Abidin and Ahmad-Zaluki (2012) and financial reporting lag by Al-Ajmi (2008). The positive and significant relationship between the ARL and leverage was also uncovered by Durand (2019). Similarly, Owusu-Ansah (2000) provided empirical evidence that highly geared firms experience long financial reporting.

However, all prior studies investigated the impact of leverage based on the financial risk perspective. A high debt structure can be used as a tool for minimising tax payments. Graham

(2000) argued that rising debt on a capital structure can increase the tax benefits. Having high levels of debt can raise interest expenses and reduce corporate income tax payments. Increasing the amount of debt and decreasing the amount of equity on capital structure is called 'thin capitalisation'. The tax savings from debt and increased leverage, which can raise a firm's profits are the example of the agency problems (Butler 1988). This can encourage an independent auditor to carefully investigate a listed company that has a high amount of debt, leading to long audit and reporting timeliness.

Nonetheless, Pardede (2016) found that there is no relationship between leverage and financial reporting timeliness for Indonesian listed firms in various industry sectors. Pardede (2016, p. 205) argued that using debt to fund a company's business operation is common, and the use of debt for a company as a financial instrument is recommended if the company has the capacity to utilise the debt appropriately. In circumstances, debt is required to deal with a company's financial problems in conducting a business. A company which has debt on its capital structure shows that it has a reliable and relevant financial report because reliable financial reports and healthy business conditions are required to obtain the debt from a financial institution. Therefore, the Indonesian listed firms ignore the condition of their capital structures when they publish their annual financial reports.

Although there are some contradictory arguments, most of the literature shows a positive relationship between leverage and financial reporting lag. The higher the level of debt on a firm's capital structure, the higher the risk of tax avoidance by the thin capitalisation mechanism which is bad news. Thus, the researcher postulates that the more significant the amount of debt, the longer the auditors will take to complete the audit, leading to a longer financial reporting lag. Therefore, the hypothesis for the leverage variable referring to the research question one (RQ1) is as follows:

H_5: Firms with higher (lower) debt to equity ratio have longer (shorter) financial reporting lag.

2.4.4.6 Qualified Audit Opinion

The qualified audit opinion is assumed to increase financial reporting timeliness because firms with many qualifications concerning audit opinion need a long time to complete the audit (Bamber, Bamber & Schoderbek 1993, p. 7). Several authors have studied the relationship between the type of audit opinion and audit report lag or financial reporting lag in developed countries. Khoufi and Khoufi (2018), Baldacchino Peter (2016), Leventis, Weetman and Caramanis (2005), and Bamber, Bamber and Schoderbek (1993) found that audit delay or audit report lag is increased by qualified audit opinion. Similarly, Soltani (2002), Owusu-Ansah and Leventis (2006) and Whittred (1980) found that listed companies with qualified audit opinions tend to publish their financial reports later than those with unqualified audit opinions. Ashton et

al. (1987, p. 284) also showed the positive association between the qualified audit opinion and audit delay for industrial firms.

Firms listed in Jordanian Stock Exchange with qualified audit opinions experience an audit report lag longer than those with an unqualified audit opinion (Daoud et al. 2014), consistent with the finding of Ismail, H, Mustapha and Cho (2012) and Abidin and Ahmad-Zaluki (2012). An independent auditor will resist publishing a modification and will expend a long time to address a questioned issue. The different item requires to be resolved through discussion or negotiation between the independent auditor and the client. In the meta-analysis study, Habib et al. (2019) revealed that audit opinion increases the ARL. Similarly, Haw et al. (2003) uncovered that a modified or qualified audit opinion delays earnings announcements regardless of negative or positive earnings. However, Jaggi and Tsui (1999, p. 27) revealed significant and negative association between audit report lag and qualified audit opinion, which is not in line with the majority of studies.

Therefore, since most studies reveal that qualified audit opinion has a positive association with audit report lag or financial reporting lag, the researcher postulates that the qualified audit opinion positively influences the financial reporting timeliness. It suggests that a qualified audit opinion increases the financial reporting lag. The more serious the qualification, the higher the delay will be (Soltani 2002). Therefore, the hypothesis for the qualified audit opinion is as follows:
H_6: Firms receiving qualified audit opinions experience longer financial reporting lag than do the firms receiving a clean audit opinion.

2.4.4.7 Tax Audit

There has been a lack of research into the impact of tax audits as an explanatory variable on financial reporting lag. However, Pardede (2016) investigated the relationship between the tax audit variable and the financial reporting timeliness for listed Indonesian companies for the period from 2010 to 2014. A tax audit is supposed to influence financial reporting timeliness because it takes time and requires a company's attention during the auditing process. Also, a listed company receiving bad news from the tax audit's result in the case of an additional tax obligations and/or penalties may delay its reporting timeliness (Pardede 2016, p. 101). Further, Pardede (2016, p. 102) stated that a tax audit's result that remains in dispute with the tax authorities should be reported in the tax-related contingent liabilities, based on the IAS 12 (revised 2017) about 'Income Taxes', following the IAS 37 (revised 2020) regarding 'Provision, Contingent Liabilities, and Contingent Assets'.

Further, the tax-related contingent liabilities are specific case of contingent losses or the potential liabilities as to the process of a tax audit, appeals, or litigation in which a company may bear

because of the tax audit results (Gleason & Mills 2002). In other words, the tax audit results, which include additional tax obligation and penalty, could be categorised as contingent liabilities. Similar to an extraordinary item, the contingent liabilities require an independent auditor to engage in lengthy negotiations and discussions with the company's management to decide the amount involved and the existence due to the uncertainty in estimating an extraordinary or contingent item (Owusu-Ansah 2000, p. 245). The Agency Theory emphasises that both the tax audit and public audit can solve the agency problems occurred between the principal and the agent. In a public company, stockholders, as the principal, should hire an independent auditor to verify what the company's managers have done to meet the firm's tax obligation.

The researcher aims to reinvestigate the influence of the tax audit variable on the financial reporting timeliness for the period from 2014 to 2017 because the study by Pardede (2016) found no relationship between this variable and financial reporting timeliness. However, Owusu-Ansah (2000, p. 245) argued that companies which have the extraordinary or contingent item need a long time to carefully investigate the extraordinary or contingent accounts, leading to an increase in financial reporting delay. Therefore, the researcher postulates that the tax audit's process and result, reported in the tax-related contingent liabilities, are positively correlated with delays in financial reporting. The more significant the tax audit's effect, the longer the financial reporting lag will be. Thus, the hypothesis for the tax audit variable is as follows:

H_7: Firm with tax audit results experience longer financial reporting lag than do the firms without tax audit results.

2.5 Stock Market Reactions to Financial Reporting Lag

This section presents a literature review of stock market reactions which includes efficient market hypothesis theory, the literature of information content, literature of stock market reactions to financial reporting lag, research gaps, and hypothesis development. The literature review in this section aims to answer research question two (RQ2): 'What is the relationship between financial reporting lag and stock market reactions of listed companies in Indonesia?' And to answer research question three (RQ3): 'Are the stock market reactions asymmetric between timely and late reporting lag of listed companies in Indonesia?' Research questions 2 and 3 are derived from the research aim 2 and research aim 3, which are: 'To analyse the relationship between financial reporting lag and stock market reactions of listed companies in Indonesia' and 'to examine the asymmetry of stock market reactions between timely and late reporting lag of listed companies in Indonesia'.

2.5.1 The Efficient Market Hypothesis

Malkiel and Fama (1970) stated that the security market is universally supposed to be efficient. There are no stockholders who regularly obtain abnormal returns (higher than risk-adjusted or normal returns) in the market efficient hypothesis because the present asset prices reflect all accessible information in the market. Abnormal returns are one of the indicators used to measure the stock market reactions. Strong market reactions to an economic event are indicated by high number of cumulative abnormal returns, which reflect high information content about economic activity. The cumulative abnormal returns are measured by employing the efficient market model pioneered by Fama (1965) who argued that, in an efficient market, the prices fully represent the available information. The prices react spontaneously to new information about whole stocks or an individual stock without any bias. It indicates that the securities markets are efficient in representing information concerning any shares. Therefore, when the news about a security appears, it will quickly spread to the potential and existing investors and will be promptly related to the stock prices (Malkiel & Fama 1970).

Malkiel and Fama (1970) expanded three assumptions of the efficient market hypothesis model based on the type of available information. The first is the weak form of the efficient market hypothesis; the second is the semi-strong form of the efficient market hypothesis, and the third one is the strong form of the efficient market hypothesis. In the weak form of the efficient market hypothesis, present stock prices represent all available information related to the historical stock prices. Meanwhile, the semi-strong form of the efficient market hypothesis assumes that the current stock prices represent all accessible information about the past stock prices and publicly available information such as stock-split, annual earnings or financial reporting lag, mergers, acquisitions, changing board of director or commissioner and so on. Moreover, in the strong form of the efficient market hypothesis, the present stock prices represent all public and private information. The strong form model is measured for the group of investors who monopolise all any information related to the securities. This research will use the semi-strong form of the efficient market hypothesis, which will apply the annual financial reporting and the historical stock prices as the publicly available information.

However, some contradictory arguments exist in the efficient market hypothesis theory. The securities markets are less predictable and more efficient. This conclusion concerning the stock market behaviour is mistaken. Unrealistic investors, sometimes, grasp their business decision, revealing several foreseeable models and pricing asymmetry in the stock markets for some periods. As a result, the stakeholders do not have an opportunity to obtain the information represented in the market prices promptly, which is unable the investors to gain abnormal risk-adjusted returns (Malkiel 2003). Further, in the study of the efficient market hypothesis history, Sewell (2011) reviewed the literature concerning the theory. Sewell (2011) found that only below

half of the reviewed articles encouraging the efficient market hypothesis theory. Meanwhile, the majority of the materials, particularly from the 1980s to 1990s era, criticize the theory (Kothari 2001, p. 107; Sewell 2011). Despite the critics, Malkiel (2005) still uncovered the facts that investors in the USA and overseas, do not outrun their passive index funds. It represents that significant market prices mirror all accessible information, which underpins the efficient market hypothesis.

2.5.2 The literature on Information Content

Information content is defined as the change in the prediction regarding an event result, and the difference in the forecast should affect the change in the responses of decision-makers (Beaver, WH 1968). Chambers and Penman (1984) argued that high cumulative abnormal returns surrounding the announcement day are the barometer to indicate strong market reactions. Strong market reactions with high cumulative abnormal returns mean the information contained in the earnings announcement is beneficial for the investors to make a business decision. Further, Givoly and Palmon (1982) asserted that late financial reporting is less useful for investors than is timely financial reporting. The late publications of yearly financial statements contain less information than those that are published on time. Kothari (2001, p. 116) also emphasised that the level of confidence is also based on whether there are any confounding events (for example, merger and acquisitions or dividend payments) news surrounding the event being examined (for example, earning announcements) and whether the events are scattered throughout the calendar period. If the level of stock prices is various, it means that the earnings announcement conveys information to the markets regarding the future cash flows, timing or amount which amends the prior markets' prior predictions (Kothari 2001, p. 116).

Studies regarding the information content and accounting numbers' behaviour were developed by Fama et al. (1969) for the stock splits, Beaver, WH (1968) for earning announcements and Ball and Brown (1968) for annual financial reporting. Those studies examined whether or not the market could receive information regarding a firm's economic achievement represented by the accounting number. In addition, Kothari (2001, p. 114) stated that studies in information content are based on the three main developments of theory in economics and finance research, which lead to studies including those conducted by Fama et al. (1969), Beaver, WH (1968), and Ball and Brown (1968):

1. The efficient market hypothesis theory (Fama 1965).
2. Capital asset pricing model/CAPM (Sharpe 1964).
3. Positive economic theory (Friedman 1953).

Nonetheless, in this research, the focus will be on the literature of information content regarding the efficient market hypothesis theory. Specifically, Fama et al. (1969) examined whether or not there are abnormal rates of return in a period adjacent to the stock split activity. If there is an abnormal rate of return in that case, Fama et al. (1969) examined to what extent it can be measured by the association between alternatives in other extra crucial factors and the stock splits.

Using 940 splits from January 1927 to December 1959 at New York Stock Exchange (NYSE), Fama et al. (1969) revealed that stock splits are frequently related to the improvement of sizeable dividends. Stock markets also consider and apply the stock splits to re-estimate the outflow of the forecasted profits from the securities. Also, their findings describe that the mean of the market's perceptions toward the information regarding the stock splits is reflected in the stock prices immediately following the day they are revealed at the end of the stock split month. This finding encourages the principle of the efficient market that stock prices quite quickly adapt to the newly available information. The discovery propounds that the stock market merely responds to the splits with dividend involvement. The stock splits only affect the stock price adaptation with respect to the expected amount of upcoming dividend. Therefore, it is recommended to use the stock splits for the stock market's anticipated incomes involving the information of succeeding dividend (Fama et al. 1969).

Beaver, WH (1968) investigated how the common stock markets respond to the information contained in the earnings announcements. The market reactions in the study were measured by the price and volume trends of the common stocks around the announcement day. The study of Beaver, WH (1968) used the data of 143 firms at the NYSE for the periods from 1961 to 1965, resulting in 506 yearly earnings announcements. In the study, Beaver, WH (1968) revealed that there are substantial volume and price responses to the earnings announcements, in which the markets react quickly to the earnings publication and do not react to other factors with respect to the suspension of the published earnings. Additionally, the finding shows that news announcements, which take place before the earnings report, do not entirely anticipate the information contained in the reported earnings. The results of Beaver, WH (1968) also identified that key events viewed by markets to influence the stock prices are related to the reported earnings.

Ball and Brown (1968) measured the influence of information contained in the annual financial statements on stock market reactions. The study was initiated by the assumption that the net income is a particular interest to stockholders. The business decision made by investors is an anticipating characteristic used to measure the external outcome of the usefulness of financial statements, which is represented in the price of common stocks. The value of net income numbers is determined not only by the content of yearly financial statements but also by the timeliness of

the existence of the yearly net income numbers (Ball & Brown 1968, p. 160). Their study analysed data from the NYSE for the period from January 1946 to June 1966, with adjustment of capital changes and dividends. The evidence provides empirical results about the significant use of the content of yearly financial statements for all information regarding an individual company which is accessible over the year. The considerable use of the information contained in the yearly financial statements is reflected in the stock prices. Firms with a rise of earnings are categorised as "good news" experience increased stock prices, which is an advantageous shock to the markets.

Ball and Brown (1968, pp. 161-64) employed the expected and unexpected net income number to measure the information contained in the annual financial reports. The change of the expected income for a company in an observed period is determined using the prediction of the regression from the change of the average market income in an observed period. Meanwhile, the change of the unexpected income is determined by subtracting the change of the actual income with the expected income. Bad news is defined as when the conditional expectation is larger than the actual change of income (that is, the income prediction error is negative). Also, the relationship between stock prices and accounting income numbers is represented by the return on a firm's securities. Ball and Brown (1968) categorised the security returns into two parts. The first one is 'normal return', the return that was predicted, which is measured by the relationship between the market index and the stock returns. The second is 'abnormal returns', measured by the difference between the actual return and the normal return.

However, this study does not adopt the approach of Ball and Brown (1968) in determining the information content in a company's income. This study adopts the approach of Titman, Keown, and Martin (2018) in measuring the profitability of a firm using the percentage of operating income on assets (OROA). This approach is used because OROA estimates a company's management performance both in controlling expenses and in using a company's resources (assets) to produce sales. Also, return on equity (ROE) is used in this study as a proxy for profitability in the robustness test. Return on equity is the percentage of operating income after interest and taxes of a company toward the equity of a company. This proxy has been used in recently by Al-Tahat (2015) and Hitz, Löw and Solka (2013). Nonetheless, the stock market reactions are proxied by abnormal returns as those in the study of Ball and Brown (1968). In this study, the abnormal returns are measured regarding their relationship with financial reporting lag.

MacKinlay (1997) investigated the impact of information contained in the earning announcements on stock market reactions. The study applied 600 event observations which included 20 earning announcements per company and involved 30 companies. The study categorises the companies based on three categories, strong profit firms as good news, normal profit firms as no news, and loss-making firms as bad news. The study found evidence that strong

profit firms have higher cumulative abnormal returns particularly during the event date, and it shows a relatively stable of higher cumulative abnormal returns after the event date during the event window than that of normal profit firms and loss-making firms. The study also describes the negative cumulative abnormal returns for loss-making firms, which is consistent with most prior studies about the information content. The overall study provides evidence that the strong profit firms contain good news so that the stock market reacts positively to the earning announcement. While the loss-making firms contain bad news so that the investors react negatively to the earnings announcement.

2.5.3 The literature of Stock Market Reactions to Financial Reporting

A study into stock market reactions to financial reporting timeliness was developed from the finding of the study conducted by Ball and Brown (1968). Before the release of financial statements, accounting information is already represented in the stock prices. Stock markets will anticipate the published financial statements based on the additional sources of information. Therefore, the financial reporting lag could be associated with the variability of returns (size of information), which are affected by the stock markets' expectations of the published financial statements (Ball & Brown 1968). In other words, additional sources of information will provide the opportunity for investors to obtain more information from published financial statements of different companies if a company has a longer financial reporting lag.

The degree of uncertainty regarding investment decisions expecting the information accommodated in the yearly reports will rise when the postponement of annual financial reporting occurs (Givoly & Palmon 1982, pp. 486-7). The investors will also delay their investment decisions until the earnings announcements are made (Beaver, WH 1968). Thus, the delay of yearly financial reporting could lead to imperfect securities sales or poor purchasing decisions made by the investors. Dyer and McHugh (1975) also argued that the delay of financial reporting timeliness will affect low market reactions or low abnormal returns because the companies that delay their financial reporting timeliness tend to have bad news.

For developed countries, the study was conducted by Zeghal (1984), Kross and Schroeder (1984), Chambers and Penman (1984) in the USA, Givoly and Palmon (1982) in Australia. For developing countries, the study into stock market reactions to financial reporting timeliness was carried out by Haw et al. (2000) in China, Rahmawati (2013), and Rahmawati (2018) in Indonesia. However, there has been no study involving tax-related variables in research examining the stock market reactions to financial reporting timeliness. A study conducted by Habib and Muhammadi (2018) proved that RPTs increase audit report lag. RPTs are notorious for tax avoidance by making any transactions with the joint venture, parent companies, subsidiaries, shareholders, or company's management. Since the related party transactions increase audit report lag, they are

expected to influence financial reporting timeliness. Finally, the related party transactions are presumed to impact the stock market reactions indirectly with the financial reporting lag.

Chambers and Penman (1984) investigated stock market reactions to the timeliness of earnings reports. Their study was motivated by two findings of the study by Ball and Brown (1968):

1. The variability of stock returns (the change of price) is different between the time when the annual financial statements are released and the other periods. It describes that much information is published during the publication period of yearly financial statements compared to the period when they are not published.
2. Before the release of financial reports, accounting information is reflected in the stock prices. The other source of information aside from the annual financial statements obtained from the prediction of earnings report based on the prior reporting releases, other firms' voluntarily publication and investors' seeking company's performance, will provide the possibilities for the investors to predict the accounting information on the yearly financial statements. Thus, the variability of returns regarding earnings reports is expected to have a relationship with the financial reporting lag.

Nevertheless, Chambers and Penman (1984) uncovered an insignificant relationship between the variability of stock returns regarding the annual and temporary financial statements publication and the financial reporting lag. This finding suggests that regardless of the reporting lag, the annual financial statements have accounting information which is not available in other sources of information. In their second analysis, Chambers and Penman (1984) revealed that the impact of larger stock prices occurs when the financial reports are published earlier than expected date.[33] Meanwhile, the lower stock price effect occurs when the financial reports are published on time or later than expected. Chambers and Penman (1984) also uncovered the positive average of abnormal returns related to the financial reports published earlier than the expected date, meaning that companies release financial statements early if those companies have good profits (good news), which is supported by Haw et al. (2000). While the average of abnormal returns concerning the financial reports released later than the expected date is found to be negative, indicating that the late reports generally reveal financial losses (bad news).

Besides, Chambers and Penman (1984) also found that the investors transcribe the negative average of abnormal returns at the forecasted date of unexpectedly late financial reports, meaning the failure to timely publish financial report could be treated as bad news. In their final analysis,

[33] Chambers and Penman (1984, p. 34) stated that the expected lag time is estimated as the lag time for the same fiscal period in the previous year.

Chambers and Penman (1984) discovered considerable variability of abnormal stock prices after the reporting period, which has a significant impact on the stock prices after the publication day. However, none imitating those that have few financial publishing impacts at the release date. Further, the variability of stock returns for the period after financial reporting is directly associated with a financial reporting lag. Chambers and Penman (1984) also detected considerable abnormal stock returns accompanying unexpectedly early financial reports that contain good news and unexpectedly late financial statements that contain bad news.

Finally, in stock price movement after the announcements, Chambers and Penman (1984) found that the abnormal returns price performance is significantly large for firms with unexpected early reports containing good news, but little abnormal returns movement for firms with unexpected early reports containing bad news. Symmetrically, Chambers and Penman (1984) revealed that unexpected early reporting firms with bad news show no abnormal price changes. However, substantial abnormal price movement was revealed following late reporting firms with bad news. In the last analysis, Chambers and Penman (1984) defined early reports as those reporting four days earlier than the report for the same financial period in the prior year. Meanwhile, late reports were defined as those reporting four days later than the day in the same fiscal period in the prior year, and on time reports for all others.

Givoly and Palmon (1982) analysed some variables affecting the earnings disclosure timing and stock market reactions to the timeliness of earnings announcements. Their study provides empirical evidence of declining reporting lag for listed firms at the NYSE during the observed periods (from 1960 to 1974). However, the reporting lag of each firm is caused by tradition or habit, and intra-industry patterns, it is not caused by the company attributes such as firm size and operational complexity. Givoly and Palmon (1982) also revealed that the market's responses are more significant to an early earnings announcement than the market's response to a late earnings disclosure, meaning there is a decline in the value of the information when the lag for the timeliness of the annual reports rises. The impact of bad news to delay the reporting timeliness was also found by Givoly and Palmon (1982). Although the bad news is not the main predictors of reporting lag, the result is statistically significant. However, Givoly and Palmon (1982) argued that the intentional reporting lag by management is the real problem instead of delaying the financial reports due to the time taken during the audit process.

Kross (1982) investigated the relationship between the timeliness of quarterly announcement (late or early) and the type of news published (bad or good), and stock market reactions to the timeliness of earnings announcements. This study used the NYSE for the periods from 1977 to 1980. In general, Kross (1982) uncovered that earnings announcements have a relationship with abnormal stock returns surrounding the announcement day. The abnormal stock returns of

companies that announced the earnings early (late) were considerably higher (lower) than those of companies that published the earnings late (early). In other words, the residual returns of late reporting companies are lower than those of early reporting firms. These reactions occur because the late reporting firms tend to have bad news; meanwhile, the early reporting firms tend to have good news. These findings are also supported by Atiase, Bamber and Tse (1989), who found that a long reporting delay is related to smaller market reactions, considering the constant firm size.

Zeghal (1984) examined the impact of timeliness on the content of information on interim and yearly reports. The study used the data in 11,933 quarterly and 4,186 annual financial reports of 1,402 firms for the periods from 1973 to 1975 at NYSE. Zeghal (1984) provided empirical evidence corroborating that timeliness is the usefulness element of accounting information. Based on their findings, accounting reports published with a shorter reporting delay contain higher financial information required by investors than accounting reports published with longer reporting delay. However, Zeghal (1984) claimed that the informational content was impacted significantly by the reporting delay for the interim reports instead of the yearly reports. This occurs due to the different characteristics of information contained in the interim reports and the annual reports, also their role in the process of business decisions by investors. The interim announcements contain unaudited financial information while the yearly reports contain extensive and audited financial information, which has the role in confirming the financial information obtained by investors from the interim reports.

Rahmawati (2013) investigated the stock market reactions to the timeliness of yearly financial reporting. The study employed the annual reports of manufacturing listed firms at the Indonesia Stock Exchange, consisting of 568 firm-year observations for the periods from 2003 to 2008 using univariate analysis of unbalanced panel data. The study found an insignificant difference in stock market reactions toward timely and late financial reporting if the timeliness is proxied by the actual financial reporting time lag, which contradicts to the findings of Givoly and Palmon (1982) and Kross (1982). However, according to the year by year measurement, Rahmawati (2013) found some evidence of a considerable difference in the stock market reactions between late and timely financial disclosure for the Indonesian manufacturing listed firms.

Further, Rahmawati (2018) also investigated the association between the information content reflected by stock market reactions and financial reporting lag using manufacturing listed companies for the period from 2003 to 2008. However, the multivariate analysis of the unbalanced panel data reveals no evidence that supports the correlation between the information contained (stock market reactions) proxied by CAR (-2, +2) in the yearly financial reports and their financial disclosure timing. Similar to Rahmawati (2013), Rahmawati (2018) employed adjusted betas for thin trading markets as suggested by Scholes and Williams (1977) and Dimson (1979) and three

control variables: leverage, profitability, and firm size. Additionally, the study of Rahmawati (2013, 2018) applied the same observed periods of manufacturing listed companies in Indonesia, from 2003 to 2008. However, Rahmawati (2018) only used 434 firm-year observations, which is smaller than the sample used in Rahmawati (2013), consisting of 568 firm-year observations.

Furthermore, this study uses the two-stage least square in measuring stock market reactions to financial reporting lag in the multivariate analysis. Damodar (2004) advised using the two-stage least square to make the model estimate consistent and effective. Wooldridge (2010) also stated that the instrumental variables provide the solution to overcome the problems of the endogenous variable. Employing instrumental variables in the model is intended to tackle the problems in measurement errors of predictors and to control the problems of omitted variables (exogenous variable) in estimates of the causal association (Angrist & Krueger 2001). Angrist and Krueger (2001) argued that measurement errors can arise from the limited capacity of the researcher to gather appropriate data and variance between factors included in the model and those defined in the economic philosophy.

Analysing the data by applying two-stage least squares could be the appropriate approach to examine the stock market reactions to financial reporting lag, in which the financial reporting lag has some predictors indirectly influencing the stock market reactions. The two models of simultaneous-equation regression system was conducted by Owusu-Ansah (2000) in financial reporting timeliness and by Blankley, Hurtt and MacGregor (2014) in audit report lag research. Owusu-Ansah (2000) used the method to regress the audit report lead time (AUDRLT) as a dependent variable with some independent variables like company attributes for the first stage; in the second stage, the study regresses the audit report lead times (AUDRLT) including other exogenous variables to post-audit reporting lead times (post-AUDRLT) as a dependent variable. Therefore, the audit report lead times (AUDRLT) is both endogenous and exogenous variable in the system, which is termed as endogenous regressor (Owusu-Ansah 2000). Nonetheless, Ullah, Akhtar and Zaefarian (2018) stated that the two-stage least squares (2SLS)/three-stage least squares (3SLS) are commonly used for survey data. Ullah, Akhtar and Zaefarian (2018), Li et al. (2021), Roodman (2009), and Wintoki, Linck and Netter (2012) recommended the use of dynamic GMM model to address endogeneity problem in panel data. Hence, in addition to use two-stage least square model, this study also uses dynamic GMM model to measure stock market reactions to financial reporting lag with comparing the analysis results between the two-stage least square model and the dynamic GMM model.

Furthermore, this study employs various industry sectors as the sample data. The population of IDX consists of the following sectors:

1. Agriculture.

2. Basic industry and chemical (manufacturer).
3. Consumer goods (manufacturer).
4. Infrastructure, utilities, and transportations.
5. Mining.
6. Miscellaneous industry (manufacturer).
7. Property, real estate, and building construction.
8. Trading, services, and investment.
9. Finance.

The IDX categorised industry sectors based on the Jakarta Stock Industrial Classification (JASICA) for the year 2020 and before. However, in 2021 the IDX started classifying the industrial sectors based on the Indonesia Stock Exchange Industrial Classification (IDX-IC), which refers the classification to the Global Industry Classification Standard (GICS), the Industry Classification Benchmark (ICB), and the Thomson Reuters Business Classification (TRBC) (Intan 2021). Therefore, the industrial sectors above were based on JASICA.

Manufacturing firms comprise less than 48 per cent of the total population of listed companies in the IDX (Rahmawati 2013, p. 59). The IDX only categorises manufacturing firms for three sub-sectors out of nine sectors. The three sectors categorised as manufacturing are consumer goods, miscellaneous industry, and basic industry and chemical. The other sub-sectors such as agriculture, mining, property, real estate, infrastructure, utilities, transportation, trading, services, and investment are not included in the study of Rahmawati (2018). Therefore, due to the sample limitation, the findings in the study of Rahmawati (2013) do not represent the whole industry sectors of the listed Indonesian firms. Rahmawati (2013, p. 173) suggested future research in the Indonesian context to use the sample data of all business sectors listed at IDX.

In China, using listed firms from 1994 to 1997, Haw et al. (2000) found that companies with good news publish annual financial reporting earlier than those with bad news. Also, loss-making companies published their yearly financial reporting latest among other companies due to the bad news of financial losses. Supporting Begley and Fischer (1998) and Chambers and Penman (1984), Haw et al. (2000) also revealed that companies abnormally speed up the publication of good news and delay the release of bad news, compared to the financial reporting timeliness in the previous period. Besides, Haw et al. (2000) identified that there are significant stock price reactions to the yearly earnings announcements for both late (bad news) and early (god news) reporting companies. Finally, Haw et al. (2000) provided evidence on the structured timing trend of yearly financial reporting for Chinese listed firms. Haw et al. (2000) argued that the well-planned annual financial reporting trend is beneficial for the investors to anticipate bad news and

predict future earnings because there is a restricted information about future earnings in China's emerging markets.[34]

2.5.4 Research Gaps on Stock Market Reactions to Financial Reporting Lag

Research gaps have been identified in the research on stock market reactions to financial reporting delays. The first gap is the analysis of stock market reactions to financial reporting lags using all sectors at IDX excluding banking and financial sector. Prior research in the Indonesian context primarily have employed sample data from manufacturing enterprises. The second gap is that prior study in Indonesia have used the OLS method for pooled panel data rather than the two-stage least squares or the dynamic GMM methods. Hence, conducting a study using the two-stage least square model and the dynamic GMM could fill gap in the research in this area. The third gap in this field is analysing the asymmetric stock market reactions to timely and late financial reporting lags. Conducting research to measure the asymmetry of stock market reactions to the timeliness of financial reporting is another gap in financial market research.

2.5.5 Development of Hypotheses

This section will describe the development of hypothesis for stock market reactions to financial reporting lag. The hypothesis in this part aim to answer research question two (RQ2): 'What is the relationship between the financial reporting lag and stock market reactions of listed companies in Indonesia?' Also, to answer the research question three (RQ3): 'Are the stock market reactions asymmetric between timely and late financial reporting lag of listed companies in Indonesia?'

Givoly and Palmon (1982) revealed that market reaction to an early earnings announcement is more significant than the response to a late disclosure, which means there is a decline in the value of the information when the lag for the timeliness of the annual reports rises. The impact of bad news delaying the reporting timeliness was also found by Givoly and Palmon (1982) who discovered that the impact of bad news delayed the timeliness of the reporting. Although the bad news is not the main predictors of reporting lag, the result is statistically significant. Kross (1982) uncovered that the abnormal stock returns of companies that announced the earnings early (late) were considerably higher (lower) than those of companies that published the earnings late (early). Those findings are also supported by Atiase, Bamber and Tse (1989), who found that a long reporting delay is related to smaller market reactions, considering the constant firm size.

Haw et al. (2000) uncovered that there are significant stock price reactions to the yearly earnings announcements for both late (bad news) and early (good news) reporting companies. However,

[34] Due to the limited source of financial information in emerging market like China, the regularly published annual reports are useful for the investors to anticipate bad news and predict earnings in the future.

employing logistic regression and independent t-test for data analysis, Fujianti (2016) revealed no change in the stock market reactions for firms that publish their financial statements on time and late, which contradicts to most prior research findings. Therefore, based on the previous results regarding stock market reactions to financial reporting lag, the researcher postulates that the longer the reporting lag, the lower the stock market reaction will be. Also, there are asymmetric stock market reactions between timely and late financial reporting timeliness. Thus, the hypothesis for research question two (RQ2) and research question three (RQ3) are as follows:

H_8: Stock market reactions have a negative relationship with financial reporting lag.

H_9: Firms with timely financial reporting experience asymmetric stock market reactions compared to firms with late financial reporting.

2.6 Chapter Summary

This chapter has reviewed the existing studies into determinants of financial disclosure timing and stock market reactions to financial reporting timeliness. The literature on information content is also analysed in this chapter. The purpose of examining the existing articles is to develop the hypothesis to answer the research questions. According to the literature review, there has been a lack of studies that investigated tax-related variables on determinants of financial reporting lag. Related party transactions are popular as a tool for minimising tax payments, which could be considered bad news by the investors. Also, a high level of loan on a company's capital structure could be treated as a tool for minimising tax payments. Meanwhile, the impact of a tax audit is rarely investigated in the case of a financial reporting lag. Companies being exposed to a tax audit could handle a financial reporting lag differently from company not being exposed to a tax audit. Therefore, there is an excellent opportunity to examine those tax-related variables in this area.

In addition, there is an opportunity to research stock market reactions to financial reporting lag using various industry sectors is also open. However, in the Indonesian context, the research into stock market reactions to financial reporting lag for manufacturing firms has been done by Rahmawati (2013, 2018). Thus, using a different methodology to measure stock market reactions to financial reporting lag like two-stage least square and dynamic GMM model is an important research opportunity in this area. Further, measuring the asymmetric stock market reactions between timely and late financial reporting lag is another gap to be investigated in this field. There has been a lack of research investigating the asymmetric stock market reactions between timely and late financial reporting. This research will provide a contribution to this area.

The next chapter will present research methodology and sample data to measure these nine hypotheses.

Chapter 3

Research Methodology

3.1 Introduction

The previous chapter has presented the literature survey, hypotheses and identified research gaps. In this section, samples and data, the methodology for analysing determinants of financial reporting lag, and the methodology for measuring stock market reactions to financial reporting lag will be described. The structure of this chapter will be as follows: Section 3.2 illustrates the conceptual framework. Section 3.3 presents the samples and data, including the sampling procedure and source of the data. Section 3.4 discusses the methodology for analysing determinants of financial reporting lag and the proxy of variables. Section 3.5 describes the methodology for analysing the stock market reactions to financial reporting lag, which includes the event window and event date, abnormal returns, and two-stage least squares regression model. Section 3.6 concludes chapter 3.

3.2 Conceptual Framework

Adapted from Owusu-Ansah (2000), Hult et al. (2018), Gippel, Smith and Zhu (2015), Blankley, Hurtt and MacGregor (2014), and Krueger (1999) the conceptual framework for research question one (RQ1), research question two (RQ2), and research question three (RQ3) is as follows:

Figure 1 Conceptual Framework

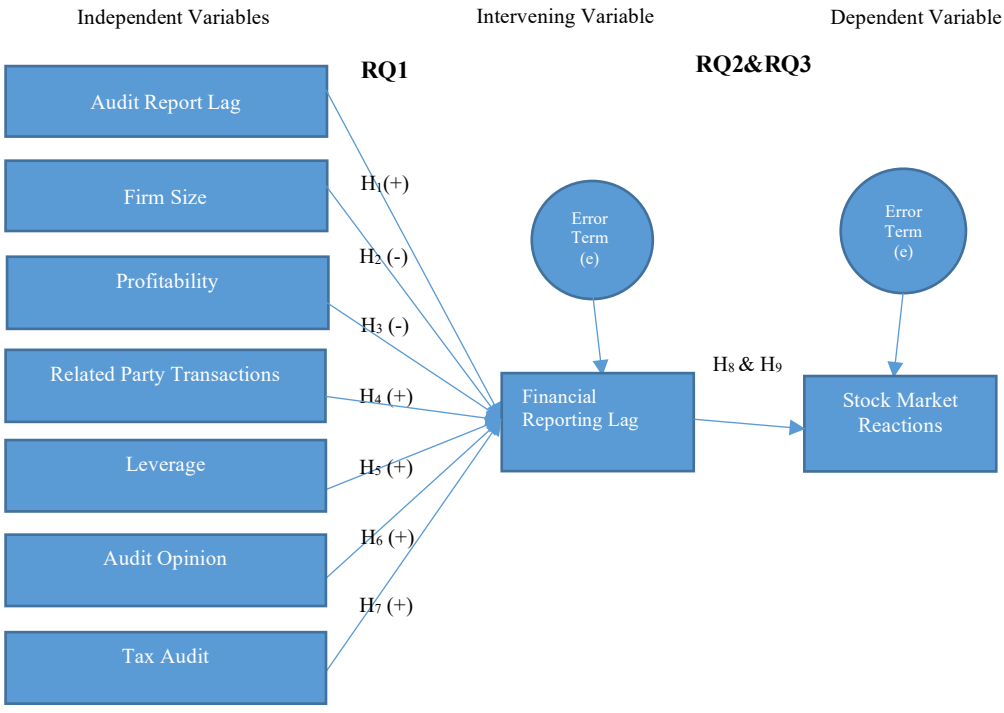


Figure 1 illustrates the relationship between several determinants and financial reporting lag identified through literature survey. It also depicts the relationship between financial reporting lag and stock market reactions. The relationships present three research questions. The first research question (RQ1) is tested by hypothesis one (H_1), hypothesis two (H_2), hypothesis three (H_3), hypothesis four (H_4), hypothesis five (H_5), hypothesis six (H_6) and hypothesis seven (H_7). These hypotheses are answered by regressing the financial reporting lag as a dependent variable on independent variables, which include audit report lag, firm size, profitability, related party transactions, leverage, audit opinion, and tax audit using LASSO regression model of unbalanced panel data with and without dummy time variables. The research question two (RQ2) is tested by hypothesis eight (H_8) and is addressed by regressing stock market reactions on financial reporting lag.

However, there could be an endogeneity problem in the relationship between stock market reactions and financial reporting lag. Stock market reactions could be treated as an endogenous variable[35] while the financial reporting lag could be treated as an intervening variable.[36] According to Gippel, Smith and Zhu (2015, pp. 3-4), the endogeneity problem is caused by omitted variables,[37] simultaneity problem[38] and measurement errors.[39] Theoretically, there are some independent variables influencing stock market reactions aside than just financial reporting lags. These variables not specified in the model are called the omitted variables, which are reflected in the error terms of the regression model between stock market reactions and financial reporting lag. These error terms could be significantly correlated with the financial reporting lag. These problems could induce biased and inconsistent estimates (Gippel, Smith & Zhu 2015, p. 6) because the independent variables describe not only the dependent variable but also the error terms in the model (Hult et al. 2018, p. 5). Damodar (2004), Hult et al. (2018), and Gippel, Smith

[35] The endogenous variable is a variable that is determined by other variables in a model. An endogenous variable can also be called a dependent variable or internal variable, where its value is specified by other variables within the system.

[36] An intervening variable is a variable, which causes a causal relationship between independent and dependent variable. The intervening variable itself is not only as a dependent variable caused by its independent variables but it also as an independent variable, which affects a dependent variable in a model.

[37] Omitted variables are the variables not specified in a model, which theoretically could impact a response variable in a model.

[38] The simultaneity problems occur when one or more predictors and a response variable are jointly figured out. These conditions trigger the causal relationship between the response variable and the predictors.

[39] Measurement error is a dissimilarity in the middle of a quantity being assessed and the true value of the quantity. The measurement errors occur when a surrogate is employed to analyse a difficult or an unobservable variable to estimate predictors or response variable.

and Zhu (2015) advised avoiding the OLS regression model and recommend using the two-stage least square to make the model estimate consistent and unbiased.[40]

Instrumental variables[41] are the technique to address the endogeneity problems coming from the measurement errors of predictors, omitted variables, and simultaneity problem (Hult et al. 2018). The purposes of employing the instrumental variables are to tackle the problems in measurement errors of predictors and to control the problems of omitted variables in estimates of causal association (Angrist & Krueger 2001). Wooldridge (2010) stated that the instrumental variables provide the solution to overcome the problems of the endogenous variable caused by the omitted variables which induce the relationship between the dependent variables' error terms and the corresponding independent variables. Measurement errors of predictors also arise from the limited capacity of the researcher to gather appropriate data and variance between factors included in the model and those defined in the economic philosophy or theory (Angrist & Krueger 2001). In this case, the independent variables describe not only the dependent variable but also the error terms in the model (Hult et al. 2018, p. 5).

The implementation of instrumental variables approach uses the model of two-stage least squares. In this study, the first stage is regressing the financial reporting lag on its instruments variables, which result in the predicted financial reporting lag.[42] The predicted financial reporting lag acts as the endogenous regressor[43] in which it has two roles (as endogenous variable for its exogenous variables and as exogenous variable for its endogenous variable). Adapted from Gippel, Smith and Zhu (2015), Hult et al. (2018), and Owusu-Ansah (2000), the second stage is regressing stock market reactions on the predicted financial reporting lag including control variables (firm size and leverage). According to Hult et al. (2018), incorporating the fitted values of residuals of endogenous regressor in the second model is supposed to reduce the endogeneity problems. Firm size and leverage are also used as the control variables in the model, following Pevzner, Xie and Xin (2015), who used these control variables in the event study using two-stage least square.[44]

Finally, research question three (RQ3) is answered by the asymmetric stock market reactions between early and late financial reporting lag groups. The RQ3 is tested by hypothesis nine (H_9).

---

[40] Consistency of an estimator is experienced if the sample size is getting larger, and the estimate is getting closer to the real value of the parameter. Meanwhile, the estimate is unbiased if the expected value of an estimate is closed to the real value of parameter.

[41] This approach uses the information of additional specified predictors by decomposing the endogenous independent variable into two parts: the exogenous part, which is not correlated with the error term, and the endogenous part, which has a correlation with the error terms (Hult et al. 2018).

[42] The predicted financial reporting lag is taken from the fitted values of the regression on the first model.

[43] Endogenous regressor is a variable which can be both endogenous and exogenous variable in the system (Owusu-Ansah 2000).

[44] Firm size and leverage are used as a control variable because they are widely used by prior research in the event study, particularly to investigate the relationship between financial reporting lag and stock market reactions.

The asymmetric stock market reactions between timely and late financial reporting lag will be tested by regressing stock market reactions on financial reporting lag, in which the financial reporting lag will be divided by firms with timely and firms with late financial reporting lag groups. This approach is adapted from Leone, Wu and Zimmerman (2006), who investigated the asymmetric sensitivity of CEO cash compensation to stock returns. It is also adopted from Lobo (2000) who examined the asymmetric effects of interest rate changes on stock prices. This technique is purposed to extend a prior study[45] examining the influence of the information content in the timely and late financial reporting on stock market prices. Whether the type of news (good news or bad news) shows the asymmetric impact on stock market prices or not showing the asymmetric stock market reactions between timely and late financial reporting lag. Previous studies, Kross (1982), Givoly and Palmon (1982), Kross and Schroeder (1984), and Chambers and Penman (1984), revealed that early (late) financial reporting tends to have good news (bad news), and the early financial reporting firms obtain higher stock price returns than do late financial reporting firms.

3.3 Data and Sample

Some annual financial statements, the code of listed firms, and the classification of business sectors were taken from the IDX, which are freely available online for recently observed periods through its website: https://www.idx.co.id/. However, the data before 2016 must be obtained from The Indonesia Capital Market Institute (TICMI)[46] since the IDX only publishes the data for three current consecutive years. When the data collection was conducted in December 2019, the observed periods available online[47] for this study were 2016 and 2017. However, in January 2020, the required data in 2014, 2015 and 2016 were no longer available on the IDX's website and so were accessed from TICMI. Further, the submission dates[48] for all observed periods from 2014 to 2017 were obtained from TICMI. For stock market reactions, the researcher can freely access the related data on historical stock prices, dividend payment, and market index from Yahoo Finance (Yahoo 2020), which provides the data on its website: https://finance.yahoo.com/. Further, some financial data, particularly the company's attributes and financial ratios, were accessed through Orbis-Bureau Van Dijk (Orbis 2019).

---

[45] Prior studies examining stock market reactions to financial reporting lag did not investigate the asymmetric stock market reactions between early and late financial reporting lag. Therefore, measuring the asymmetric stock market reactions between early and late financial reporting lag could be the extend prior study regarding stock market behaviour or event study.

[46] TICMI is abbreviated from The Indonesia Capital Market Institute managed by PT. Indonesian Capital Market Electronic Library (ICaMEL) as the subsidiary of PT. Bursa Efek Indonesia/BEI or the Indonesia Stock Exchange/IDX (TICMI 2018).

[47] Indonesia Stock Exchange (IDX) only provides three years newest freely online-accessed annual financial report. If researcher requires annual financial report older than three years, the researcher should access through TICMI.

[48] Submission dates are the timeliness of annual financial statements submitted by the Indonesian listed firms to the Financial Service Authority of Indonesia (Otoritas Jasa Keuangan/OJK). The submission dates are considered the first publication of annual financial statements to measure the Financial Reporting Lag (FRL).

The researcher chose sample data from 2014 to 2017 for the following reasons:

1. Among other things, the first topic to be examined was tax-related factors. One of the predictors explored in the first subject is leverage. The context for this investigation is Indonesia's MOF tax regulation No.169/PMK.010/2015, which requires Indonesian corporations to have a debt-to-equity ratio (DER) of 4:1. The regulation went into effect in 2016.
2. The chosen observation period is free from particular economic conditions like the global financial crisis in 2007 and 2008 which was chosen by Rahmawati (2013). The current study used panel data comprising the total samples from various industrial sectors per year for 149, 148, 160, and 157 companies in 2014, 2015, 2016, and 2017 respectively, consisting of 614 firm-years samples. Seetaram and Petit (2012) and Torres-Reyna (2007) stated that panel data sets are also referred to as longitudinal or cross-sectional time series data. They have two dimensions: spatial (N) and temporal (T) (Smith & Fuertes 2010). Smith and Fuertes (2010) argued that, generally, panel data have a large number of cross-section units and only a few time periods. They are made up of a series of observations made over time on a variety of cross-sectional units such as individuals, firms, or countries, allowing researchers to examine the dynamics of change in short time series data (Seetaram & Petit 2012). Therefore, a four-year observation period is adequate because this study used panel data for analysis.
3. Four years of daily data are also enough to detect abnormal stock market performance (Strong 1992). Because of its ability to prevent unfavourable R^2 on the market model generated by thinly traded shares, daily data are suggested for monitoring stock market responses (abnormal returns) (Erlien 2011). According to Basdas and Oran (2014, p. 169), daily data can improve the accuracy of the event window. For example, the yearly reporting date is quickly identified, and additional compounding events in the same month may be omitted. Daily data boost statistical power, minimise biased beta, and are sufficient for a four-year observation period (Strong 1992). Similarly, Brown and Warner (1985) said that using the same research approach, daily data give well-specified market models in every market using standard parametric tests. Furthermore, Brown and Warner (1985) expanded on the statistical advantages of daily data, such as the biased OLS estimate in the presence of non-synchronous trading, the extremely non-normal daily excess returns, the increase in variance surrounding the event dates, autocorrelation problems in daily excess returns, and the non-normality data of daily returns.

Rahmawati (2013) also used listed firms manufacturing sector as the sample and recommends future research in the same topic to use a sample of various industry sectors to give benefits for the investors and the managers in other sectors. Alkhatib (2012) found different results for the relationship between audit report timeliness and firm's attributes in the service sector and in the

industrial sector (manufacturing). Türel (2010) also revealed that industry type influences financial reporting timeliness in Turkey. Therefore, every business sector has various financial reporting behaviour, which could result in different stock investors' behaviour. According to Rahmawati (2013, p. 59), manufacturing firms only represent 48 per cent of the total population at IDX. Thus, choosing the sample from manufacturing firms only is not useful for the investors in other sectors such as agriculture, infrastructure, utilities, transportation, mining, property, real estate, building construction, trading, service, and investment companies.

A stratified random sampling method was employed to collect the data. As stated in Kitchenham and Pfleeger (2002), stratified random sampling divides the targeted population into sub-groups or strata. This study uses the sample from the various industry sectors. Each sector is treated as a sub-group or stratum so that the samples were collected from each sub-group or stratum or sector. Further, Singh and Masuku (2014, p. 6) also underscored that if the population is heterogeneous when applying the stratified sampling method, the sample size for each stratum would be different. The total population of each sector of listed firms at IDX are diverse. Besides, the benefit of employing stratified random sampling is to make sure of the representation of the groups in the targeted population (Acharya et al. 2013). Therefore, the stratified random sampling method is appropriate to retrieve the sample of data from various industry sectors.

Similar to Abdelrazik (2017), Owusu-Ansah (2000), Buniamin (2010), Sultana (2015), all the financial companies were excluded from the sample because they are regulated by particular rules and procedures governed by the Ministry of Finance and the Financial Services Authority of Indonesia. Besides, they have small inventories and few fixed assets and are less complicated audits (Al-Ghanem & Hegazy 2011, p. 82; Habib & Bhuiyan 2011, p. 36). Moreover, Haider (2015) stated that a considerable proportion of financial assets and liabilities on all banking and financial firms' capital structures is the reason why such companies are excluded from the data analysis. Haider (2015) also argued that banking firms' capital structure and financial assets will result in different banking performance parameters like financial ratio analysis compared to non-financial and banking companies.

To keep away from the extreme impact of the unanticipated stock price trades, delisted as well as relisted companies within the observation period were omitted from the sample. This approach is used by Sultana (2015). Following from Ball and Brown (1968), the non-December year-end companies were eliminated from the sample because of different reporting behaviour. Dyer and McHugh (1975) found that firms with 30th June financial year-end have financial reporting lags longer than those with non-30th June financial year-end. The researcher randomly chose the companies forming the sample from each business sector (sub-group) so that every company from each stratum has the same probability of being selected. The total sample from all the business

sectors or the entire population must meet the required size for confidence intervals or statistical power. Referring to Singh and Masuku (2014, p. 11) and Veal (2005, p. 207), to achieve the statistical power, the samples accounted for around 35 per cent of the total firms in each sector for each year. The total samples of each business sector are shown in Table 3, consisting of 614 firm-years sample from 2014 to 2017.

Table 3 The samples selected from each industry sector from 2014 to 2017

No	Descriptive	2014	Sample	2015	Sample	2016	Sample	2017	Sample
1	Total population	510		525		541		570	
2	Less: listing, delisting, and incomplete information	2		21		2		33	
3	Total firms delivering annual financial reports	508		504		539		537	
4	Less: Banking and Finance	82		80		82		88	
5	Firms subjected to be sample	426	35%	424	35%	457	35%	449	35%
	Business sector	Total	Sample	Total	Sample	Total	Sample	Total	Sample
1	Agriculture	17	6	16	6	19	7	17	6
2	Basic industry	59	20	58	20	61	21	66	23
3	Consumer goods industry	40	14	41	14	41	14	40	14
4	Infrastructure, utilities, and transportations	47	17	47	17	58	21	57	20
5	Mining	42	15	38	13	44	15	37	13
6	Miscellaneous industry	38	13	38	13	40	14	38	13
7	The property, real estate, building construction	53	19	57	20	60	21	60	21
8	Trading, services, and investment	130	45	129	45	134	47	134	47
	Total	426	149	424	148	457	160	449	157

Note: The table presents the sample from each sector. The selected sample from each sector are a minimum of 35% of the population from each sector after excluding listed and delisted firms, banking, and the financial sector and firms with incomplete data. Therefore, the total samples for all sectors per year are 149, 148, 160, and 157 companies in 2014, 2015, 2016, and 2017 respectively, consisting of 614 firm-years samples.

Furthermore, the sample should have the following data:

1. The relevant data to be observed as independent variables for financial reporting lag such as the date of the audit report, total assets, market capitalisation, profitability ratio (OROA and ROE), total related party transactions, debt to equity ratio, debt to assets ratio, the type of audit opinion, tax audit results.
2. The data on submission date of annual financial statements to the Financial Service Authority of Indonesia (Otoritas Jasa Keuangan/OJK).
3. Historical stock prices.
4. The estimation periods of 200 days.

Therefore, the total included sample are 468 firm-year observations for 101 companies in 2014, 109 companies in 2015, 125 companies in 2016, 133 companies in 2017.

3.4 Methodology for Analysing Determinants of Financial Reporting Lags: Impact of Taxation

This section presents an analysing method for measuring determinants of financial reporting lag. The structures are divided into describing the unbalanced panel data analysis, proxies of variables, which include dependent and independent variables.

3.4.1 Empirical Models: Unbalanced Panel Data

This study converts the data of some variables into logarithm to make the data normally distributed. The unbalanced panel data model related to research question one (RQ1) for testing the H_1, H_2, H_3, H_4, H_5, H_6, and H_7, are as follows:

$$LOGFRL_{it} = \alpha_{it} + \beta_1 LOGARL_{it} + \beta_2 LOGSIZE_{it} + \beta_3 PROF_{it} + \beta_4 LOGRPTs_{it} + \beta_5 LEV_{it} + \beta_6 OPIN_{it} + \beta_7 TAX_{it} + \mu_{it} \quad (3.1)$$

$$LOGFRL_{it} = \alpha_{it} + \beta_1 LOGARL_{it} + \beta_2 LOGSIZE_{it} + \beta_3 PROF_{it} + \beta_4 LOGRPTs_{it} + \beta_5 LEV_{it} + \beta_6 OPIN_{it} + \beta_7 TAX_{it} + \beta_8 d1 + \beta_9 d2 + \beta_{10} d3 + \mu_{it} \quad (3.2)$$

Where, $LOGFRL_{it}$ stands for the logarithm of Financial Reporting Lag for company *I* in period t;[49] ARL_{it} constitutes Audit Report Lag of company *I* in period t, the number of days between financial year-end and the date of audit report; $SIZE_{it}$ represents firm size of company I in period t, logarithm of total assets; $PROF_i$ describes profitability of company I in period t, the ratio of operating income on total assets (OROA); $RPTs_{it}$ explains Related Party Transactions of company I in period t, logarithm of total related party transactions; LEV_{it} surrogates leverage of company I in period t, debt to equity ratio; $OPIN_{it}$ presents audit opinion of company I in period t, dummy variable, unqualified audit opinion is coded '0', and other wise is coded '1'; TAX_{it} stands for tax audit of company I in period t, dummy variables, firms exposed to tax audit is coded '1', other wise is coded '0'; α_{it} stands for the parameters; β_1, β_2, β_3, β_4, β_5, β_6, β_7, β_8, β_9, β_{10} constitute the slopes or coefficients; μ_{it} *is* error term; $d1 - d3$ are dummy time variables from 2014 to 2016, $d1$ stands for '1' for 2014 and other periods are '0', $d2$ denotes '1' for 2015 and other periods are '0', $d3$ presents '1' for 2016 and other periods are '0'.

[49] The number of days between the date of submission of annual financial statements to the Financial Services Authority of Indonesia (OJK) and the financial year-end.

3.4.2 Measurement of Variables

3.4.2.1 Dependent Variable

Following Anne-Mie, Tom Van and Sandra (2014) and Givoly and Palmon (1982, p. 489), Financial Reporting Lag (FRL) is measured as the number of days between the end of a company's financial year and the submission date of annual financial statements. In this study, the submission date to the OJK is employed as the first announcement of the annual financial report to the public. According to KEP-346/BL/2011, issued on July 5th, 2011, about 'the Regular Financial Reporting Timeliness for Listed and Public Company', the listed companies in Indonesia are obliged to send their yearly financial statements within 3 months from the end of a company's financial year. This study uses the sample data from 2014-2017 when the KEP-346/BL/2011 on 'the Regular Financial Reporting Timeliness for Listed and Public Company' come into effect.

3.4.2.2 Independent Variables

a. Audit Report Lag (ARL)

Audit Report Lag (ARL) is defined as the number of days between the end of a company's financial year and the date of the audit report (Durand 2019; Gontara & Khlif 2021; Krishnan & Yang 2009; Md. Borhan Uddin & Mabel 2020; Oradi 2021; Stewart & Cairney 2019).

b. Firm Size (SIZE)

Total assets are employed as proxy for firm size in the main analysis. This proxy was used by Agyei-Mensah (2018) when examining the relationship between corporate financial performance and financial reporting lag as well as corporate governance attributes. Further, following Al-Ajmi (2008), Owusu-Ansah (2000), and Oradi (2021), the logarithm of the total assets is applied to assure the normal distribution of the sample.

c. Profitability (PROF)

Operating Returns on Asset (OROA) is used to measure the profitability because OROA estimates a company's management performance both in controlling expenses and in using a company's resources (assets) to produce sales. OROA also measures how much profit is generated by the assets funded by all types of investors, such as equity shareholders, preferred shareholders, and creditors (Titman, Keown & Martin 2018). The equation to compute OROA is as follows:

$$OROA_{it} = \frac{Net\ Operating\ Income\ or\ Earnings\ before\ Interest\ and\ Taxes\ (EBIT)_{it}}{Total\ Assets_{it}} \quad (3.3)$$

where $OROA_{it}$ stands for the ratio of the net operating income or EBIT to the total assets of company *I* in period *t*, $EBIT_{it}$ constitutes total earning before interest and taxes of company *I* in period t, and $Total\ Assets_{it}$ shows the total quick and fixed assets of firm *I* in period t.

d. Related Party Transactions (RPTs)

The proxy for the RPTs variable uses the logarithm of the total number of related party transactions.[50] The total number of RPTs has been used by Nekhili and Cherif (2011) when analysing the impact of related party transactions with firm value in France. The logarithm is used to normally distributed the data.

$$RPTs_{it} = Log\ (Total\ RPTs_{it}) \tag{3.4}$$

Where $RPTs_{it}$ is the related party transactions of the company *I* in period *t*, $Total\ RPTs_{it}$ stands for total any transaction to related parties by company *I* in period *t*, and Log constitutes the logarithm.

e. Leverage (LEV)

Adapted from Pardede (2016), Al-Harshani (2008), and Modugu, Eragbhe and Ikhatua (2012), the researcher defines the leverage as the ratio of total debt to the total shareholders' equity at the end of the financial year. Also, the proxy for the debt-to-equity ratio is based on the tax-theoretical background and tax-regulation[51], which measures debt to equity ratio as the approach to prevent capital structure from being used as tax minimisation.

$$Debt\ to\ Equity\ Ratio_{it} = \frac{Total\ Debt_{it}}{Total\ Shareholders'\ Equity_{it}} \tag{3.5}$$

Where $Debt\ to\ Equity\ Ratio_{it}$ shows the ratio of the total debt to the total equity of company *I* in period t, $Total\ Debt_{it}$ represents the total debt of company *I* in period t, and $Total\ Shareholders'\ Equity_{it}$ constitutes the total shareholders' equity of company *I* in period t.

[50] Definition of related parties refers to the Indonesian capital market law number 8 (1995), Article 1 in Chapter 1, defines the related party as follows: (1). Family relationships due to marriage and descent to the second degree both horizontally and vertically, (2). Relations between the Party and employees, directors, or commissioner of that Party, (3). Relationship between 2 companies where there are one or more members of the same board of directors or board of commissioners, (4). The relationship between the company and the Party, both directly and indirectly, controls, or is controlled by the company, (5). A relationship between two companies that are controlled, directly or indirectly, by the same Person, or (6). The link between the company and significant shareholders.

[51] Tax regulation on 169/PMK.010/2015, which regulates all companies in Indonesia to have a comparison between debt and equity (debt to equity ratio/DER) on their capital structure for 4:1.

f. Audit Opinion (OPIN)

A dummy variable defines the nature of the audit opinion. A company with a qualified audit opinion is coded '1', and unqualified audit opinion is coded '0'. This proxy has been employed by Ashton et al. (1987), Habib et al. (2019), Md. Borhan Uddin and Mabel (2020), and Oradi (2021).

g. Tax Audit (TAX)

The researcher defines the tax audit variable as the tax-related contingent liabilities resulting from the tax inspection/tax assessment conducted by the tax authority to a listed company. The tax-related contingent liabilities are the tax-audit results which are still in dispute between the listed firms and tax authority. The tax audit results are disclosed on the footnote of a company's financial statements under taxation disclosure, contingencies, or litigation disclosures. Hence, there is an explanation on the footnote if the tax audit results are still in dispute or on litigation process to tax court. The researcher applies a dummy variable to the proxy of the tax audit. A company which has been subjected to the tax audit is coded '1', and a company which has not been subjected to the tax audit is coded '0'. This approach was used by Pardede (2016).

3.4.3 Robustness Test

Alternative proxies for profitability (PROF) and firm size (SIZE) were applied to test the robustness of the findings. Profitability uses Return on Equity (ROE); meanwhile, firm size uses market capitalisation. Return on Equity has been used by Al-Tahat (2015), Hitz, Löw and Solka (2013), Agyei-Mensah (2018), Ishaq Ahmed, Ayoib and Mazrah (2018), and Md. Borhan Uddin and Mabel (2020). Also, market capitalisation has been used by Hitz, Löw and Solka (2013). Hitz, Löw and Solka (2013) argued that market capitalisation reflects the size of the company. Broader markets have higher public participation than smaller ones to supervise the company, and that pressure reflects general markets' attention (Dyer & McHugh 1975). Furthermore, the values of RPTs were also used as the alternative proxy for RPTs while, in the main proxy, the logarithm of total RPTs was utilised.

For leverage, the debt to assets ratio was used as the alternative proxy to replace debt to equity ratio as the main proxy. The debt to assets ratio is essential in determining financial risk for a corporation. A ratio bigger than 1 show that a large part of the assets is financed by debt and that a firm has a higher default risk. The lower the ratio the safer the firm. Further, the alternative proxy for tax audit is the amount of taxes containing in the tax assessment letter. The amount of taxes substitutes dummy variable used as the main proxy for tax audit, company being exposed to tax audit is coded '1', otherwise it is coded '0'. In the alternative proxy, the amount of taxes in

the tax assessment letter based on the types of tax assessment letters were used to measure their impact on annual financial reporting lag. The alternative proxies of firm size, profitability, related party transactions, leverage, and tax audit were also used to test the robustness of the findings with and without dummy time variables.

3.4.3.1 Alternative Proxy of Firm Size (SIZE)

The equation for market capitalisation is as follows:

$$Market\ Capitalisation_{it} = Number\ of\ Shares\ Outstanding_{it}\ X\ Share\ Price_{it} \quad (3.6)$$

Where $Market\ Capitalisation_{it}$ is the number of market capitalisation of company *I* in period t, $Number\ of\ Shares\ Outstanding_{it}$ denotes the number of shares traded of company I in period t, and $Share\ Price_{it}$ is the price of share traded of company *I* in period t.

3.4.3.2 Alternative Proxy of Profitability (PROF)

The equation for Return on Equity can be described as follows:

$$Return\ on\ Equity_{it} = \frac{Total\ Net\ Income_{it}}{Total\ Shareholders'\ Equity_{it}} \quad (3.7)$$

Where $Return\ on\ Equity\ Ratio_{it}$ shows the ratio of the total net income on the total equity of company I in period t, $Total\ Net\ Income_{it}$ represents the total operating income after interest and taxes of company I in period t, and $Total\ Shareholders'\ Equity_i$ constitutes the total shareholders' equity of company *I* in period t.

3.4.3.3 Alternative Proxy of Leverage (LEV)

The equation for alternative proxy of leverage is as follows:

$$Debt\ to\ Asset\ Ratio_{it} = \frac{Total\ Debt_{it}}{Total\ Assets_{it}} \quad (3.8)$$

Where $Debt\ to\ Assets\ Ratio_{it}$ shows the ratio of the total debt on the total assets of company I in period t, $Total\ Debt_{it}$ represents the total debt of company I in period t, and $Total\ Assets_{it}$ constitutes the total assets of company *I* in period t.

3.4.3.4 Alternative Proxy of Related Party Transactions

The alternative proxy of RPTs is the amount of total RPTs. The amount of related party RPTs reflects the true number of transactions between a listed firm with its affiliation. This proxy was used to replace the logarithm of total RPTs used as the main proxy.

3.4.3.5 Alternative Proxy of Tax Audit

The alternative proxy for tax audit is the amount of tax assessment letter. The amount of tax assessment results are the amounts of tax audit results contained in the tax assessment results. The type of tax assessment letter consists of: (1) Tax underpayment assessment letter (SKPKB), (2) Additional tax underpayment assessment letter (SKPKBT), (3) Tax overpayment assessment letter (SKPLB), and (4) Nil tax assessment letter (SKPN).

3.5 Methodology for Analysing Stock Market Reactions to Financial Reporting Lags

This section describes the methods for analysing stock market reactions to financial reporting lag. The section is structured by describing the event window and event date, calculating cumulative abnormal returns, and regression analysis to measure information content.

3.5.1 Event Window and Event Date

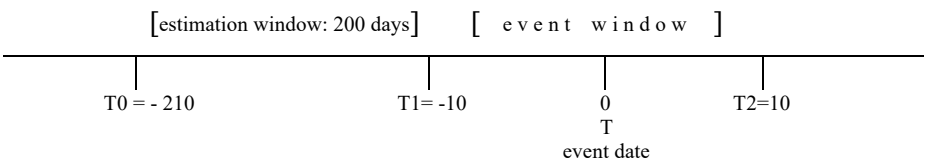
The event window is aimed to test the impact of an event, and the event date should be determined accurately (Basdas & Oran 2014). Adopted from Menike et al. (2013), the event study methodology uses the announcement date (day t = 0), which is interpreted as the actual day of the release of the financial statements (the event date). Day t = -1 is the trading day on 1 (one) day before the event date. Day t = +1 is the trading day on 1 (one) day after the event date. The maximum event window or test period is 21 days, which comprises the day of the publication (t = 0), 10 days after, and 10 days before the event date. The decision to restrict the maximum 21 days of the event window is to make sure that the market reactions are only impacted by the release of yearly financial statements. However, the short periods of event window, are investigated to minimise any possible compounding effect,[52] however, they are still enough to catch the impact of reporting timeliness on stock prices (Rees 1995). The compounding effect is one of the limitations in the event study (Sitthipongpanich 2011, p. 65). Also, the approach of cumulative average abnormal returns (CAAR) is used to accommodate multiple periods of short window (MacKinlay 1997, p. 21).

[52] The compounding events, which potentially impact on the market reaction, are the announcements of various events such as filing legal issues, the initial public offering of equity or debt, releasing a new product, merger or acquisitions, or any other economic activities.

The CAAR which are investigated in this study are 11 days event window, following Kross (1982), are examined. They are CAAR (-1, +1), CAAR (-2, +2), CAAR (-3, +3), CAAR (-4, +4), and CAAR (-5, +5). Kross (1982) and Kross and Schroeder (1984) revealed that the residual returns of early financial reporting firms are higher than those of late financial reporting firms using CAR (-5, +5) and CAR (-2, +2), respectively. To investigates whether the findings are impacted by the option of the event window and to restrict the influence of the compounding events are performed by applying the multiple event window. Furthermore, the estimated period uses 200 days before the event windows from day t = -210 to day t = -10. As stated by Basdas and Oran (2014), the range of estimation window for daily data can be between 100 and 300 days. According to Strong (1992), the estimated period is intended to estimate the parameters of the benchmark expected return, which is used to calculate the predicted abnormal returns within the event period.

In this study, the daily data are used for the four-year observation periods (2014-2017) due to their robustness to prevent the low R^2 on the market model caused by thinly traded securities[53] (Erlien 2011). Basdas and Oran (2014, p. 169) argued that daily data can escalate the accuracy of event window. For example, the annual reporting date can be recognized easily and other compounding events in the same month can be removed. Strong (1992) also summarised prior research findings that the daily data increase statistical power, reduce biased beta, and they are sufficient for the four-year observation periods. Similarly, Brown (1985) argued that daily data provide well-specified market model using the classical parametric tests in any circumstances for the even study methodology. Furthermore, Brown (1985) elaborately explained that the daily data present statistical advantageous, including the biased OLS estimate in the existence of non-synchronous trading, the extremely non-normal daily excess returns, the increase of variance surrounding the event dates, the autocorrelation problems in daily excess returns, and the non-normality data of daily returns. Thus, the timeline for the event study is as follows:

Figure 2 Timeline of the Event Study



[53] Erlien (2011) argued that thinly traded securities could cause low R^2. To minimise the risk of low R^2 caused by the thinly traded securities, daily data can be used due to their robustness to prevent the low R^2.

3.5.2 Measuring Cumulative Abnormal Returns

This study employs Microsoft Excel to calculate abnormal returns (AR), cumulative abnormal returns (AR), average abnormal returns (AAR), and cumulative average abnormal returns (CAAR) by using data for company's return, market return, and expected return. To calculate the Scholes-Williams's beta and Dimson's beta, this research uses EViews software. Measuring AR, CAR, AAR, and CAAR are described as:

- *Determining the company's actual return* (R_{it})

  The company's actual returns are calculated by employing the logarithm to confirm the standards statistical test and to make the returns normally distributed (Strong 1992). Besides, Strong (1992) argued that analytically, logarithmic returns are more applicable to form the returns in the long intervals by adding up or linking together the sub-period returns. The equation to calculate the company's actual return is as follows:

  $$R_{it} = log[\frac{P_{it}}{P_{it-1}}] \quad (3.9)$$

  The adjusted share prices are used, so that the dividend has been adjusted on the data utilised in this study. Where Log stands for the logarithm; R_{it} denotes the return on share *I* in period *t*; P_{it} denotes the price of stock *I* in period *t*; P_{it-1} represents the price of share *I* in period *t*-1.

- *Calculating the market return* (R_{mt})

  This research employs general market index to estimate the market returns, Jakarta Composite Index/Indeks Harga Saham Gabungan (IHSG). The equation to calculate the market returns is as follows:

  $$R_{mt} = Ln\ (Market\ Index_t \div Market\ Index_{t-1}) \quad (3.10)$$

  Where R_{mt} are the market returns; $Market\ Index_t$ represents the market index in period *t*; $Market\ Index_{t-1}$ constitutes the market index in period *t*-1; and Ln stands for the natural logarithm.

- *The market model of actual return* (R_{it})

  Brown (1985) argued that by using daily and monthly returns, the market model performs well under different situations including non-synchronous trading, non-normality daily returns, low sample size, and clustering. Also, ordinary least square market model

applying parametric test criteria function better in a variety of circumstances (Brown 1985). The market model of the actual returns is as follows:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad (3.11)$$

Where R_{it} stands for the actual return of share *I* in period *t*; α_i represents the intercept of the model; β_i constitutes the slope of the model of security *I*; R_{mt} represents the returns on the market index in period *t*; and ε_{it} stands for the identically and independently distributed error term for share *I* in period *t*.

- *Calculating the expected return*

  Following prior research, each firm must have 200 days of stock prices to estimate the expected returns. The model for the expected returns is as follows:

$$\widehat{R_{it}} = \widehat{\alpha_i} + \widehat{\beta_i} R_{mt} \quad (3.12)$$

  Where $\widehat{R_{it}}$ stands for the expected return for share *I* in *t* period; $\widehat{\alpha_i}$ constitutes the estimated adjusted alpha (α_i) for share *I* emanated from $\widehat{\alpha_i}=\overline{R_i}-\widehat{\beta}.\overline{R_m}$, where R_i is the actual return and R_m is the market return; $\widehat{\beta_i}$ represents the predicted adjusted beta (β_i) for share *I,* which employs Scholes-Williams's beta (obtained by Equation 3.15) and Dimson's beta (obtained by Equation 3.16).

- *Calculating the Abnormal Return (AR)*

  The abnormal returns are the difference between the expected return and the actual returns during the event window. The equation to calculate the AR is as follows:

$$AR_{it} = R_{it} - \widehat{R_{it}} \quad (3.13)$$

  Where AR_{it} denotes the abnormal return of share *I* in *t* period; R_{it} represents the actual return of share *I* in period *t*; and $\widehat{R_{it}}$ constitutes the expected return of s*tock I* in *t* period (calculated from Equation 3.12 for the expected returns using the adjusted beta estimate procedures $\widehat{R_{it}} = \widehat{\alpha_i} + \widehat{\beta_i} R_{mt}$).

- *Calculating the Average Abnormal Return (AAR)*

  Following Binder (1998), the average abnormal returns are calculated based on the following equation:

$$AAR_t = [(Total\ AR_{it})\ x\ (\frac{1}{N})] \quad (3.14)$$

Where AAR_t denotes the average abnormal returns for period *t*; AR_{it} represents the abnormal return of share *I* in *t* period; and N constitutes the number of observations.

- *Adjustment of beta for thin trading*

  Following the previous study, this research applies the beta adjustment pioneered by Scholes and Williams (1977) and Dimson (1979). Although Bartholdy and Riding (1994) found no additional benefits for applying the adjusted beta procedures suggested by both Scholes and Williams (1977) and Dimson (1979), and Bartholdy and Riding (1994) tended to recommend for choosing the appropriate market index to have a better model, it will be significant to employ the adjusted beta procedures for the data of various industry sectors of listed companies in unsynchronized trading like the IDX. Dimson (1979) argued that in a thin trading market, which commonly occurs in emerging capital, not all securities are traded every day. The prices of infrequently traded security from a previous period will be carried out to the adjusted closing prices in an observed period. This condition makes the estimated beta derived from the market model containing the infrequently traded security biased downwards. Inversely, in the thick trading market, Dimson (1979) claimed that the frequently traded security will result in an upward biased beta. The equation to calculate the adjusted beta of Scholes-Williams' method (β_i) is as follows:

$$\beta_i = \frac{(\beta_i^{-1} + \beta_i^0 + \beta_i^{+1})}{(1+2.\rho_{1m})} \quad (3.15)$$

The calculation of the adjusted beta of Dimson's method (β_i) is adopted from Bartholdy and Riding (1994, p. 242). Bartholdy and Riding (1994, p. 253) argued that the one lag and one lead Dimson's beta estimate procedure is more consistent than that with two or three lags and leads. Therefore, the equation of Dimson's adjusted beta is as follows:

$$\beta_i = \beta_i^{-1} + \beta_i^0 + \beta_i^{+1} \quad (3.16)$$

Where β_i constitutes the adjusted beta for the measured share; β_i^{-1}constitutes the parameter calculated by regressing the market index return with one lag and the return of the measured share; β_i^0 stands for the parameter achieved by regressing the market index return and the return of the measured share; β_i^{+1} shows the parameter obtained by regressing the market index return with one lead and the return of the measured share;

and ρ_{1m} represents the serial correlations coefficient of the market index for the first order.

β_i^{-1}, β_i^0, and β_i^{+1} are taken from the Dimson's model:

$R_{it} = \alpha_i + \beta_i^{-1} R_{mt-1} + \beta_i^0 R_{mt} + \beta_i^{+1} R_{mt+1} + \varepsilon_{it}$

ρ_{1m} is derived from the following autocorrelation model: $R_{mt} = \alpha_i + \rho_1 R_{mt-1} + \varepsilon_{it}$

- *Determining the Cumulative Abnormal Return (CAR)*

  CAR is the accumulation of all the abnormal returns within the event window from the first period prior to the date of the event (t1) to the final period after the date of the event (t2) (MacKinlay 1997). Most event studies, accumulating the abnormal returns, aim to fully capture the impact of the event on the stock prices or to reduce the effect of uncertainty regarding the exact date of the event (Strong 1992). Following Basdas and Oran (2014), the equation to calculate the CAR is as follows:

  $$CAR_{it(t1,t2)} = Total\ AR_{\ it(t1,t2)} \quad (3.17)$$

  Where $CAR_{it(t1,t2)}$ stands for the cumulative abnormal return during the event window from t_1 to t_2 for share *I* in *t* period; and AR_{it} represents the abnormal return within the event window from t_1 to t_2 for share *I* in *t* period.

  For example, CAR (-2, +2) are calculated by computing the abnormal returns from day -2 to day +2 relative to the event date, which can be figured out as follows:

  $$CAR_{it(-2,+2)} = AR_{-2i} + AR_{-1i} + AR_{0i} + AR_{+1i} + AR_{+2i}$$

  Where $CAR_{it(-2,+2)}$ are the cumulative abnormal returns of security *I* for five days from day -2 prior to the date of the event to day +2 after the date of the event; AR_{-2i} is the abnormal returns on two days prior to the date of the event for firm *I;* AR_{-1i} is the abnormal returns on one day prior to the date of the event for firm *I;* AR_{0i} is the abnormal returns on the date of the event for firm *I;* AR_{+1i} is the abnormal returns on one day after the date of the event for firm *I;* AR_{+2i} is the abnormal returns on two days after the date of the event for firm *I*. Similar methods are applied to calculate CAR (-5, +5).

- *Calculating the Cumulative Average Abnormal Return (CAAR)*

  Following Binder (1998), Cumulative Average Abnormal Returns are calculated based on the following equation:

$$CAAR_{it(t1,t2)} = Total\ AAR_{it(t1,t2)} \quad (3.18)$$

Where $CAAR_{it(t1,t2)}$ denotes the cumulative average abnormal return for share *I* in period *t* during the event window from t_1 to t_2; $AAR_{it(t1,t2)}$ stands for the average abnormal returns for share *I* in period *t* during the event window from t_1 to t_2.

- *Significance of Cumulative Average Abnormal Returns (CAAR)*
  The significance of CAAR is determined using the formula as follows:

$$T - value\ of\ CAAR = \frac{CAAR_t}{[\sigma(CAAR_t)/(N\ \hat{}\ (1/2)]} \quad (3.19)$$

Where $CAAR_t$ denotes the cumulative average abnormal returns for period *t*; $\sigma(CAAR_t)$ stands for the standard deviation of cumulative average abnormal returns for the N observations in period *t*; N represents the number of the sample companies.

3.5.3 Analysis of Stock Market Reactions to Financial Reporting Lag

This section describes the methodology to analyse stock market reactions to financial reporting lag using two stage least square as the main analysis and common effect model as robustness test.

3.5.3.1 Two-Stage Least Squares

To test the H_8, referring to RQ2 in chapter 2 section 2.5.5, two-stage least squares method was used. The two stages least square model assumes the existence of endogenous variables.[54] The endogenous variables are stock market reactions in the second stage. Meanwhile, financial reporting lag is endogenous variable in the first stage but exogenous variable in the second stage. Thus, the financial reporting lag is called endogenous regressor.[55] Besides, the instrumental variables are also required when examining the stock market reactions to financial reporting lag using the two-stage least square model. The prerequisite as an instrumental variable is that it must be associated with the endogenous regressor and uncorrelated with error term. The instrumental variable should have a correlation with the endogenous regressor (Financial Reporting Lag/FRL), either positive or negative with F-statistics more than 10 as the rule of thumb but not correlated with error term (Gippel, Smith & Zhu 2015; Hult et al. 2018).

[54] Endogenous variable is a variable, which is figured out by other variables in a model. Endogenous variable can also be called as dependent variable or internal variable, in which its value is specified by other variables within the system.

[55] Endogenous regressor is a variable which can be both endogenous and exogenous variable in the system (Owusu-Ansah 2000).

Furthermore, Gippel, Smith & Zhu (2015) emphasised that Sargan-Hansen's test of over-identifying approach is J-statistics restriction to check whether the instruments are correlated with the error term or uncorrelated. In the case of the number of instrumental variables are the same or more than the number of endogenous variables, the approach is just identified or over-identified model (Hult et al. 2018). The purposes of employing those instrumental variables are to tackle the problems in measurement errors of predictors and to control the problems of omitted variables in estimates of causal association (Angrist & Krueger 2001). The instrumental variables could solve the problem of endogeneity of one or more explanatory variables (Wooldridge 2015). Damodar (2004) advised using the two-stage least square and to avoid the OLS in the simultaneous model to make the estimate consistent. Angrist and Krueger (2001) also argued that measurement errors can arise from the limited capacity of the researcher to gather appropriate data and variance between factors included in the model and those defined in the economic philosophy. The operational definition for those instrumental variables refers to the main operational descriptions for the independent variables of financial reporting lag in research question one (RQ1).

The test of simultaneous specification employs the test of Hausman (1978). Also, endogeneity problem occurs when the coefficient estimates of predicted FRL ($\widehat{FRL}$) is significantly different from the coefficient estimates of actual days of FRL (Hult et al. 2018). The endogeneity problem describes the simultaneous relationship between the endogenous regressor (FRL) and the endogenous variable (stock market reactions). This test can be conducted using Durbin-Wu-Hausman test (Hausman 1978). If the p-value of Wald F-statistics is < 0.05, the null hypothesis, which assumes that there is no endogeneity problem, is rejected. It indicates that there is an endogeneity problem in the model. Hence, the estimation should use two-stage least square model. Meanwhile, if the p-value of Wald F-statistics is > 0.05, the null hypothesis is accepted, meaning that the endogeneity problem does not exist in the model. Thus, the ordinary least square model is better to apply than the two-stage least square model.

Adapted from Owusu-Ansah (2000) and Blankley, Hurtt and MacGregor (2014), the two-stage least squares regression, referring to research question two (RQ2) to test the H_8, is as follows:

The first stage (reduced form) is regressing the financial reporting lag as endogenous variable on its instrumental variables and some independent variables to obtain the predicted or estimated values of financial reporting lag. However, finding a valid instrument based on economical and theoretical judgement is quite challenging and not a trivial effort. Gippel, Smith & Zhu (2015) argued that using the instrumental variables based on the economical reason is better than using the lagged values of variables in the system. This study uses audit report lag and firm size as the instrumental variables for financial reporting lag. Those variables were chosen because of their

significant relationship with financial reporting lag. Also, the F-statistics in the regression model is > 10 as the rule of thumb. Further, profitability, leverage, and audit opinion were also included in the model as the instruments due to their significant correlation with financial reporting timeliness, found by prior studies: profitability (Al-Ajmi 2008; Nor Ijah Ku Ismail and Chandler 2004), leverage (Al-Ajmi 2008; Owusu-Ansah 2000), and audit opinion (Soltani 2002; Owusu-Ansah and Leventis 2006). Hence, the equation for the first stage to get predicted or estimated FRL is as follows:

$$\widehat{FRL}_{it} = \hat{\delta}_0 + \hat{\delta}_1 ARL_{it} + \hat{\delta}_2 SIZE_{it} + \hat{\delta}_3 PROF_{it} + \hat{\delta}_4 LEV_{it} + \hat{\delta}_5 OPIN_{it} + e \quad (3.20)$$

Where $\widehat{FRL}_{it}$ denotes for the predicted or estimated financial reporting lag security *I* in period *t*; $\hat{\delta}_0, \hat{\delta}_1, \hat{\delta}_2, \hat{\delta}_3, \hat{\delta}_4, \hat{\delta}_5$ constitute estimated parameters values; ARL_{it} represents the audit report lag security *I* in period *t*; $SIZE_{it}$ is the firm size of share *I* in *t* period; $PROF_{it}$ is the profitability of share *I* in *t* period; LEV_{it} is the leverage of share *I* in *t* period; $OPIN_{it}$ is the audit opinion of the company *I* in period *t*; *e* constitutes error terms.

The second stage is regressing the cumulative average abnormal returns (CAAR) as endogenous variable on the estimated or predicted financial reporting lag resulted from the fitted value of residuals in the first stage (reduced form in Equation 3.20) as endogenous regressor in the second stage. Therefore, the regressions of the second stage are as follows:

$$CAAR_{(-1,+1)} = \alpha_i + \lambda_1 \widehat{FRL}_{it} + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \varepsilon_{it} \quad (3.21)$$

$$CAAR_{(-2,+2)} = \alpha_i + \lambda_1 \widehat{FRL}_{it} + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \varepsilon_{it} \quad (3.22)$$

$$CAAR_{(-3,+3)} = \alpha_i + \lambda_1 \widehat{FRL}_{it} + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \varepsilon_{it} \quad (3.23)$$

$$CAAR_{(-4,+4)} = \alpha_i + \lambda_1 \widehat{FRL}_{it} + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \varepsilon_{it} \quad (3.24)$$

$$CAAR_{(-5,+5)} = \alpha_i + \lambda_1 \widehat{FRL}_{it} + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \varepsilon_{it} \quad (3.25)$$

Where $CAAR_{(-1,+1)}$ is the cumulative average abnormal returns for three days from day -1 prior to the date of the event to day +1 after the event date; $CAAR_{(-2,+2)}$ is the cumulative average abnormal returns for five days from day -2 prior to the date of the event to day +2 after the event date; $CAAR_{(-3,+3)}$ is the cumulative average abnormal returns for seven days from day -3 prior to the date of the event to day +3 after the event date; $CAAR_{(-4,+4)}$ is the cumulative average abnormal returns for nine days from day -4 prior to the date of the event to day +4 after the event date; $CAAR_{(-5,+5)}$ is the cumulative average abnormal returns for nine days from day -5 prior to the date of the event to day +5 after the event date; α_i stands for the constant or the intercept of the model for security *I*; $\widehat{FRL}_{it}$ denotes the estimated or the expected financial reporting lag of

security I in period t (fitted values of residuals obtained from the Equation 3.20), $\lambda_1, \beta_1, \beta_2$ constitute the coefficient; and ε_{it} is error term for the company I in period t.

Control Variables:[56]
$SIZE_{it}$ is firm size (Kross & Schroeder 1984; Pevzner, Xie & Xin 2015);
LEV_{it} is leverage/capital structure (Leone, Wu & Zimmerman 2006; Pevzner, Xie & Xin 2015).

3.5.3.2 Robustness Analysis

To check the robustness of main analysis, this study applies common effect model (CEM) using the actual days of financial reporting lag (FRL). The model to test the robustness analysis is as follows:

$$CAAR_{(-1,+1)} = \alpha_i + \beta_1 FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it} \quad (3.26)$$

$$CAAR_{(-2,+2)} = \alpha_i + \beta_1 FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it} \quad (3.27)$$

$$CAAR_{(-3,+3)} = \alpha_i + \beta_1 FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it} \quad (3.28)$$

$$CAAR_{(-4,+4)} = \alpha_i + \beta_1 FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it} \quad (3.29)$$

$$CAAR_{(-5,+5)} = \alpha_i + \beta_1 FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it} \quad (3.30)$$

Where $CAAR_{(-1,+1)}$ is the cumulative average abnormal returns for three days from day -1 prior to the date of the event to day +1 after the event date; $CAAR_{(-2,+2)}$ is the cumulative average abnormal returns for five days from day -2 prior to the date of the event to day +2 after the event date; $CAAR_{(-3,+3)}$ is the cumulative average abnormal returns for seven days from day -3 prior to the date of the event to day +3 after the event date; $CAAR_{(-4,+4)}$ is the cumulative average abnormal returns for nine days from day -4 prior to the date of the event to day +4 after the event date; $CAAR_{(-5,+5)}$ is the cumulative average abnormal returns for nine days from day -5 prior to the date of the event to day +5 after the event date; α_i stands for the constant or the intercept of the model for security I; FRL_{it} denotes for the number of days between the end of a company's financial year and the submission date of annual financial report to the Financial Service Authority of Indonesia; $\beta_1, \beta_2, \beta_3$ constitute the coefficient (the slope of the model); and ε_{it} is error term for the security I in period t.

[56] Firm size and leverage are used as a control variable because they are widely used by prior research in the event study, particularly to investigate the relationship between financial reporting lag and stock market reactions. Bernerth and Aguinis (2016) described criteria to be a control variable, among other things are as follows: (1). It has been used as a control variable in previous study, (2). It can anticipate an association between a control variable and the variables being estimated, (3). Previous study found relationship between the control variable and the variables being estimated.

3.5.3.3 Dynamic Generalized Method of Moments

In addition to applying a two-stage least square model, this study also used dynamic generalized method of moments (GMM) to address the endogeneity problem. Ullah, Akhtar and Zaefarian (2018) stated that endogeneity bias can be caused by several factors, and there are several techniques for mitigating it; for example, the dynamic generalized method of moments (GMM) is used to handle panel data (i.e. dynamic endogeneity bias), whereas two-stage least squares (2SLS) or three-stage least squares (3SLS) are commonly used for survey data. Ullah, Akhtar and Zaefarian (2018) elaborated further that in dynamic panel data, the cause-and-effect connection for underlying phenomena is often dynamic across time. When the present value of an independent variable is influenced by previous values of the dependent variable, this is referred to as dynamic endogeneity (Li et al. 2021). Dynamic panel data estimate approaches capture this by using lags of the dependent variables as explanatory factors. As a result, lags in the dependent variables are utilised as tools to manage this endogenous relationship.

In the context of current research, the current value of financial reporting lag may be influenced by prior value of stock market reactions. To reflect this, dynamic panel data estimation approaches employ lags of the dependent variables as explanatory factors (Ullah, Akhtar & Zaefarian 2018). Lagged dependent variable values are thus employed as instruments to influence this endogenous connection. Hence, instead of using the external instrumental variables as used in the two-stage least square model, the dynamic GMM uses internal instrumental variables by creating lag value of the dependent variable as the independent variable (Roodman 2009). In this study, the internal instrumental variables employed two lags of dependent variables. Wintoki, Linck and Netter (2012) argued that two lags are adequate to represent the persistence of the dependent variable. As a result, when compared to the OLS model, the use of internal data by adding the dependent variable's lag values provides a superior estimate of dynamic GMM model (Ullah, Akhtar & Zaefarian 2018). The results of data analysis by two-stage least square model, the OLS model, and the dynamic GMM model can be compared. The comparison of findings among the various models could contribute to the research methodology. Therefore, the equation for the dynamic GMM, as adapted to Ullah, Akhtar and Zaefarian (2018), Li et al. (2021), Roodman (2009), and Wintoki, Linck and Netter (2012), is as follows:

$$CAAR_{(-1,+1)} = \alpha_i + \beta_1 CAAR_{(-1,+1)i-1} + \beta_2 CAAR_{(-1,+1)i-2} + \beta_3 FRL_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \varepsilon_{it} \quad 3.31$$

$$CAAR_{(-2,+2)} = \alpha_i + \beta_1 CAAR_{(-2,+2)i-1} + \beta_2 CAAR_{(-2,+2)i-2} + \beta_3 FRL_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \varepsilon_{it} \quad 3.32$$

$$CAAR_{(-3,+3)} = \alpha_i + \beta_1 CAAR_{(-3,+3)i-1} + \beta_2 CAAR_{(-3,+3)i-2} + \beta_3 FRL_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \varepsilon_{it} \quad 3.33$$

$$CAAR_{(-4,+4)} = \alpha_i + \beta_1 CAAR_{(-4,+4)i-1} + \beta_2 CAAR_{(-4,+4)i-2} + \beta_3 FRL_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \varepsilon_{it} \quad 3.34$$

$$CAAR_{(-5,+5)} = \alpha_i + \beta_1 CAAR_{(-5,+5)i-1} + \beta_2 CAAR_{(-5,+5)i-2} + \beta_3 FRL_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \varepsilon_{it} \quad 3.35$$

Where $CAAR_{(-1,+1)}$ is the cumulative average abnormal returns for three days from day -1 prior to the date of the event to day +1 after the event date; $CAAR_{(-2,+2)}$ is the cumulative average abnormal returns for five days from day -2 prior to the date of the event to day +2 after the event date; $CAAR_{(-3,+3)}$ is the cumulative average abnormal returns for seven days from day -3 prior to the date of the event to day +3 after the event date; $CAAR_{(-4,+4)}$ is the cumulative average abnormal returns for nine days from day -4 prior to the date of the event to day +4 after the event date; $CAAR_{(-5,+5)}$ is the cumulative average abnormal returns for nine days from day -5 prior to the date of the event to day +5 after the event date; α_i stands for the constant or the intercept of the model for security *I*; FRL_{it} denotes for the number of days between the end of a company's financial year and the submission date of annual financial report to the Financial Service Authority of Indonesia; $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ constitute the coefficient (the slope of the model); and ε_{it} is error term for the security *I* in period *t*,

$CAAR_{(-1,+1)i-1}$ = one lag of the cumulative average abnormal returns for three days from day -1 prior to the date of the event to day +1 after the event date,

$CAAR_{(-1,+1)i-2}$ = two lags of the cumulative average abnormal returns for three days from day -1 prior to the date of the event to day +1 after the event date,

$CAAR_{(-2,+2)i-1}$ = one lag of the cumulative average abnormal returns for five days from day -2 prior to the date of the event to day +2 after the event date,

$CAAR_{(-2,+2)i-2}$ = two lags of the cumulative average abnormal returns for five days from day -2 prior to the date of the event to day +2 after the event date,

$CAAR_{(-3,+3)i-1}$ = one lag of the cumulative average abnormal returns for seven days from day -3 prior to the date of the event to day +3 after the event date,

$CAAR_{(-3,+3)i-2}$ = two lags of the cumulative average abnormal returns for seven days from day -3 prior to the date of the event to day +3 after the event date,

$CAAR_{(-4,+4)i-1}$ = one lag of the cumulative average abnormal returns for nine days from day -4 prior to the date of the event to day +4 after the event date,

$CAAR_{(-4,+4)i-2}$ = two lags of the cumulative average abnormal returns for nine days from day -4 prior to the date of the event to day +4 after the event date,

$CAAR_{(-5,+5)i-1}$ = one lag of the cumulative average abnormal returns for nine days from day -5 prior to the date of the event to day +5 after the event date,
$CAAR_{(-5,+5)i-2}$ = two lags of the cumulative average abnormal returns for nine days from day -5 prior to the date of the event to day +5 after the event date.

3.5.4 The Asymmetric Stock Market Reactions Between Early and Late Reporting Lag

Adapted from Wickremasinghe (2004), the least square model to test the H_9, referring to RQ3, was used. This study divides early and late financial reporting firms using dummy variable. Firms with early financial reporting lag are coded '1', otherwise are coded '0'. The mandatory annual financial reporting lag in Indonesia over the period 2014-2017 is 90 days after the end of financial year. Therefore, firms submitting their annual financial reports to the Financial Service Authority of Indonesia (Otoritas Jasa Keuangan/OJK) within 90 days since the end of financial year are categorised as early financial reporting lag, otherwise are categorised as late financial reporting lag.[57] The models for testing the asymmetric stock market reactions between early and late financial reporting lag are as follows:

$$CAAR_{(-1,+1)} = \alpha_i + \beta_1 D\_FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it} \quad (3.36)$$

$$CAAR_{(-2,+2)} = \alpha_i + \beta_1 D\_FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it} \quad (3.37)$$

$$CAAR_{(-3,+3)} = \alpha_i + \beta_1 D\_FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it} \quad (3.38)$$

$$CAAR_{(-4,+4)} = \alpha_i + \beta_1 D\_FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it} \quad (3.39)$$

$$CAAR_{(-5,+5)} = \alpha_i + \beta_1 D\_FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it} \quad (3.40)$$

Where $CAAR_{(-1,+1)}$ is the cumulative average abnormal returns for three days from day -1 prior to the date of the event to day +1 after the event date; $CAAR_{(-2,+2)}$ is the cumulative average abnormal returns for five days from day -2 prior to the date of the event to day +2 after the event date; $CAAR_{(-3,+3)}$ is the cumulative average abnormal returns for seven days from day -3 prior to the date of the event to day +3 after the event date; $CAAR_{(-4,+4)}$ is the cumulative average abnormal returns for nine days from day -4 prior to the date of the event to day +4 after the event date; $CAAR_{(-5,+5)}$ is the cumulative average abnormal returns for nine days from day -5 prior to the date of the event to day +5 after the event date; D_FRL_{it} denotes dummy variable, coded 1 for firms with early annual financial reporting lag, otherwise is coded 0; α_i is constant; $\beta_1, \beta_2, \beta_3$, are coefficients; and ε_{it} is error term.

[57] However, firms submitting their annual financial reports after 90 days since the end of financial year are still categorised as early financial reporting lag if the day of 90th falls in holiday until the first working day of the listed firms submitting their annual financial reports.

Control Variables:
$SIZE_{it}$ is firm size (Kross & Schroeder 1984; Pevzner, Xie & Xin 2015);
LEV_{it} is leverage/capital structure (Leone, Wu & Zimmerman 2006; Pevzner, Xie & Xin 2015).

Adapted from Wickremasinghe (2004), Lobo (2000), and Leone, Wu and Zimmerman (2006), Wald test was used to test the asymmetric stock market reactions between early and late financial reporting firms. The hypothesis testing is as follows:

If the Wald test rejects the null hypothesis of $\beta_1 = 0$, then the asymmetric is constructed. If the Wald test presents $\beta_1 > 0$, the stock market reactions between early and late financial reporting lag are asymmetric. Meanwhile, if the Wald test shows $\beta_1 = 0$, the stock market reactions between early and late financial reporting lag are symmetric, meaning that the null hypothesis is accepted.

3.6 Chapter Summary

This chapter describes data and sample, source of data, sampling procedure, and data analysis. The samples are companies from various business sectors at IDX, including agriculture, infrastructure, utilities, transportation, mining, property, real estate, building construction, trading, service, and investment companies. The sample size is determined by around 35 per cent of the population in each sector using stratified random sampling. The data were collected from online resources like the website of IDX for annual financial reports as well as relevant data, and the site of Yahoo Finance for historical stock prices, dividend payment, and market index. Some financial data like the company's attributes and financial ratio were accessed through Orbis from Bureau van Dijk using Victoria University's library databases.

Data analysis to answer research question one (RQ1) applied fixed effect model of unbalanced panel data analysis. Alternative proxies for profitability and firm size are also used to test the robustness of the result from the main analysis. For analysing stock market reactions and to answer research questions two (RQ2), the multivariate analysis using two-stage least square and dynamic GMM were applied. Meanwhile, to answer research question three (RQ3), this study divided firms with early and late financial reporting lag. Cumulative average abnormal returns (CAAR) were used to indicate the stock market reactions for RQ2 and RQ3 using adjusted beta procedures recommended by Scholes and Williams (1977) and Dimson (1979).

The next chapter will discuss data analysis for determinants of financial reporting lag to answer the research question one (RQ1).

Chapter 4

Discussion and Analysis Results on Determinants of Financial Reporting Lags: Impact of Taxation

4.1 Introduction

The previous chapter presents data, sample, and research method. This chapter discusses empirical results to answer the research question one (RQ1): 'What is the impact of the audit report lag, firm size, profitability, related party transactions, leverage, audit opinion, and the tax audit on the financial reporting lag of the listed companies in Indonesia?' This chapter is structured as follows: Section 4.2 presents descriptive statistics of dependent and independent variables. Section 4.3 discusses diagnostic tests of unbalanced panel data, which include the test to select between common effect model (CEM), fixed effect model (FEM), and random effect model (REM). Also, some classical assumption tests are discussed in this section. The regression results of the analysis using main proxy with and without dummy time variables are described in Section 4.4. Section 4.5 demonstrates the regression result of analysis using alternative proxy with and without dummy time effect variables. Section 4.6 is a chapter summary.

4.2 Descriptive Statistics

Descriptive statistics are intended to present the nature of the data analysed in the model, both dependent and independent variables. Table 4 illustrates descriptive statistics for unbalanced panel data from 2014 to 2017. According to Table 4, the highest financial reporting lag is 188 days, and the lowest one is 32 days. The averages of FRL are below 90 days, which are 85 days. The mandatory financial reporting lags are within 3 (three) months or around 90 days since the end of a company's financial year, according to the Decision of Chairman of Capital Market Supervisory Agency and Financial Institutions (Badan Pengawas Pasar Modal dan Lembaga Keuangan/Bapepam-LK) issued on July 5th, 2011, number KEP-346/BL/2011 regarding 'the Submission of Periodical Financial Statements for Listed and Public Firms.' Therefore, the average financial reporting lags for various industry sectors of the Indonesian listed firms for all observed periods are shorter than the financial reporting lags for the Indonesian listed manufacturing firms in the study of Rahmawati (2013), 97 days, reporting the highest financial reporting lags of 314 days. Those conditions indicate that the financial reporting compliance of various industry sectors at IDX is much better than the financial reporting compliance of manufacturing listed firms in Indonesia.

The plausible reasons for the improvement in the financial reporting timeliness are the pressure of huge external investors and the implementation of good internal control as well as accounting

system in listed firms. Big companies have large external interests (shareholders), which force them to submit annual reporting early. In addition, some big companies also apply good internal control and accounting system so that it helps them shorten audit process and financial reporting timeliness. The average reporting compliance below the regulatory requirement was also presented by Khoufi and Khoufi (2018) using France listed firms. The mandatory reporting timeliness was 180 days, meanwhile, the average reporting timeliness was 76 days in 2014 and 90 days in 2010. The improvement of reporting timeliness was also experienced by the listed companies in New York Stock Exchange from 1960 to 1974 as presented by Givoly and Palmon (1982). Givoly and Palmon (1982) showed the average of reporting delay for 37 days, and the required announcements of annual reporting by rule was 90 days since the end of the American listed firms' fiscal year.

Moreover, according to Table 4, the highest audit report lags are 161 days. Meanwhile, the lowest ARL are 28 days, and the averages ARL are 76 days. Those averages are much higher than the averages of ARL in the study of Owusu-Ansah (2000), reporting 62 days for Zimbabwean listed firms to have the audit report date after the end of a company's financial year. The mandatory financial reporting lags in Zimbabwe were 120 days for the observed periods according to the study of Owusu-Ansah (2000). These phenomena occur due to the better audit report process for the listed firms in Zimbabwe compared to those in Indonesia for the corresponding observed periods. However, the average ARL is in line with the average FRL for the Indonesian listed firms, which indicates the positive relationship between the FRL and the ARL from 2014 to 2017.

Firm size is calculated from the total assets of a listed company. The minimum value of total assets is 10,168 thousand US dollar, and the maximum value of total assets is 21,835,696 thousand US dollar. Meanwhile, the average value of total assets is 1,021,165 thousand US dollar. Therefore, the minimum and maximum value of total assets for the Indonesian listed companies for various industry sectors is far different, indicating a wide range of firm size for the listed companies. Furthermore, profitability (PROF) is measured by the ratio of operating income on total assets (OROA). The mean value of profitability is 0.07, meaning that the average operating income is 7.68% from the total assets. Meanwhile, the lowest and the highest values of profitability are -0.21 and 3.05, respectively. It indicates that the lowest operating loss is -21% compared to the total assets. Also, the highest operating income to the total assets is 305% for the Indonesian listed various industry sectors in Indonesia from 2014 to 2017.

Further, the maximum value of RPTs is 7,473,928.00 thousand US dollar. Meanwhile, the minimum value of RPTs is 3.00 thousand US dollar. The average value of RPTs is 155,953.00 thousand US dollar. The highest value of RPTs is derived from local RPTs (sales of goods or purchase of raw material) in which the transactions are conducted within the Indonesian territory,

not involving tax-haven country. The local RPTs contribute to the total value of RPTs significantly, accounting for 94%. Meanwhile, the lowest value of RPTs is derived from a payment of services.

For leverage variable, the maximum value of leverage is 20.43, describing 2043% of debt compared to the equity of a company. Meanwhile, the minimum value of leverage is -9.45, meaning that debt to equity ratio minimum is -945%. The mean value of leverage is 1.2900, which explains that the average debt to equity ratio is 129%. The Indonesian tax regulation issued by the Indonesian tax authority in 2016 restricted debt to equity ratio (DER) for the Indonesian companies about 4:1, meaning that the maximum DER is 400%. The descriptive data from 2014 to 2017 about leverage indicate that the DER of the Indonesian listed firms from various industry sectors are within the threshold regulated by the Indonesian tax authority, showing the average DER about 129%. Meanwhile, the highest DER of 2043% is derived from the data in 2014 when the Indonesian DER tax regulation had not been ratified.

Table 4 Descriptive statistics of unbalanced panel data from 2014 to 2017

Variables	FRL	ARL	SIZE	PROF	RPTs	LEV
Unit of Measurements	**Number of days**	**Number of days**	**In thousand USD**	**Ratio**	**In thousand USD**	**Ratio**
Mean	85.47	76.23	1,021,165	0.07	155,953	1.29
Median	89.00	81.00	363,738	0.06	8,020	0.95
Maximum	188.00	161.00	21,835,696	3.05	7,473,928	20.43
Minimum	32.00	28.00	10,168	-0.21	3	-9.45
Observations	468	468	468	468	468	468

NOTE: FRL stands for Financial Reporting Lag, the number of days between the date of submission of annual financial statements to the Financial Services Authority of Indonesia (OJK) and the financial year-end; ARL presents audit Report Lag, the number of days between financial year-end and the date of auditor's signature; SIZE shows firm size, the total assets in thousand US dollar; PROF constitutes profitability, the ratio of operating income on total assets (OROA); RPTs reflects Related Party Transactions, total related party transactions in thousand US dollar; LEV describes leverage, debt to equity ratio.

4.3 Diagnostic Tests

This section describes diagnostic tests conducted in this study. The first diagnostic tests performed in this study is intended to select between common effect model (CEM), fixed effect model (FEM), or random effect model (RAM) for the unbalance panel data. Meanwhile, the other diagnostic tests comprise some classical assumption which should be fulfilled by a statistical model, which includes normality, heteroscedasticity, autocorrelation, and multicollinearity.

4.3.1 Determining A Model in Unbalanced Panel Data

The first step performed in this analysis is regressing the response variable on the predictor variables using common effect model (CEM) and fixed effect model (FEM). The next stage is applying Chow Test to choose between CEM and FEM. According to the Chow test, Cross-section Chi-square is 313.0446, with a p-value of 0.0000 ($\alpha < 0.05$), meaning that the FEM is better than the CEM. The next step is regressing the response variable on the predictor variables by applying random effect model (REM). Hausman test was used to decide which one is better between the FEM and the REM. Based on the Hausman test, the Cross-section random is 31.6654, with a p-value of 0.0000 ($\alpha < 0.05$), describing that the FEM is better than the REM. Due to the eligible FEM by the Hausman test, the Breusch-Pagan Lagrange Multiplier test (BPLM-test) to select between the REM and the CEM is not required for the main analysis without dummy time variable. Furthermore, the same procedures were also conducted for the main analysis with dummy time variables. According to the Chow test, the Cross-section Chi-square is 316.7666 with p-value of 0.0000 ($\alpha < 0.05$), showing that the FEM is better than the CEM. Also, according to the Hausman test, the Cross-section random is 30.4622 with p-value of 0.0007 ($\alpha < 0.05$), meaning that the FEM is better than the REM.

4.3.2 Normality

Normality test is purposed to confirm if the value of residuals in a model is normally distributed. As recommended by Damodar (2004, p. 147), the normality test uses the Jarque-Bera analysis. Non-normality residuals were detected in the model using the Jarque-Bera test indicated by the p-value < 0.05. Logarithm of dependent variable and some independent variables (except the independent variables containing non-positive number like ratio and dummy variable) are applied to solve the non-normality problem. The variables transformed into logarithm are financial reporting lag, audit report lag, firm size, and related party transactions. This approach was adopted from prior research such as Al-Ghanem and Hegazy (2011), Ng and Tai (1994), Carslaw and Kaplan (1991), and Ashton et al. (1987).

4.3.3 Heteroscedasticity

Heteroscedasticity test is intended to detect the inequality of residual variance among observations in a model. The heteroscedasticity test was conducted by applying the Glejser method. Gujarati and Porter (2010, p. 288) emphasised performing the Glejser approach to detect heteroscedasticity by regressing between absolute residuals and predictors. If the level of significance (p-value) of t partial (α) is > 0.05, the residuals are homoscedastic, meaning no heteroscedastic problem. However, the heteroscedasticity problem occurs in a model if the level of significance or p-value for t-partial (α) is < 0.05, meaning that there is a correlation between

the error term (absolute residuals) and the predictors. According to the test, the heteroscedasticity problem was detected in the model indicated by Significance of t partial < 0.05 for audit report lag variable with t-statistic of -2.4629 and p-value of 0.0143 (α < 0.05). To solve the heteroscedasticity problem, this study also converts some variables (except variables containing non-positive numbers) into logarithm as conducted to solve the non-normality issue.

4.3.4 Autocorrelation

Autocorrelation test is aimed to verify if the error terms in a period (t) has no correlation with the error term in prior period (t-1) for a linear regression model. The autocorrelation test uses Breusch-Godfrey Serial Correlation LM test available on EViews 12 student version. The results of the test were the p-values of Chi-Square < 0.05, indicating the autocorrelation occurs on the model. In addition, the autocorrelation test was conducted using Durbin-Watson stat (DW) test recommended by Durbin and Watson (1971). According to the test, the autocorrelation problem exists in the model because the value of Durbin-Watson stat (DW) is beyond the requirement. For example, the model of main proxy without dummy time variables shows the value of DW accounting for 3.0233 > DU (1.8744) and > 4-DU (2.1255). Ideally the value of the Durbin Watson is between dU and 4-dU or dU < DW < 4-dU (Gujarati & Porter 2010, p. 324). Damodar (2004, p. 450) recommended Markov first-order autoregressive (AR1) mechanism to solve the autocorrelation problem, which assumes that the error terms in the current period is linearly related to the error terms in the previous period. This approach employs the first lag of dependent variable as independent variable in the model. The dependent variable is Log FRL (logarithm of financial reporting lag), and the first lag of it is Log $FRL_{(t-1)}$ to be included as independent variable.

4.3.5 Multicollinearity

Multicollinearity test is used to detect a strong relationship among independent variables. Pearson correlation coefficient matrix was used as an indicator to detect multicollinearity among independent variables. Multicollinearity problems exist if the coefficient correlation is > 0.9 (Tabachnick, Fidell & Ullman 2007). According to the result, there is multicollinearity problem in the model although the coefficient correlation among independent variables in the model is below 0.9, however, some p-values of correlation coefficients are significant (α < 0.05). To avoid spurious findings due to the multicollinearity problems, this study uses LASSO (Least Absolute Shrinkage and Selection Operator) regression as adapted from Reid, Tibshirani and Friedman (2016). Jang and Anderson-Cook (2017) stated that LASSO regression is useful for handling multicollinearity problems in a dataset. Table 5 describes Pearson Correlation Coefficient Matrix to show the relationship among independent variables.

Table 5 Pearson Correlation Coefficient Matrix

Correlation t-Statistic Probability	LOGARL	SIZE	PROF	RPTS	LEV	OPIN	TAX
LOGARL	1.000000 ----- -----						
SIZE	-0.302014 -5.631702 0.0000***)	1.000000 ----- -----					
PROF	-0.141468 -2.540334 0.0116**)	0.119496 2.139538 0.0332**)	1.000000 ----- -----				
RPTS	-0.272048 -5.025585 0.0000***)	0.499960 10.26210 0.0000***)	0.165940 2.991284 0.0030***)	1.000000 ----- -----			
LEV	-0.004090 -0.072712 0.9421	0.129205 2.316214 0.0212**)	0.015309 0.272170 0.7857	0.055923 0.995672 0.3202	1.000000 ----- -----		
OPIN	0.049964 0.889283 0.3745	-0.152934 -2.750978 0.0063***)	-0.077414 -1.380288 0.1685	-0.069576 -1.239810 0.2160	-0.046459 -0.826765 0.4090	1.000000 ----- -----	
TAX	-0.130222 -2.334757 0.0202**)	0.232405 4.247625 0.0000***)	0.009562 0.169983 0.8651	0.227283 4.148856 0.0000***)	0.056762 1.010659 0.3130	-0.139675 -2.507497 0.0127**)	1.000000 ----- -----

NOTE: $LOGARL_i$ presents Logarithm of Audit Report Lag of company *I*. Audit Report Lag is the number of days between financial year-end and the date of audit report; $SIZE_i$ denotes firm size of company *I*, the logarithm of total assets; $PROF_i$ describes profitability of company *I*, the ratio of operating income on total assets (OROA); $RPTs_i$ constitutes Related Party Transactions of company *I*, the logarithm of total related party transactions; LEV_i explains leverage of company *I*, debt to equity ratio; $OPIN_i$ shows audit opinion of company *I*, dummy variable, unqualified audit opinion is coded '0', and otherwise is coded '1'; TAX_i stands for tax audit of company *I*, dummy variables, firms exposed to tax audit is coded '1', otherwise is coded '0'.
***) Significant at 1% level.
**) Significant at 5% level.
*) Significant at 10 % level.

4.3.6 Coefficients Determination

According to Table 6, the LASSO regression results in relatively high coefficient determination indicated by the adjusted R^2 for 65.09%. The adjusted R^2 reflects the goodness of the fit of the fitted sample regression line, which explains the percentage of the total variation in the dependent variable defined by the single explanatory variable (Gujarati & Porter 2010, p. 102). The high value of adjusted R^2 in this study indicates the appropriate choice of predictors in the model. The large proportion of financial reporting lag, 65.09%, is explained by the predictors in this model. Meanwhile, around 34.91% of financial reporting lag is explained by other predictors outside this model. The value of adjusted R^2 in this study is much higher than prior studies. Rahmawati (2013, p. 141) presented the adjusted R^2 for multivariate analysis on determinants of financial reporting timeliness ranging from 11.11% to 11.36% for the unbalanced panel data regression with an actual time lag. Meanwhile, for the same topic of determinants of financial reporting timeliness, Pardede

(2016) provided the result of adjusted R^2 accounting for 12.5%, 10.8%, 11.9%, 15.2%, and 19.7% in 2010, 2011, 2012, 2013, and 2014, consecutively.

4.3.7 Significance of the Model

According to the LASSO regression result in Table 6, the model presents a significant F-statistics indicated by p-value accounting for 0.0000 < 0.05 (α < 5%) for F-statistics of 74.9089. Also, Table 7 describes a significant F-statistics of 90.0634 with p-value of 0.000 < 0.05. These data indicate that all independent variables significantly influence the dependent variable in the LASSO regression. Therefore, the model is acceptable. Furthermore, Table 6 presents the LASSO regression result of unbalanced panel data without dummy time effect from 2014 to 2017. Meanwhile, Table 7 provides the LASSO regression result of unbalanced panel data with dummy time effect from 2014 to 2017.

Table 6 LASSO Regression Result of Unbalanced Panel Data from 2014 to 2017

LASSO Regression				
Variables	**Expected Sign**	**Coefficients**	**t-Value**	**p-Value**
Constant		1.4532	7.4632	0.0000***)
LOGARL	+	0.5097	13.2433	0.0000***)
LOGSIZE	-	-0.0122	-2.2814	0.0232**)
PROF	-	-0.0505	-0.9062	0.3655
LOGRPTs	+	-0.0039	-1.3074	0.1920
LEV	+	0.0026	0.5174	0.6052
OPIN	+	-0.0781	-1.3071	0.1921
TAX	+	0.0039	0.2426	0.8084
$LOGFRL_{(t-1)}$		0.2179	4.8755	0.0000***)
Goodness of Fit:				
Adjusted R Square		0.6509		
F-Statistic		74.9089		
p-Value		0.0000***)		
Durbin-Watson stat		1.9804		
Sample		2014-2017		

NOTE: $LOGFRL_i$ stands for Logarithm of Financial Reporting Lag of company *I*. Financial Reporting Lag is the number of days between the date of submission of annual financial statements to the Financial Services Authority of Indonesia (OJK) and the financial year-end; $LOGARL_i$ presents Logarithm of Audit Report Lag of company *I*. Audit Report Lag is the number of days between financial year-end and the date of audit report; $SIZE_i$ denotes firm size of company *I*, the logarithm of total assets; $PROF_i$ describes profitability of company *I*, the ratio of operating income on total assets (OROA); $RPTs_i$ constitutes Related Party Transactions of company *I*, the logarithm of total related party transactions; LEV_i explains leverage of company *I*, debt to equity ratio; $OPIN_i$ shows audit opinion of company *I*, dummy variable, unqualified audit opinion is coded '0', and otherwise is coded '1'; TAX_i stands for tax audit of company *I*, dummy variables, firms exposed to tax audit is coded '1', otherwise is coded '0'; $LOGFRL_{i(t-1)}$ is one lag period of $LOGFRL_i$.

Model: $LOGFRL_i = \alpha_i + \beta_1 LOGARL_i + \beta_2 LOGSIZE_i + \beta_3 PROF_i + \beta_4 LOGRPTs_i + \beta_5 LEV_i + \beta_6 OPIN_i + \beta_7 TAX_i + LOGFRL_{i(t-1)} + \mu_i$, referring to the Equation 3.1.

*) Significant at the 10% level

**) Significant at the 5% level
***) Significant at the 1% level

Table 7 LASSO Regression Result of Unbalanced Panel Data with Dummy Time Effect from 2014 to 2017

LASSO Regression				
Variables	**Expected Sign**	**Coefficients**	**t-Value**	**p-Value**
Constant		1.9903	15.4666	0.0006***)
LOGARL	+	0.6241	25.4262	0.0000***)
LOGSIZE	-	-0.0169	-3.8944	0.0001***)
PROF	-	-0.0240	-0.8142	0.4159
LOGRPTs	+	-0.0039	-1.6266	0.1045
LEV	+	-0.0015	-0.5002	0.6172
OPIN	+	-0.0358	-0.6087	0.5430
TAX	+	-0.0093	-0.7226	0.4702
d1		0.0267	1.7526	0.0803*)
d2		0.0456	3.0240	0.0026***)
d3		-0.0091	-0.6340	0.5264
Goodness of Fit:				
Adjusted R Square		0.6560		
F-Statistic		90.0634		
p-Value		0.0000***)		
Durbin-Watson stat		1.7704		
Sample		2014-2017		

NOTE: $LOGFRL_i$ stands for logarithm of Financial Reporting Lag of company *I*, the number of days between the date of submission of annual financial statements to the Financial Services Authority of Indonesia (OJK) and the financial year-end; $LOGARL_i$ shows logarithm of Audit Report Lag of company *I*, the number of days between financial year-end and the date of auditor's signature; $LOGSIZE_i$ denotes firm size of company *I*, the logarithm of total assets; $PROF_i$ describes profitability of company *I*, the ratio of operating income on total assets (OROA); $LOGRPTs_i$ reflects Related Party Transactions of company *I*, the logarithm of total related party transactions; LEV_i denotes leverage of company *I*, debt to equity ratio; $OPIN_i$ explains audit opinion of company *I*, dummy variable, unqualified audit opinion is coded '0', and otherwise is coded '1'; TAX_i shows tax audit of company *I*, dummy variables, firms exposed to tax audit is coded '1', otherwise is coded '0'; dummy variables, firms exposed to tax audit is coded '1', otherwise is coded '0'; $d1 - d3$ are dummy time variables for 2014-2016. Code '1' is used for dummy variables of 2014-2016, other wise is coded by '0'.
Model: $LOGFRL_i = \alpha_i + \beta_1 LOGARL_i + \beta_2 LOGSIZE_i + \beta_3 PROF_i + \beta_4 LOGRPTs_i + \beta_5 LEV_i + \beta_6 OPIN_i + \beta_7 TAX_i + \beta_8 d1 + \beta_9 d2 + \beta_{10} d3 + \mu_i$, referring to the Equation 3.2.
*) Significant at the 10% level
**) Significant at the 5% level
***) Significant at the 1% level

4.4 Unbalanced Panel Data Regression Results: Discussion and Analysis

This section explains the analysis and discussion about the LASSO regression results. The regression is supposed to test the hypotheses based on research questions one (RQ1). The hypotheses discussed in this section are hypothesis one (H_1), hypothesis two (H_2), hypothesis three (H3), hypothesis four (H_4), hypothesis five (H_5), hypothesis six (H_6), and hypothesis 7 (H_7).

4.4.1 Audit Report lag (ARL)

According to H_1, audit report lag (ARL) is predicted to have a positive association with financial reporting lag (FRL). Firms with long audit report lag tend to have long financial reporting lag. The regression results in Table 6 show that the audit report lag has a positive relationship with financial reporting lag with a significant level of 1%, which is as expected as that in the hypothesis. The coefficient of logarithm audit report lag is 0.5097 with a t-value of 13.2433 and p-value for 0.0000 < 0.01 (α < 1%), representing that the audit report lag has a positive and significant relationship with the financial reporting lag. Also, Table 7 presents a significantly positive relationship between audit report lag and financial reporting lag with 1% significant level. These results are consistent with those in the study of Owusu-Ansah (2000), who found that audit report lead time is statistically significant related to financial reporting timeliness (pre-financial reporting lags). These results describe that by the time an auditor completes the public audit toward the listed companies, the annual reporting is submitted to the authority. In this condition, the role of external auditor is very important for a listed company to submit its annual report early or late.

In addition, there have been several reasons why the audit report lag has a positive and significant relationship with financial reporting lag. Bamber, Bamber and Schoderbek (1993) and Ashton et al. (1987, p. 275) stated that the ARL or audit delay may impact on the timeliness of the annual report's release. Chan, Luo and Mo (2016), Eghlaiow, S, Wickremasinghe, G and Sofocleous, S (2012), and Abernathy et al. (2017) also argued that the ARL is the most important single determinant impacting on the financial reporting timeliness. Givoly and Palmon (1982) also stated that the audit report lag is the most important single determinants of financial reporting lag (earnings announcement timeliness). Further, Durand (2019) also stated that long ARL can delay the revelation of financial information to the markets. Therefore, based on the empirical results, it is proved that the ARL has a positive and significant relationship with financial reporting lag. The bigger the ARL, the longer the financial reporting lag is. Therefore, this study provides empirical results to fully support the hypothesis one (H_1), which predicts that firms with long audit report lag experience longer financial reporting lag than those with short audit report lag.

4.4.2 Firm Size (SIZE)

Firm size is predicted to have a negative relationship with financial reporting lag according to H_2, meaning that big firms experience shorter financial reporting lag than do small firms. As shown in Table 6 and Table 7, firm size shows a negative and significant relationship with financial reporting lag, which is consistent with the direction in the hypothesis. According to Table 6, the coefficient of logarithm firm size is -0.0122 with t-value of -2.2814 and p-value of 0.0232

(significant at 5% level or $\alpha < 5\%$). Similarly, Table 7 shows a 1% significant level of negative relationship between firm size and financial reporting lag with p-value of 0.0001 for the coefficient of -0.0169. These data indicate that big company has a good accounting system and internal control, which could help a public auditor shorten independent audit toward the company. In other words, big firms have reasonable internal control and better financial reporting systems than do small firms, which could help independent auditor performs public audit early. The top management of big firms can manage the company's assets and it can submit the annual financial reports timely.

Another reason could be the huge interest of big company by external investors, which force it to publish its annual report early (Davies & Whittred 1980). Therefore, evidence about significant and negative relationship between firm size and financial reporting lag is found, which fully support the H_2. The finding in this study is consistent with that in the study of Al-Ajmi (2008), Soltani (2002), Owusu-Ansah (2000), Chambers and Penman (1984), Dyer and McHugh (1975), that demonstrated a negative relationship between firm size and financial reporting timeliness. Therefore, the finding in this study contradicts the study of Pardede (2016) and Alkhatib (2012) in the service sector, that showed firm size is not a significant predictor for financial reporting timeliness. To sum up, this study is successful in extending the study by Al-Ghanem and Hegazy (2011), Jaggi and Tsui (1999), Ng and Tai (1994), Durand (2019), Eghlaiow, S, Wickremasinghe, GB and Sofocleous, S (2012), which showed that firm size is negatively associated with audit delay or audit report lag.

4.4.3 Profitability (PROF)

H_3 predicts the profitability of having a negative relationship with financial reporting lag. The higher the profit of a firm, the shorter the financial reporting lag is. Profitability (PROF) is measured by the ratio of operating profit on total assets (OROA). Table 6 and Table 7 show the negative values of coefficients for profitability, accounting for -0.0505 and -0.0240, respectively, which are the same direction as that expected in the hypothesis. Profitability is supposed to have a relationship with financial reporting lag in negative direction because profitability is one of the measurements used in a company's evaluation of its operational performance (Abdelrazik 2017, p. 56). Loss-making firms (bad news) tend to delay their financial reporting timeliness; meanwhile, profit-making firms (good news) tend to publish their annual financial statements early.

However, the coefficient estimates of profitability in Table 6 and Table 7 are not significant. These conditions could be caused by some reasons. For example, in 2015, some companies, which have a high value of profit, submit their annual financial statements lately. Also, some companies, which suffer from financial losses, provide their annual financial statements early, which are

contradictive to the hypothesis. PT. Surya Semesta Internusa Tbk (7%),[58] in property, real estate, and building construction, submits its financial reports quite lately, although it has a relatively high value of profit. Also, PT. Global Mediacom Tbk (7%), in trade, services, and investment sector, submits its financial statements lately with a relatively high value of profit. Also, PT. Saratoga Investama Sedaya Tbk (8%), in trade, services, and investment sector, submits its annual financial reports very lately, although it has a relatively high value of profit.

Moreover, the insignificant coefficient estimates of profitability in Table 6 and Table 7 explain no relationship between profitability and financial reporting lag. Therefore, this study fails to prove there is a significant relationship between profitability and financial reporting lag, which was found by some prior studies, for example, Owusu-Ansah (2000), Nor Izah Ku Ismail and Chandler (2004), Al-Ajmi (2008), Afify (2009), Daoud et al. (2014). However, this study supports the finding of Dyer and McHugh (1975) and Davies and Whittred (1980), who found that profitability has no statistically significant association with total reporting lag (total lag). Also, the finding in this study is consistent with the discovery in the study of Alkhatib (2012) for the service sector and Abdelrazik (2017), which presented an insignificant coefficient for the profitability variable. Hence, this study fails to extend the prior studies by Alkhatib (2012), Nelson and Norwahida Shukeri (2011), Rusmin and Evans (2017), Durand (2019), Khoufi and Khoufi (2018), Tina and Marko (2014), Bamber, Bamber and Schoderbek (1993), and Carslaw and Kaplan (1991), Baldacchino Peter (2016), who found that profitability has a significant relationship with audit report lag or audit delay.

4.4.4 Related Party Transactions (RPTs)

Related party transactions are assumed to have a positive relationship with financial reporting lag in H_4. Nekhili and Cherif (2011) analysed the relationship between RPTs and firm value in France. In their study, Nekhili and Cherif (2011) found that RPTs negatively impact firm value, particularly the transactions directly related to the managers, directors, and/or the main shareholders. The decrease of firm value is supposed to impact longer financial reporting lag. The higher the number of RPTs, the lower the firm value of a company, and finally the longer the financial reporting lag is. Furthermore, based on the managerial accounting perspective, the RPTs can be used as a tool for minimising tax payments (Weygandt, Kimmel & Kieso 2009, pp. 315-24). Weygandt, Kimmel and Kieso (2009, p. 315) stated that the RPTs are intended to maximize the returns to the whole company. Habib and Muhammadi (2018) argued that an independent

[58] 7% is the operating ratio on total assets (OROA) for PT. Surya Semesta Internusa Tbk. The OROA for other listed companies explained in this section is presented in the same way as it is for the OROA of PT. Surya Semesta Internusa Tbk, unless mentioned otherwise.

auditor understands the implication of the RPTs, which exerts additional audit effort to scrutinise yearly financial statements. That condition leads to the longer public audit, and it could lead to longer financial reporting lag.

However, Table 6 and Table 7 provide the coefficient values for the logarithm RPTs with different direction from that in the hypothesis, consisting of -0.0039 in Table 6 and Table 7. Furthermore, their coefficients are not significant, indicating no significant relationship between the RPTs and the financial reporting lag. The plausible reasons for the negative and insignificant their relationship could be some contradictory data about the number of the RPTs and financial reporting lag. For example, PT. Astra International Tbk in the miscellaneous industry has the highest value of related party transactions in 2015, around 7,473,928 thousand US dollar, but submitting its annual financial reporting very early. Based on its financial statements, its RPTs (the sales of goods, the purchase of raw material, interest expenses, interest income, finance costs, and commission income) are mostly conducted with its local related parties.[59] Other significant RPTs in 2017 are performed by PT. Indosat (Persero) Tbk in infrastructure, utilities, and transportations sector, around 5,512,520 thousand US dollar. Most related party transactions – cost of services and services revenue – are conducted to the Indonesian state-owned company.

Also, PT. Mayora Indah Tbk in consumer goods and industry sector performs its RPTs to its local affiliations, around 1,330,813 thousand US dollar, which include sales of products, purchase of raw material, lease expenses and incomes, interest expenses, and revenues. PT. Waskita Karya (Persero) Tbk in property, real estate, and building construction sector also contributes to the high value of related party transactions in the sample, around 1,341,926 thousand US dollar. Moreover, in 2017, PT. Waskita Karya (Persero) Tbk presents its RPTs: sales of goods and services. These major firms submit their annual financial statements early or timely. Therefore, in 2017 for all samples, sales of products and purchase of raw materials comprising around 94% of the total values of RPTs, are mostly conducted among their local affiliations within the Indonesian territories, which have the same corporate income tax rate. Meanwhile, royalty or trademark, intra-group services, rent or lease, insurance, interest, and other income or expenses, although using tax-haven regions, their proportions are only 4% of the total values of RPTs. The payments to crucial management (board directors or commissioners) are also only 2% of the total RPTs.

The tax minimisation using related party transactions is performed using the tax-haven countries by the Australian listed firms (Taylor & Richardson 2012). In other words, the transactions are conducted from a higher tax rate jurisdiction to a jurisdiction with low tax rate. Although some

[59] Local related parties mean affiliations of a listed firm within the same tax jurisdiction, not involving overseas alliances or not using associations in tax-haven countries or tax-haven territories in respect with their RPTs.

Indonesian listed firms use tax-haven regions in their RPTs, their numbers are not significant among the whole sample. According to chapter II of SE-50/PJ/2013 letter A about 'Preparation of Tax Audit on Related Party Transactions' point 4, tax avoidance risk is high on RPTs using low tax rate countries. Further, based on Article 2 (two) verse 1 (one) of PER-32/PJ/2011 about 'The Regulation of The Fairness of RPTs', the RPTs are in effect for the Indonesian taxpayers having RPTs with their overseas affiliations. Furthermore, article 2 (two) verse 2 (two) of PER-32/PJ/2011 about 'The Regulation of The Fairness of RPTs' also defines that the regulation covers the Indonesian taxpayers having RPTs with their related parties within Indonesia's territory to take benefits from the different tax rate. The difference in tax rate is not caused by the difference in tax rate among regions within the Indonesia's area. However, the difference in tax rate is caused by some certain conditions: (1) Tax regulation imposed on final and non-final income tax rate for a specific business, (2) Tax regulation imposed on value-added tax (VAT) of sales on luxury goods, and (3) Transaction performed with taxpayers of oil and gas cooperation contract contractor.

Thus, the number of RPTs among affiliations within the Indonesia has no effect on the independent auditor to carefully investigate the transactions. The auditor does not consider the high risk of tax avoidance for the RPTs conducted by the Indonesian listed firms with their counterparts within the Indonesia's tax jurisdiction that do not use tax-haven countries. The reason for the listed firms to have the RPTs among their Indonesian affiliations could be for the transaction efficiency. Gordon and Henry (2005) argued that not all RPTs are intended for earning managements. Instead, their presences are purposed to provide the economic demand by supplying an alternative form of compensation or supplying expertise and in-depth skills or knowledge. RPTs could also be intended for maximising firm value and minimising transaction costs (Chen, Wang & Li 2012). In other words, the statement of Weygandt, Kimmel and Kieso (2009, p. 315) about the intention of RPTs to maximise the returns of the whole companies could be interpreted as maximising firm value or minimising transactions costs, and it is not always translated into maximising tax avoidance, minimising tax payments, or saving the tax payments in their bank account.

If this is the case, an independent auditor does not need to further examine of the RPTs, especially the local RPTs, or the RPTs not using tax-haven countries unless otherwise mentioned otherwise by tax regulation. Therefore, the RPTs do not affect the longer annual financial reporting timeliness. Thus, this study does not support the finding of Habib and Muhammadi (2018), who found that RPTs is associated with audit report lag. In addition, this study also fails to support the study of Nekhili and Cherif (2011), who revealed that RPTs negatively affect firm value. Instead, this study confirms the theory of Chen, Wang and Li (2012) and Gordon and Henry (2005) which argued that RPTs can be perceived to maximise firm value and minimise transaction costs to make

the business of the whole groups effective, thus considered as good news by the investors.

4.4.5 Leverage (LEV)

Leverage has been predicted to have a positive relationship with financial reporting lag in H_5. The higher the ratio of debt to equity, the longer the financial reporting lag is supposed to be in the hypothesis five. From the perspective of tax, a high level of debt structure can be used as a tool for minimising tax payments. Graham (2000) argued that rising debt on a capital structure can increase the tax benefits. Having high levels of debt can raise interest expenses and reduces corporate income tax payments. Increasing the amount of debt and decreasing the amount of equity on capital structure are called thin capitalisation.[60] The tax savings from debt and increased leverage, which can raise a firm's earnings, are the examples of the agency problems (Butler 1988). This condition can affect an independent auditor to carefully investigate a listed company which has a high amount of debt, leading to long audit and financial reporting timeliness.

To handle the problems coming from debt tax savings, Indonesia has issued a tax regulation to manage those problems. In 2015, the Directorate General of Taxation (DGT) issued the regulation number: 169/PMK.010/2015, which states that all companies in Indonesia must have a comparison between debt and equity (debt to equity ratio/DER) on their capital structure of 4:1. This regulation applied from the 2016 financial year. Table 6 presents the coefficient of leverage, which is the same direction in the hypothesis but insignificant. The coefficient for leverage is 0.0026, which is the same direction with the hypothesis with the p-value of 0.6052 > 0.05 (insignificant). While the coefficient estimate of leverage in Table 7 is -0.0015, which contradicts direction to the hypothesis with p-value of 0.6172 (insignificant). These data indicate that there is no relationship between financial reporting lag and leverage, either positive or negative.

The insignificant relationship between leverage and financial reporting lag could be caused by several reasons. According to the data set, some companies with a high level of debt-to-equity ratio, even more than the requirement of tax regulation requiring a DER ratio of 4:1, submit their annual report timely, for example, in 2017, PT. Alumindo Light Metal Industry Tbk (5.27),[61] in basic industry and chemical sector, provides timely annual financial reports. Also, PT. Delta Dunia Makmur Sentosa Tbk (4.34), in the mining sector, submits its annual financial statements timely. PT. ABM Investama Tbk (5.42), in trade, services, and investment sector, provides timely

[60] A thinly capitalised firm is one whose assets are funded by a high debt rate and relatively low equity. Debt to equity funding of a firm is frequently measured as a ratio or DER/Debt to Equity Ratio (ATO 2016).

[61] 5.27 is debt to equity ratio for PT. Alumindo Light Metal Industry Tbk. The debt-to-equity ratio for other listed companies explained in this section is presented in the same way as it is for debt-to-equity ratio of PT. Alumindo Light Metal Industry Tbk, unless mentioned otherwise.

its annual financial reports. Furthermore, in 2014, PT. Alumindo Light Metal Industry Tbk (4.23) in basic industry and chemical sector submits annual financial reports timely. Also, PT. Delta Dunia Makmur Sentosa Tbk (9.69), in the mining sector, presents timely its annual financial statements. PT. ABM Investama Tbk (4.57), in trade, services, and investment sector, submits its annual financial reports in a timely fashion. The data describe that the tax regulation of DER does not influence the level of debt-to-equity ratio for those companies before and after the implementation of the rule. Also, the high level of DER does not affect the financial reporting timeliness, represented by timely submission of their annual reports with a high level of DER.

Another possible reason of why the high level of DER does not affect the financial reporting lag is an economic reason. Pardede (2016) stated that using debt to fund the company's operation is healthy and is recommended to resolve the debt appropriately. Indonesian listed firms use their debt to operate their business and investments. These phenomena indicate that debt is still needed for some listed firms to fund their business. Debt is also required, in some circumstances, to handle their financial problems which can impact the reliability and relevance of their financial reports as an essential aspect of quality financial statements (Pardede 2016). Therefore, this study failed to prove that the Indonesian tax regulation of DER affects the financial reporting lag. From the perspective of tax, this study does not support the finding of Al-Ajmi (2008), Al-Ghanem and Hegazy (2011) in 2016, and Alkhatib (2012) for both services (negative direction) and the manufacturing sector (positive direction), which revealed that leverage has a significant relationship with financial reporting timeliness or audit report timeliness. Instead, this study supports the finding of Khoufi and Khoufi (2018), Hashim et al. (2013), and Pardede (2016), which revealed that leverage has no statistically significant relationship with audit report lag, financial reporting lead time, or financial reporting timeliness.

4.4.6 Audit Opinion (OPIN)

The audit opinion is expected to have a positive relationship with the financial reporting lag. Firms with unqualified audit opinions are supposed to submit their annual financial statements earlier than those with other opinions. An independent auditor will resist publishing a modification and will expend a long time to address a questioned issue. The different item requires to be resolved through discussion or negotiation between the independent auditor and the client. However, Tables 6 and Table 7 present negative value of coefficient for audit opinion, accounting for -0.0781 and -0.0358, which are in the opposite direction with the hypothesis. Nonetheless, the p-value is 0.1921 in Table 6 and 0.5430 in Table 7 ($\alpha > 5\%$), or insignificant. These conditions indicate that companies with a qualified audit opinion submit their annual report earlier than companies with unqualified audit opinion. The reason for early reporting by companies with qualified audit opinion could be for their compliance to the reporting regulation regardless the type of audit opinion.

Similarly, Jaggi and Tsui (1999) revealed a significant and negative relationship between the audit report lag and the qualified audit opinion, which is not in line with the majority of studies. Jaggi and Tsui (1999, p. 27) argued that the contradictory finding regarding the relationship between qualified audit opinion and audit report lag is because of the low numbers of firms with qualified audit opinion in the sample, which is similar to the data in this study. Also, Jaggi and Tsui (1999, p. 27) stated that the plausible reason for the qualified audit opinion to shorten audit report lag is the overwhelming of qualified audit opinion. Thus, the company's management would have decided not to negotiate for modifying the qualified audit opinion which could take longer audit process to complete. Those facts could be the possible reasons why the audit opinion shows a negative coefficient estimate in this study.

In addition, some companies submit their annual financial statements lately, although they have unqualified audit opinion. For example, in 2017, PT. Tri Banyan Tirta Tbk and PT. Indofarma (Persero) Tbk in consumer goods and industry sector, PT. Argo Pantes Tbk in the miscellaneous industry sector, PT. Danayasa Arthatama Tbk in property, real estate, and building construction, PT. Mahaka Media Tbk and PT. Anugerah Kagum Karya Utama Tbk in trade, services, and investment sector disclose unqualified audit opinion in their annual financial reports, but they submit their financial statements late. Pardede (2016, p. 215) argued that some Indonesian listed firms delay their annual financial reports, although they acquired the unqualified audit opinions. Some companies delay their financial statements regardless of obtaining qualified or unqualified audit opinion. However, the coefficient estimates of audit opinion in this study are insignificant, indicating that there is no relationship between audit opinion and financial reporting lag. Therefore, this study does not support the finding in the study by Soltani (2002), Owusu-Ansah and Leventis (2006) and Whittred (1980), which stated that qualified audit opinion delays financial reporting timeliness. Also, this study fails to support the finding in the studies by Khoufi and Khoufi (2018), Baldacchino Peter (2016), Leventis, Weetman and Caramanis (2005), and Bamber, Bamber and Schoderbek (1993), who uncovered that qualified audit opinion increases audit report lag.

4.4.7 Tax Audit (TAX)

A tax audit is assumed to have a positive relationship with financial reporting lag in hypothesis seven (H_7). The tax audit is expected to affect financial reporting lag due to the tax audit process, which takes time and needs a firm's priority. A listed firm that receives bad news from the tax audit's result in the case of an additional tax obligation and penalty may also delay its financial reporting timeliness (Pardede 2016, p. 101). Moreover, Pardede (2016, p. 102) emphasised that a tax audit's result which remains in dispute with the tax authorities should be reported in the tax-related contingent liabilities, based on the IAS 12 (revised 2017) about 'Income Taxes', following

the IAS 37 (revised 2020) regarding 'Provision, Contingent Liabilities, and Contingent Assets'. The tax-related contingent liabilities are a specific case of contingent losses or the potential liabilities as to the process of a tax audit, appeals, or litigation in which a company may bear because of the tax audit results (Gleason & Mills 2002).

Since the company might consider that the tax-related contingent obligations because of the tax audit conducted by a government's tax revenue body, the tax audit results could be categorised as contingent liabilities if the tax audit results contain additional tax obligations and penalties. Similarly, the contingent liabilities require an independent auditor to engage in lengthy negotiations and discussions to decide the amount involved and their existence (Owusu-Ansah 2000, p. 245). However, as shown in Tables 6 and Table 7, the coefficients of tax audit are 0.0039 and -0.0093, respectively. Nonetheless, the p-values of coefficients are not significant, presenting the probability of 0.8084 in Table 6 and 0.4702 in Table 7 ($\alpha > 5\%$). These data indicate no significant relationship between tax audit and financial reporting lag. Hence, this study fails to prove that firms exposed to tax audit experience financial reporting lag longer than do firms without exposure to a tax audit. The finding in this study is consistent with the discovery of Pardede (2016), which found insignificant relationship between the tax audit and financial reporting timeliness.

4.5 Robustness Tests: Alternative Proxy for Firm Size, Profitability, Related Party Transactions, Leverage, and Tax Audit

This study employs the robustness test to verify the sensitivity of the research discoveries with respect to the research question one (RQ1). The robustness tests explained in this section involve alternative proxy for firm size, profitability, related party transactions, leverage, and tax audit. The alternative proxy for firm size utilises market capitalisation. This proxy has been used by Hitz, Löw and Solka (2013). Hitz, Löw and Solka (2013) argued that the market capitalisation reflects the size of the company. Broader markets have higher public participation than smaller markets which means there are more people to supervise the company, and the pressure reflects general markets' closer attention (Dyer & McHugh 1975). By severe pressure from a wide range of share markets, a company's management will manage to submit a firm's annual financial reports as early as possible due to the large markets' interests. Market capitalisation is calculated by multiplying the number of shares outstanding and the corresponding share price. Meanwhile, the alternative proxy of profitability uses return on equity (ROE). Return on Equity has been used by Al-Tahat (2015) and Hashim, Hashim and Jambari (2013) in reporting timeliness study and by Hitz, Löw and Solka (2013) in audit delay research. However, Al-Tahat (2015) and Hashim, Hashim and Jambari (2013) found no association between the profitability measured by ROE and financial reporting timeliness. Also, Hitz, Löw and Solka (2013) found no association between the ROE and audit delay.

Furthermore, the alternative proxy of RPTs is the value of RPTs. Meanwhile, the alternative proxy of leverage is the debt to assets ratio, which is the total of debt divided by the total of assets. The last one is alternative proxy for tax audit. Tax audit is proxied by the values of tax audit results contained in the tax assessment letters. According to article 1 (one) point 15 'General Tax Provisions and Procedures Law' Number 16 (2009), the tax assessment letter (Surat Ketetapan Pajak/SKP) are as follows: (1) tax underpayment assessment letter (Surat Ketetapan Pajak Kurang Bayar/SKPKB),[62] (2) additional tax underpayment assessment letter (Surat Ketetapan Pajak Kurang Bayar Tambahan/SKPKBT),[63] (3) tax overpayment assessment letter (Surat Ketetapan Pajak Lebih Bayar/SKPLB),[64] and (4) nil tax assessment letter (Surat Ketetapan Pajak Nihil/SKPN).[65] Table 8 illustrates the LASSO regression result of unbalanced panel data for the alternative proxy of firm size, profitability, related party transactions, leverage, and tax audit without dummy time variables. Meanwhile, Table 9 shows the LASSO regression result of unbalanced panel data for the alternative proxy of firm size, profitability, related party transactions, leverage, and tax audit with dummy time variables.

[62] SKPKB includes additional tax obligation and penalty. The penalty consists of 2% of additional tax obligations per month with a maximum of 24 months.

[63] SKPKBT includes additional tax obligations and penalty. The penalty consists of 50% or 100% of additional tax obligations, depending on the cases.

[64] SKPLB does not contain additional tax obligation and penalty. However, in some circumstances, the Directorate General of Taxes (DGT) should pay particular interest calculated from the tax overpayment to the taxpayer receiving SKPLB.

[65] SKPN does not contain additional tax obligation and penalty.

Table 8 LASSO Regression Result of Unbalanced Panel Data for Alternative Proxy of Firm Size, Profitability, Related Party Transactions, Leverage, and Tax Audit from 2014 to 2017

LASSO Regression				
Variables	**Expected Sign**	**Coefficients**	**t-Value**	**p-Value**
Constant		1.2349	7.8327	0.0000***)
LOGARL	+	0.5054	12.9680	0.0000***)
SIZE	-	-6.27E-09	-2.6854	0.0076***)
PROF	-	-0.0011	-0.5968	0.5510
RPTs	+	-5.62E-09	-0.5259	0.5993
LEV	+	0.0012	0.0442	0.9647
OPIN	+	-0.0601	-0.9919	0.3220
TAX	+	1.25E-09	0.2955	0.7678
$LOGFRL_{(t-1)}$		0.2295	5.0290	0.0000***)
Goodness of Fit:				
Adjusted R Square		0.6378		
F-Statistic		70.7836		
p-Value		0.0000***)		
Durbin-Watson stat		2.0249		
Sample		2014-2017		

NOTE: $LOGFRL_i$ stands for logarithm of Financial Reporting Lag of company *I*, the number of days between the date of submission of annual financial statements to the Financial Services Authority of Indonesia (OJK) and the financial year-end; $LOGARL_i$ shows logarithm of Audit Report Lag of company *I*, the number of days between financial year-end and the date of auditor's signature; $SIZE_i$ describes firm size of company *I*, market capitalization; $PROF_i$ constitutes profitability of company *I*, the ratio of net income on total equity (ROE); $RPTs_i$ reflects Related Party Transactions of company *I*, the value of total related party transactions; LEV_i denotes leverage of company *I*, debt to assets ratio; $OPIN_i$ explains audit opinion of company *I*, dummy variable, unqualified audit opinion is coded '0', and otherwise is coded '1'; TAX_i shows tax audit of company *I*, the values of tax audit results contained in the tax assessment letters; $LOGFRL_{i(t-1)}$ is one lag period of $LOGFRL_i$.

Model: $LOGFRL_i = \alpha_i + \beta_1 LOGARL_i + \beta_2 SIZE_i + \beta_3 PROF_i + \beta_4 RPTs_i + \beta_5 LEV_i + \beta_6 OPIN_i + \beta_7 TAX_i + LOGFRL_{i(t-1)} + \mu_i$

*) Significant at the 10% level

**) Significant at the 5% level

***) Significant at the 1% level

Table 9 LASSO Regression for Alternative Proxy of Firm Size, Profitability, Related Party Transactions, Leverage, and Tax Audit with Dummy Time Effect

LASSO Regression				
Variables	**Expected Sign**	**Coefficients**	**t-Value**	**p-Value**
Constant		1.6337	15.8966	0.0000***)
LOGARL	+	0.6487	27.4524	0.0000***)
SIZE	-	-7.54E-09	-3.9088	0.0001***)
PROF	-	-0.0006	-0.3685	0.7126
RPTs	+	-1.17E-08	-1.1969	0.2319
LEV	+	-0.0035	-0.1532	0.8783
OPIN	+	-0.0052	-0.0900	0.9283
TAX	+	2.86E-09	0.7286	0.4666
d1		0.0239	1.5554	0.1205
d2		0.0431	2.8773	0.0042***)
d3		-0.0093	-0.6438	0.5200
Goodness of Fit:				
Adjusted R Square		0.6518		
F-Statistic		88.4501		
p-Value		0.0000***)		
Durbin-Watson stat		1.7983		
Sample		2014-2017		

NOTE: $LOGFRL_i$ stands for the logarithm of Financial Reporting Lag of company *I*, the number of days between the date of submission of annual financial statements to the Financial Services Authority of Indonesia (OJK) and the financial year-end; $LOGARL_i$ shows the logarithm of Audit Report Lag of company *I*, the number of days between financial year-end and the date of auditor's signature; $SIZE_i$ describes firm size of company *I*, market capitalization; $PROF_i$ constitutes profitability of company *I*, the ratio of net income on total equity (ROE); $RPTs_i$ reflects Related Party Transactions of company *I*, the value of total related party transactions; LEV_i denotes leverage of company *I*, debt to assets ratio; $OPIN_i$ explains audit opinion of company *I*, dummy variable, unqualified audit opinion is coded '0', and otherwise is coded '1'; TAX_i shows tax audit of company *I*, the values of tax audit results contained in the tax assessment letters; $d1 - d3$ are dummy time variables for 2014-2016. Code '1' is used for dummy variables of 2014-2016, other wise is coded by '0'.

Model: $LOGFRL_i = \alpha_i + \beta_1 LOGARL_i + \beta_2 SIZE_i + \beta_3 PROF_i + \beta_4 RPTs_i + \beta_5 LEV_i + \beta_6 OPIN_i + \beta_7 TAX_i + \beta_8 d1 + \beta_9 d2 + \beta_{10} d3 + \mu_i$

*) Significant at the 10% level

**) Significant at the 5% level

***) Significant at the 1% level

According to Table 8 and Table 9, audit report lag presents a significantly positive relationship with financial reporting lag. The coefficient estimates of logarithm audit report lag is 0.5054 with p-value of 0.0000 (significant at 1% level) in Table 8. Similarly, the coefficient estimates of logarithm audit report lag in Table 9 is 0.6487 with p-value of 0.0000 (significant at 1% level). These findings corroborate the findings in the main analysis presented in Table 6 and Table 7. Furthermore, firm size in Table 8 and Table 9 also shows similar results to that shown in Table 6 and Table 7. The coefficient estimate of firm size is -6.27E-09 with p-value of 0.0000 (significant at 1% level) in Table 8. Also, the coefficient estimate of firm size in Table 9 is -7.54E-09 with p-value of 0.0000 (significant at 1% level). These data indicate that firm size has a significantly

negative relationship with financial reporting lag. These findings also support the findings in the main analysis presented in Table 6 and Table 7. For the other variables (profitability, related party transactions, leverage, audit opinion, and tax audit, Table 8 and Table 9 present no significant relationship with financial reporting lag. Hence, these findings are consistent to the findings shown in Table 6 and Table 7.

4.6 Chapter Summary

This section summarises the analysis and discussion about determinant of financial reporting lag. Using fixed effect model with and without dummy time variables, the audit report lag is found to have a significant and positive relationship with financial reporting lag in the whole analysis, which fully supports hypothesis one (H_1). Similarly, firm size also shows significant and negative relationship with financial reporting lag in the analysis using main proxy with and without dummy time variables, and alternative proxy with and without dummy time variables, which fully supports hypothesis two (H_2). Meanwhile, profitability, RPTs, leverage, audit opinion and tax audit are found to have no relationship with financial reporting lag. Therefore, hypothesis three (H_3), hypothesis four (H_4), hypothesis five (H_5), hypothesis six (H_6), and hypothesis seven (H_7) are rejected.

The next chapter presents discussion and analysis results on stock market reactions to financial reporting lag to answer research question two (RQ2).

Chapter 5

Discussion and Analysis Results on Stock Market Reactions to Financial Reporting Lags

5.1 Introduction

The previous chapter presented a discussion of analysis on the determinants of financial reporting lag. This chapter provides empirical results to answer research question two (RQ2): 'What is the relationship between financial reporting lag and stock market reactions of listed companies in Indonesia?' This chapter is presented as follows: Section 5.2 presents descriptive statistics of dependent and independent variables. Section 5.3 discusses diagnostic tests for choosing among common effect model (CEM), fixed effect model (FEM), and random effect model (REM), a diagnostic test to verify the existence of endogeneity problem in the model and diagnostic test to confirm the classical assumptions. The two-stage least squares regression results and analysis are described in Section 5.4. Section 5.5 demonstrates the robustness test using CEM of panel data regression. Section 5.6 is a discussion for dynamic GMM analysis, and section 5.7 is a conclusion summary.

5.2 Descriptive Statistics

The descriptive statistics are divided into two sections. The first one is the description for financial reporting lag as an endogenous variable and its exogenous variables for the first model (audit report lag, firm size, profitability, leverage, and audit opinion), which refers to the Equation 3.20. The second one is the description for financial reporting lag as an exogenous variable and stock market reactions proxied by cumulative average abnormal returns (CAAR) for certain days during the event window using Scholes-Williams and Dimson's beta estimate procedures for all financial reporting firms for the second model. The second model refers to the Equations 3.21, 3.22, 3.23, 3.24 and 3.25. This study uses the sample data of various industry sectors at IDX, including agriculture, infrastructure, utilities, transportation, mining, property, real estate, building construction, trading, service, and investment companies except for financial and banking sectors.

The CAAR, which are investigated in this study, are 11 days event window, adopted from Kross (1982). They are CAAR (-1, +1), CAAR (-2, +2), CAAR (-3, +3), CAAR (-4, +4), and CAAR (-5, +5). Kross (1982) and Kross and Schroeder (1984) revealed that the residual returns of early financial reporting firms are higher than those of late financial reporting firms using CAR (-5, +5) and CAR (-2, +2), respectively. Those short periods of event window are investigated to

minimise any possible compounding effect,[66] however, they are still enough to catch the affect of reporting timeliness on stock prices (Rees 1995). The compounding effect is one of the limitations in the event study (Sitthipongpanich 2011, p. 65). Also, the approach of cumulative average abnormal returns (CAAR) is used to accommodate multiple periods of short window (MacKinlay 1997, p. 21).

Following Kross and Schroeder (1984) and Pevzner, Xie and Xin (2015), firm size is used as a control variable in measuring stock market reactions to financial reporting lag. Chambers and Penman (1984) found an inverse relationship between stock market reactions and firm size surrounding the earnings announcement date. Similarly, Small, Ionici and Zhu (2007) also found that the abnormal returns of small and large firms affected by the Sarbanes-Oxley are different. Another control variable employed in the model is leverage, following Pevzner, Xie and Xin (2015) and Leone, Wu and Zimmerman (2006). Therefore, leverage and firm size are expected to control the relationship between financial reporting lag and stock market reactions.

As shown in Table 10, the average of actual financial reporting lag is 85.47 days for all financial reporting lag groups, consisting of 32 minimum days and 188 maximum days. The mandatory financial reporting lags are within 3 months or around 90 days from the end of a company's financial year, according to the Decision of Chairman of Capital Market Supervisory Agency and Financial Institutions (Badan Pengawas Pasar Modal dan Lembaga Keuangan/Bapepam-LK) issued on July 5th, 2011, number KEP-346/BL/2011 regarding 'the Submission of Periodical Financial Statements for Listed and Public Firms'.

[66] The compounding events, which potentially affect on the market reaction, are the announcements of various events such as filing legal issues, the initial public offering of equity or debt, releasing a new product, merger or acquisitions, or any other economic activities.

Table 10 Descriptive Statistics of Instrumental Variables and Financial Reporting Lag for All Financial Reporting Firms

ALL FINANCIAL REPORTING FIRMS	N	Unit of Measurements	Mean	Std Dev.	Min	Max
Dependent Variable						
FRL	468	Number of days	85.4765	15.616	32.0000	188.0000
Instrumental Variables						
ARL	468	Number of days	76.2821	15.907	28.0000	161.0000
SIZE	468	Logarithm of total assets	12.8421	1.465	9.2270	16.8991
PROF	468	Ratio	0.0769	0.184	-0.2100	3.0500
LEV	468	Ratio	1.2900	1.696	-9.4500	20.4300
OPIN	468	Dummy	0.0085	0.092	0.0000	1.0000

NOTE: FRL stands for Actual Financial Reporting Lag, the number of days between the date of submission of annual financial statements to the Financial Services Authority of Indonesia (OJK) and the financial year-end; ARL shows Audit Report Lag, the number of days between financial year-end and the date of auditor's signature; SIZE constitutes firm size, the logarithm of total assets; PROF reflects profitability, the ratio of income on equity (ROE); LEV explains leverage, debt to equity ratio; OPIN denotes audit opinion, dummy variable, unqualified audit opinion is coded '0', and otherwise is coded '1'; N is number of observations.

According to Table 11, the minimum values of CAAR (-1, +1), CAAR (-2, +2), CAAR (-3, +3), CAAR (-4, +4), and CAAR (-5, +5) using Scholes-Williams' beta estimate procedure have the similar pattern with those using Dimson's beta estimate procedure, presenting the negative values of CAAR. The negative values of CAAR indicate that the stock markets react negatively to the annual financial reporting, presenting bad news on the reporting. Also, the maximum values of CAAR (-1, +1), CAAR (-2, +2), CAAR (-3, +3), CAAR (-4, +4), and CAAR (-5, +5) using Scholes-Williams' beta estimate procedure have the similar pattern with those using Dimson's beta estimate procedure, showing the positive values of CAAR. The positive values of CAAR describe that the stock markets react positively to the annual financial reporting, which brings good news for the investors. The average values of CAAR for all days using Scholes-Williams and Dimson's beta estimate procedures provide positive values, which indicate that most annual financial reporting for the Indonesian listed firms for various industry sectors from 2014 to 2017 conveys good news for the investors.

Table 11 Descriptive Statistics of Predicted Financial Reporting Lag and Stock Market Reactions using Scholes-Williams and Dimson's Beta Estimate Methods for All Firms

Scholes-Williams' Beta Estimate						
Dependent Variable	**N**	**Unit of Measurements**	**Mean**	**Std Dev.**	**Min**	**Max**
CAAR (-1, +1)	468	Logarithm	0.0018	0.0227	-0.0925	0.1396
CAAR (-2, +2)	468	Logarithm	0.0018	0.0276	-0.1256	0.1698
CAAR (-3, +3)	468	Logarithm	0.0031	0.0326	-0.1999	0.2018
CAAR (-4, +4)	468	Logarithm	0.0036	0.0345	-0.1550	0.2231
CAAR (-5, +5)	468	Logarithm	0.0057	0.0416	-0.2395	0.2542
Independent Variable	**N**	**Unit of Measurements**	**Mean**	**Std Dev.**	**Min**	**Max**
Predicted FRL	468	Number of days	85.4765	14.026	35.7975	156.6330
Actual Days of FRL	468	Number of days	85.4765	15.616	32.0000	188.0000
Control Variables	**N**	**Unit of Measurements**	**Mean**	**Std Dev.**	**Min**	**Max**
Firm Size	468	Logarithm of total assets	12.8421	1.465	9.2270	16.8991
Leverage	468	Ratio	1.2900	1.696	-9.4500	20.4300
Dimson's Beta Estimate						
Dependent Variable	**N**	**Unit of Measurements**	**Mean**	**Std Dev.**	**Min**	**Max**
CAAR (-1, +1)	468	Logarithm	0.0015	0.0228	-0.0919	0.1402
CAAR (-2, +2)	468	Logarithm	0.0020	0.0278	-0.1243	0.1711
CAAR (-3, +3)	468	Logarithm	0.0033	0.0327	-0.2000	0.2024
CAAR (-4, +4)	468	Logarithm	0.0035	0.0350	-0.1563	0.2229
CAAR (-5, +5)	468	Logarithm	0.0056	0.0420	-0.2407	0.2561
Independent Variable	**N**	**Unit of Measurements**	**Mean**	**Std Dev.**	**Min**	**Max**
Predicted FRL	468	Number of days	85.4765	14.026	35.7975	156.6330
Actual Days of FRL	468	Number of days	85.4765	15.616	32.0000	188.0000
Control Variables	**N**	**Unit of Measurements**	**Mean**	**Std Dev.**	**Min**	**Max**
Firm Size	468	Logarithm of total assets	12.8421	1.465	9.2270	16.8991
Leverage	468	Ratio	1.2900	1.696	-9.4500	20.4300

NOTE: Predicted FRL is Fitted Values of Financial Reporting Lag derived from the first stage of the two-stage least squares using the equation 3.20; CAAR (-1, +1) are cumulative average abnormal returns from 1 day prior to the date of the event to 1 day after the event date; CAAR (-2, +2) are cumulative average abnormal returns from 2 days prior to the date of the event to 2 days after the event date; CAAR (-3, +3) are cumulative average abnormal returns from 3 days prior to the date of the event to 3 days after the event date; CAAR (-4, +4) are cumulative average abnormal returns from 4 days prior to the date of the event to 4 days after the event date; CAAR (-5, +5) are cumulative average abnormal returns from 5 days prior to the date of the event to 5 days after the event date; Firm Size is logarithm of total assets in thousand USD; Leverage is debt to equity ratio; N is number of observations.

5.3 Diagnostic Tests

The diagnostic test for every model analysed in this section follows the same procedures. Initially, a choice was made between the common effect model (CEM) and the fixed effect model (FEM) for the model in the Equation 3.21, Equation 3.22, Equation 3.23, Equation 3.24, and Equation 3.25 using the Chow test[67] was conducted. The p-values of Cross Section Chi-Square for the whole models in Equation 3.21, Equation 3.22, Equation 3.23, Equation 3.24, and Equation 3.25 are > 0.05, indicating that the CEM was better than the FEM. In addition, according to Hausman test[68] and Breusch-Pagan Lagrange Multiplier test,[69] the results indicate that the CEM was better among the FEM and the REM. Therefore, the CEM was chosen for the whole models. The results of Chow test, Hausman test and Breusch-Pagan Lagrange Multiplier test are presented in Table 12 for stock market reactions using Scholes-Williams' beta estimate method and presented in Table 13 for stock market reactions using Dimson's beta estimate method for all models.

Making a choice from the CEM, the FEM, or the REM by conducting the Chow test, Hausman test, and Breusch-Pagan Lagrange Multiplier test on the Equation 3.20 was carried out. After deciding the model between the CEM, the FEM or the REM based on the previous tests, the Hausman (1978) specification test was carried out on the chosen models (CEM) to verify the simultaneous correlation or endogeneity problem between the FRL as the endogenous regressor[70] and some endogenous variables proxied by CAAR (-1, +1), CAAR (-2, +2), CAAR (-3, +3), CAAR (-4, +4), and CAAR (-5, +5). The test was conducted by regressing the CAAR on residuals (Res) taken from the chosen models in Equation 3.20 including other independent variables, referring to the Equation 3.21, 3.22, 3.23, 3.24, and 3.25. If the p-value of residuals (Res) is < 0.05 ($\alpha < 5\%$), Ho or the null hypothesis, which assumes that there is no problem of simultaneity, is rejected. It means that there is a simultaneous correlation between the FRL and those endogenous variables.

In addition, Hult et al. (2018) stated that the endogeneity problem occurs when the coefficient estimates of predicted FRL ($\widehat{FRL}$), referring to Equations 3.21, 3.22, 3.23, 3.24, and 3.25, is significantly different from the coefficient estimates of actual days of FRL, referring to Equations 3.26, 3.27, 3.28, 3.29, and 3.30. This test was conducted using the Durbin-Wu-Hausman test (Hausman 1978). If the p-value of Wald F-statistics is < 0.05, the null hypothesis, which assumes that there is no endogeneity problem, is rejected. It indicates that there is an endogeneity problem

[67] Chow test on fixed effect model is aimed to chose between common effect model and fixed effect model.

[68] Hausman test on random effect model is purposed to chose between fixed effect model and random effect model.

[69] Breusch-Pagan Lagrange Multiplier test on common effect model is aimed to choose between common effect model and random effect model.

[70] Endogenous regressor is a variable which can be both endogenous and exogenous variable in the system (Owusu-Ansah 2000).

in the model. Hence, the estimate should use the two-stage least square model (Equations 3.21, 3.22, 3.23, 3.24, and 3.25). While, if the p-value of Wald F-statistics is > 0.05, the null hypothesis is accepted, meaning that the endogeneity problem does not exist in the model. In this case, the ordinary least square model (Equations 3.26, 3.27, 3.28, 3.29, and 3.30) is better to apply than the two-stage least square model (Hult et al. 2018).

According to Table 12, among the other event windows, CAAR (-2, +2) shows the p-value of Wald F-statistics around 0.3395 for the F-statistics of 0.9124. Hence, the null hypothesis, which assumes that there is no endogeneity problem, is accepted. It indicates that there is no endogeneity problem in the model 2, referring to Equations 3.22 for CAAR (-2, +2) using Scholes-Williams' beta estimate method. Therefore, the ordinary least square using the actual days of financial reporting lag (FRL) in Table 14 is better than the two-stage least square for the model 2 in Table 12. Meanwhile, the Wald F-statistics for CAAR (-1, +1), CAAR (-3, +3), CAAR (-4, +4), and CAAR (-5, +5) are significant ranging from 1% to 5% level of significance. Hence, the null hypothesis, which assumes that there is no endogeneity problem, is rejected. It means that there is endogeneity problem in model 1, model 3, model 4, and model 5 for CAAR (-1, +1), CAAR (-3, +3), CAAR (-4, +4), and CAAR (-5, +5) using Scholes-Williams' beta estimate method.

Meanwhile, as shown in Table 13, only the Wald test for CAAR (-3, +3) using Dimson's beta estimate method shows insignificant F-statistics, presenting the p-value of Wald F-statistics around 0.6199. Hence, the null hypothesis, which assumes there is no endogeneity problem, is accepted. It indicates that model 3 for CAAR (-3, +3) using Dimson's beta estimate method present no endogeneity problem. Hence, the ordinary least square is better than the two-stage least square. Nonetheless, Table 13 shows significant Wald F-statistics for CAAR (-1, +1), CAAR (-2, +2), CAAR (-4, +4), and CAAR (-5, +5) with p-value ranging from 1% to 10% level of significance. These data explain that the two-stage least square model for model 1**,** model 2, model 4, and model 5 referring to the Equations 3.21, 3.22, 3.24, and 3.25, respectively, is better than the ordinary least square model using the actual days of FRL referring to the Equations 3.26, 3.27, 3.29, and 3.30.

The regression was applied for the model in the Equation 3.20 to obtain the expected FRL ($\widehat{FRL}$) or the predicted FRL.[71] Financial reporting lag was estimated on its instrumental variables. The explanatory variables determined as instrumental variables are audit report lag and firm size. Those variables show significant correlation with financial reporting lag with F-statistics more than 10 (Gippel, Smith & Zhu 2015; Hult et al. 2018). Also, profitability, leverage, and audit

[71] The predicted FRL ($\widehat{FRL}$) was taken from the fitted values of the regression on the model in the Equation 3.20. In this thesis, the predicted FRL and the expected FRL will be used interchangeably, unless mentioned otherwise.

opinion were chosen as instrumental variables following prior studies that found those variables are correlated with financial reporting timeliness. Then, the expected FRL ($\widehat{FRL}$) was substituted or incorporated to the model in the Equation 3.21, Equation 3.22, Equation 3.23, Equation 3.24, and Equation 3.25 to determine the relationship between the expected FRL as an endogenous regressor and the endogenous variables [CAAR (-1, +1), CAAR (-2, +2), CAAR (-3, +3), CAAR (-4, +4), and CAAR (-5, +5)] by regressing them.

To test whether the instrumental variables are correlated or uncorrelated with the error term, J-statistics of the Sargan-Hansen test using the over-identifying approach was conducted. Table 12 present the results of Sargan-Hansen's over-identifying test for CAAR using Scholes-Williams' beta estimate method. Meanwhile, the Sargan-Hansen's over-identifying test for CAAR using Dimson's beta estimate method is shown in Table 13. The results of over-identifying J-statistics restriction accept the null hypothesis, which assumes that there is no correlation between the instrumental variables and the error term. It means that the instrumental variables included in the system are uncorrelated with the error term. Therefore, the Sargan-Hansen's tests of over-identifying J-statistics confirm the reliability of the instrumental variables. These results are valid for all models in Table 12 and Table 13.

5.4 Regression Findings and Discussion Analysis

This section presents regression results using the two-stage least squares based on Equation 3.20 as the first stage and Equations 3.21, 3.22, 3.23, 3.24, and 3.25 as the second stage. The relationship between stock market reactions using Scholes-Williams' beta estimate method and the predicted FRL is illustrated in Table 12. As shown in Table 12, the stock market reactions using Scholes-Williams' beta estimate method, proxied by CAAR (-1, +1), CAAR (-3, +3), CAAR (-4, +4), and CAAR (-5, +5), are significantly associated with the predicted FRL in negative directions, which are in line with the hypothesis. The negative values of the coefficient describe that firms with late financial reporting experience lower stock market reactions than those with early financial reporting. CAAR (-1, +1), CAAR (-3, +3), CAAR (-4, +4), and CAAR (-5, +5), present the significant coefficient of Predicted FRL. CAAR (-1, +1) presents the coefficient of predicted FRL accounting for -1.96E-05 with p-value of 0.0003 (significant at 1% level).

Meanwhile, CAAR (-2, +2) and CAAR (-3, +3) show the coefficient of predicted FRL, respectively, accounting for -3.47E-05 (p-value of 0.3133/not significant) and -5.19E-05 (p-value of 0.0000/significant at 1% level). Furthermore, CAAR (-4, +4) and CAAR (-5, +5) present the coefficients of predicted FRL consisting of -6.64E-05 with p-value of 0.0000 (significant at 1% level) for CAAR (-4, +4), and -0.0001 with p-value of 0.0009 (significant at 1% level) for CAAR (-5, +5). Negative coefficients also indicate an inverse relationship between the predicted FRL

and stock market reactions proxied by CAAR (-1, +1), CAAR (-3, +3), CAAR (-4, +4), and CAAR (-5, +5) using Scholes-Williams' beta estimate method. It means that firms with shorter financial reporting lag experience higher stock market reactions than do firms with longer financial reporting lag. The overall models are significant with p-value of F-statistics accounting for 0.0000 for model 1 (significant at 1% level), 0.0181 for model 2 (significant at 5% level), 0.0959 for model 3 (significant at 10% level), 0.0235 for model 4 (significant at 5% level), and 0.0488 for model 5 (significant at 5% level). Nevertheless, although the F-statistics for model 2 are significant at 5% level, the Wald F-statistics for model 2 is not significant. Therefore, the model is not acceptable. Hence, the regression result for CAAR (-2, +2) using Scholes-Williams' beta estimate method refers to the regression result in Table 14 for model 2 (ordinary least square model using the actual days of FRL).

Table 12 The Regression Results Between Predicted FRL and Stock Market Reactions using Scholes-Williams' Beta Estimate Method for All Firms

Common Effect Model							
Variables		**Dependent: Scholes-Williams' Beta Estimate**					
		CAAR (-1, +1)		**CAAR (-2, +2)**		**CAAR (-3, +3)**	
Independent	**Expected Sign**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**
Constant		-0.0027	0.0249**)	0.0010	0.8528	0.0104	0.0523**)
Predicted FRL ($\widehat{FRL}$)	-	-1.96E-05	0.0003***)	-3.47E-05	0.3133	-5.19E-05	0.0000***)
Firm Size		0.0003	0.0050***)	0.0002	0.4846	-0.0004	0.2351
Leverage		0.0005	0.0072***)	00004	0.0272**)	0.0005	0.0048***)
Goodness of Fit:							
R Square		0.0611		0.0214		0.0135	
Adjusted R Square		0.0550		00150		0.0071	
F-Statistics		10.0752		3.3834		2.1275	
P-Value		0.0000***)		0.0181**)		0.0959*)	
Chow Test:							
Cross-section Chi-square		156.7198		148.8322		178.2475	
P-Value		0.3163		0.4885		0.0513	
Hausman Test:							
Cross-section random		5.6983		2.4759		6.5950	
P-Value		0.1272		0.4796		0.0860	
Breusch-Pagan LM Test:							
Cross-section Breusch Pagan		0.2809		1.1333		1.1772	
P-Value		0.5961		0.2871		0.6738	
Wald Test							
F-statistics		13.5464		0.9124		72.1373	
P-Value		0.0002***)		0.3395		0.0000***)	
Sargan-Hansen Test							
P-Value (J-statistics)		0.3633		0.4885		0.8469	

Table continues next page

Sample		2014-2017		2014-2017		2014-2017	
Variables		**Dependent: Scholes-Williams' Beta Estimate**					
		CAAR (-4, +4)		**CAAR (-5, +5)**			
Independent	**Expected Sign**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**		
Constant		0.0097	0.0043***)	0.0216	0.0000***)		
Predicted FRL ($\widehat{FRL}$)	-	-6.64E-05	0.0000***)	-0.0001	0.0009***)		
Firm Size		-0.0002	0.1476	-0.0005	0.0485**)		
Leverage		0.0006	0.0000***)	0.0006	0.0132**)		
Goodness of Fit:							
R Square		0.0201		0.0157			
Adjusted R Square		0.0138		0.0093			
F-Statistics		3.1878		2.4691			
P-Value		0.0235**)		0.0488**)			
Chow Test:							
Cross-section Chi-square		170.6527		165.6114			
P-Value		0.1082		0.1668			
Hausman Test:							
Cross-section random		4.0799		3.0815			
P-Value		0.2530		0.3792			
Breusch-Pagan LM Test:							
Cross-section Breusch Pagan		0.3561		0.4824			
P-Value		0.5506		0.4873			
Wald Test							
F-statistics		24.5427		5.5915			
P-Value		0.0000***)		0.0180**)			
Sargan-Hansen Test							
P-Value (J-statistics)		0.4172		0.6385			
Sample		2014-2017		2014-2017			

NOTE: $\widehat{FRL}_{it}$ denotes the expected or predicted financial reporting lag security *I* in period *t* or the fitted values of Financial Reporting Lag derived from the first stage of the two-stage least squares using the Equation 3.20; CAAR (-1, +1) are cumulative average abnormal returns from one day prior to the date of the event to one day after the event date; CAAR (-2, +2) are cumulative average abnormal returns from two days prior to the date of the event to two days after the event date; CAAR (-3, +3) are cumulative average abnormal returns from three days prior to the date of the event to three days after the event date; CAAR (-4, +4) are cumulative average abnormal returns from four days prior to the date of the event to four days after the event date; CAAR (-5, +5) are cumulative average abnormal returns from five days prior to the date of the event to five days after the event date; Firm Size is logarithm of total assets in thousand USD; Leverage is debt to equity ratio.

Model 1: $CAAR_{(-1,+1)} = \alpha_{it} + \lambda_1\widehat{FRL}_{it} + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \varepsilon_{it}$, Equation 3.21.

Model 2: $CAAR_{(-2,+2)} = \alpha_{it} + \lambda_1\widehat{FRL}_{it} + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \varepsilon_{it}$, Equation 3.22.

Model 3: $CAAR_{(-3,+3)} = \alpha_{it} + \lambda_1\widehat{FRL}_{it} + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \varepsilon_{it}$, Equation 3.23.

Model 4: $CAAR_{(-4,+4)} = \alpha_{it} + \lambda_1\widehat{FRL}_{it} + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \varepsilon_{it}$, Equation 3.24.

Model 5: $CAAR_{(-5,+5)} = \alpha_{it} + \lambda_1\widehat{FRL}_{it} + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \varepsilon_{it}$, Equation 3.25.

*) Significant at the 10% level

**) Significant at the 5% level

***) Significant at the 1% level

Table 13 presents the regression results using Dimson's beta estimate procedure in measuring the stock market reactions to financial reporting lag using two-stage least squares. According to Table 13, CAAR (-1, +1), CAAR (-2, +2), CAAR (-4, +4), and CAAR (-5, +5) have a negative relationship with the predicted FRL. The negative values of the coefficient indicate that firms with late financial reporting experience lower stock market reactions than those with early financial reporting. CAAR (-1, +1), CAAR (-2, +2), CAAR (-4, +4), and CAAR (-5, +5) show the coefficient estimates of predicted FRL accounting for -2.32E-05, -5.03E-05, -6.62E-05, and -0.0001, respectively, showing the p-value of 0.0000 (significant at 1% level) for CAAR (-1, +1), 0.0607 (significant at 10% level) for CAAR (-2, +2), 0.0065 (significant at 1% level) for CAAR (-4, +4), and 0.0086 (significant at 1% level) for CAAR (-5, +5). Meanwhile, CAAR (-3, +3) is not associated with financial reporting lag because the p-value of predicted FRL coefficient is 0.7611 ($\alpha > 0.05$/not significant) although the coefficient is negative, which is the same direction with the hypothesis. However, the majority models are significant with p-value of F-statistics accounting for 0.0000 for model 1 (significant at 1% level), 0.0223 for model 2 (significant at 5% level), 0.0576 for model 4 (significant at 10% level), and 0.0481 for model 5 (significant at 5% level). Only model 3 is not significant with p-value of F-statistics of 0.3918 ($\alpha > 0.05$) and the p-value of Wald F-statistics accounting for 0.7611. Therefore, the two-stage least square for model 3 is not acceptable.

Table 13 The Regression Results Between Predicted FRL and Stock Market Reactions using Dimson's Beta Estimate Method for All Firms

Common Effect Model							
Variables		**Dependent: Dimson's Beta Estimate**					
		CAAR (-1, +1)		**CAAR (-2, +2)**		**CAAR (-3, +3)**	
Independent	**Expected Sign**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**
Constant		0.0004	0.3532	0.0044	0.3347	0.0177	0.3899
Predicted FRL ($\widehat{FRL}$)	-	-2.32E-05	0.0000***)	-5.03E-05	0.0607*)	-3.58E-05	0.7611
Firm Size		0.0001	0.0190**)	6.88E-05	0.7861	-0.0010	0.3636
Leverage		0.0007	0.0000***)	0.0003	0.0034***)	0.0013	0.1269
Goodness of Fit:							
R Square		0.3923		0.0204		0.0064	
Adjusted R Square		0.3883		0.0141		0.0000	
F-Statistics		99.8538		3.2281		1.0017	
P-Value		0.0000***)		0.0223**)		0.3918	
Chow Test:							
Cross-section Chi-square		151.5763		147.4720		171.0071	
P-Value		0.4258		0.5200		0.1047	
Hausman Test:							

Table continues next page

Cross-section random		2.4709		1.6832		5.7101	
P-Value		0.4806		0.6407		0.1266	
Breusch-Pagan LM Test:							
Cross-section Breusch Pagan		0.3204		1.1118		0.4710	
P-Value		0.5714		0.2917		0.4925	
Wald Test							
F-statistics		36.3862		3.5041		0.0925	
P-Value		0.0000***)		0.0612*)		0.7611	
Sargan-Hansen Test							
P-Value (J-statistics)		0.3522		0.5981		0.6510	
Sample		2014-2017		2014-2017		2014-2017	

Variables		**Dependent: Dimson's Beta Estimate**			
		CAAR (-4, +4)		**CAAR (-5, +5)**	
Independent	**Expected Sign**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**
Constant		0.0094	0.0013***)	0.0232	0.0103
Predicted FRL ($\widehat{FRL}$)	-	-6.62E-05	0.0065***)	-0.0001	0.0086***)
Firm Size		-0.0001	0.0569**)	-0.0004	0.2199
Leverage		0.0005	0.0003***)	0.0005	0.0076***)
Goodness of Fit:					
R Square		0.0160		0.0168	
Adjusted R Square		0.0096		0.0105	
F-Statistics		2.5163		2.6525	
P-Value		0.0576*)		0.0481**)	
Sample		2014-2017		2014-2017	
Chow Test:					
Cross-section Chi-square		167.4066		155.4098	
P-Value		0.1438		0.3429	
Hausman Test:					
Cross-section random		2.4495		1.7161	
P-Value		0.4845		0.6334	
Breusch-Pagan LM Test:					
Cross-section Breusch Pagan		0.3215		1.1002	
P-Value		0.5707		0.2942	
Wald Test					
F-statistics		5.0517		11.8027	
P-Value		0.0246**)		0.0006***)	
Sargan-Hansen Test					
P-Value (J-statistics)		0.3828		0.6281	
Sample		2014-2017		2014-2017	

NOTE: $\widehat{FRL}_{it}$ denotes the expected or predicted financial reporting lag security *I* in period *t* or the fitted values of Financial Reporting Lag derived from the first stage of the two-stage least squares using the Equation 3.20; CAAR (-1, +1) are cumulative average abnormal returns from one day prior to the date of the event to one day after the event date; CAAR (-2, +2) are cumulative average abnormal returns from two days prior to the date of the event to two days after the event date; CAAR (-3, +3) are cumulative average abnormal returns from three days prior to the date of the

Table continues next page

event to three days after the event date; CAAR (-4, +4) are cumulative average abnormal returns from four days prior to the date of the event to four days after the event date; CAAR (-5, +5) are cumulative average abnormal returns from five days prior to the date of the event to five days after the event date; Firm Size is logarithm of total assets in thousand USD; Leverage is debt to equity ratio.
Model 1: $CAAR_{(-1,+1)} = \alpha_{it} + \lambda_1\widehat{FRL}_{it} + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \varepsilon_{it}$, Equation 3.21.
Model 2: $CAAR_{(-2,+2)} = \alpha_{it} + \lambda_1\widehat{FRL}_{it} + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \varepsilon_{it}$, Equation 3.22.
Model 3: $CAAR_{(-3,+3)} = \alpha_{it} + \lambda_1\widehat{FRL}_{it} + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \varepsilon_{it}$, Equation 3.23.
Model 4: $CAAR_{(-4,+4)} = \alpha_{it} + \lambda_1\widehat{FRL}_{it} + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \varepsilon_{it}$, Equation 3.24.
Model 5: $CAAR_{(-5,+5)} = \alpha_{it} + \lambda_1\widehat{FRL}_{it} + \beta_1 SIZE_{it} + \beta_2 LEV_{it} + \varepsilon_{it}$, Equation 3.25.
*) Significant at the 10% level
**) Significant at the 5% level
***) Significant at the 1% level

In conclusion, Tables 12 and 13 provide the evidence about the negative relationship between stock market reactions proxied by CAAR (Cumulative Average Abnormal Returns) using Scholes-Williams and Dimson's beta estimate procedure and the predicted FRL. A negative relationship means an inverse correlation between them, indicating that firms with late financial reporting experience lower stock market reactions than those with early financial reporting. These findings support hypothesis eight (H_8), which assumes that firms with long (short) financial reporting lag have low (high) stock market reactions. Therefore, this study finds that stock market reactions for listed companies at IDX using Scholes-Williams and Dimson's beta estimate procedures have a negative relationship with financial reporting lag, which supports hypothesis eight (H_8). Firms with timely financial reporting lag have higher stock market reactions than those with late financial reporting lag.

These findings are consistent with the outcomes in prior studies, Givoly and Palmon (1982), Kross (1982), Kross and Schroeder (1984), and Atiase, Bamber and Tse (1989), who found that earnings announcements have a relationship with abnormal stock returns surrounding the announcement day. The abnormal stock returns of companies that announced the earnings early (late) were considerably higher (lower) than those of companies that published the earnings late (early). Thus, the overall findings show that stock market reactions have a negative relationship with financial reporting lag. These stock market reactions occur due to bad news contained in the late financial reporting, and good news contained in the early financial reporting. This study also contradicts the finding in the study by Rahmawati (2018), which showed no evidence that supports a correlation between the information contained (stock market reactions) proxied by CAR (-2, +2) in the annual financial reports and their financial disclosure timing. Meanwhile, in current study CAAR (-2, +2) presented negative relationship with Predicted FRL ($\widehat{FRL}$) using Dimson's beta estimate method.

This study is also successful in implementing the two-stage least square model in measuring the stock market reactions to financial reporting lag using Scholes-Williams and Dimson's beta estimate procedures. The two-stage least square method was adapted from Gippel, Smith and Zhu

(2015), Hult et al. (2018), and Owusu-Ansah (2000). In the first stage is regressing the financial reporting lag on its instruments variables, which result in the predicted financial reporting lag.[72] The predicted financial reporting lag acts as the endogenous regressor[73] in which it has two roles (as an endogenous variable for its exogenous variables and as an exogenous variable for its endogenous variable). The second stage is regressing stock market reactions on the predicted financial reporting lag including control variables (firm size and leverage), following Pevzner, Xie and Xin (2015). According to Hult et al. (2018), incorporating the fitted values of residuals of endogenous regressor in the second model is supposed to reduce the endogeneity problems. The results also support the semi-strong form of the efficient market hypothesis. The current stock prices reflect all available information including prior stock prices and all accessible events, for example, annual financial reporting (Malkiel & Fama 1970).

5.5 Robustness Test

This research applies the actual number of days of financial reporting lag (FRL) on unbalanced panel data analysis to test the robustness of the findings in the main analysis. Furthermore, diagnostic tests were conducted for all models. The first step is determining between the FEM (fixed effect model) and the CEM (common effect model) using the Chow test. According to the Chow test for the whole models, the p-values of Cross-section Chi-square are > 0.05, meaning that the CEM is better than the FEM. Moreover, the results of the Hausman test and the Breusch-Pagan Lagrange Multiplier test indicate that the CEM is better among the FEM and the REM. The results of Chow test, Hausman test, and Breusch-Pagan Lagrange Multiplier test are presented in Table 14 for stock market reactions using Scholes-Williams' beta estimate methods and presented in Table 15 for stock market reactions using Dimson's beta estimate methods for each model.

Classical assumption tests in this section are intended to check the multicollinearity, heteroscedasticity, and the autocorrelation problem. There is no multicollinearity problem among the independent variables detected for all models because the Pearson coefficient correlation are < 0.9 (Tabachnick, Fidell & Ullman 2007). Furthermore, according to Reed and Ye (2011), if heteroscedasticity is detected, the Generalized Least Square/GLS Weights (Cross-section weights) with White (diagonal) of the coefficient covariance method was chosen. Meanwhile, if there were problems of the heteroscedasticity and autocorrelation, the Feasible Generalized Least Square/FGLS Weights (Cross-section weights) with White period of coefficient covariance method was chosen. Those procedures were applied for the whole models in the robustness test.

[72] The predicted financial reporting lag is taken from the fitted values of the regression on the first model.

[73] Endogenous regressor is a variable which can be both endogenous and exogenous variable in the system (Owusu-Ansah 2000).

Table 14 shows the significantly negative relationship between actual days of financial reporting lag and stock market reactions using Scholes-Williams' beta estimate method proxied by CAAR (-1, +1) with p-value of 0.0001 (significant at 1% level) for the FRL coefficient of -1.94E-05. Also, CAAR (-2, +2) are significantly associated with financial reporting lag with the coefficient estimate of -6.85E-05, presenting p-value of 0.0366 (significant at 5% level). Similarly, the other proxies of CAAR, which include CAAR (-3, +3), CAAR (-4, +4), and CAAR (-5, +5), are associated with financial reporting lag because the p-values of FRL coefficients are 0.0000 (significant at 1% level) for CAAR (-3, +3), 0.0066 (significant at 1% level) for CAAR (-4, +4), and 0.0002 (significant at 1% level) for CAAR (-5, +5). However, only three models show significant F-statistics with p-value of 0.0000 (significant at 1% level) for model 1, 0.0048 (significant at 1% level) for model 2, and 0.0067 (significant at 1% level) for model 4. Meanwhile, model 3 and model 5 provide non-significant F-statistics, showing the p-value of F-statistics accounting for 0.1062 and 0.1730, respectively ($\alpha > 0.05$). These data indicate that the two-stage least square for model 3 and model 5 presented in Table 12 is better or more acceptable than the ordinary least square presented in Table 14 for model 3 and model 5.

Table 14 The Regression Result Between Actual Days of FRL and Stock Market Reactions using Scholes-Williams' Beta Estimate Method for All Firms

Common Effect Model							
Variables		**Dependent: Scholes-Williams' Beta Estimate**					
		CAAR (-1, +1)		**CAAR (-2, +2)**		**CAAR (-3, +3)**	
Independent	**Expected Sign**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**
Constant		-0.0023	0.0257**)	0.0055	0.2795	0.0073	0.0883*)
FRL	-	-1.94E-05	0.0001***)	-6.85E-05	0.0366**)	-3.09E-05	0.0000***)
Firm Size		0.0003	0.0064***)	7.25E-05	0.7753	-0.0003	0.2909
Leverage		0.0005	0.0088***)	0.0004	0.0105**)	0.0006	0.0237***)
Goodness of Fit:							
R Square		0.0654		0.0273		0.0130	
Adjusted R Square		0.0593		0.0211		0.0066	
F-Statistics		10.8231		4.3562		2.0490	
P-Value		0.0000***)		0.0048***)		0.1062	
Chow Test:							
Cross-section Chi-square		156.1333		147.4978		177.9700	
P-Value		0.3281		0.5194		0.0528	
Hausman Test:							
Cross-section random		5.2807		1.3681		6.4623	
P-Value		0.1524		0.7130		0.0912	
Breusch-Pagan LM Test:							

Table continues next page

Cross-section Breusch Pagan		0.2800		1.1281		0.1490	
P-Value		0.5967		0.2882		0.6994	
Sample		2014-2017		2014-2017		2014-2017	

Variables		**Dependent**					
		CAAR (-4, +4)		**CAAR (-5, +5)**			
Independent	**Expected Sign**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**		
Constant		0.0022	0.3953	0.0101	0.0085***)		
FRL	-	-2.20E-05	0.0066***)	-6.25E-05	0.0002***)		
Firm Size		2.52E-05	0.8564	-0.0002	0.3975		
Leverage		0.0008	0.0000***)	0.0007	0.0173**)		
Goodness of Fit:							
R Square		0.0259		0.0106			
Adjusted R Square		0.0196		0.0042			
F-Statistics		4.1154		1.6681			
P-Value		0.0067***)		0.1730			
Chow Test:							
Cross-section Chi-square		173.3931		167.3947			
P-Value		0.0837		0.1439			
Hausman Test:							
Cross-section random		6.3435		4.6987			
P-Value		0.0960		0.1952			
Breusch-Pagan LM Test:							
Cross-section Breusch Pagan		0.3027		0.4582			
P-Value		0.5822		0.4984			
Sample		2014-2017		2014-2017			

NOTE: FRL stands for Financial Reporting Lag, the number of actual days between the end of a company's financial year and the submission date of the annual financial report to the Financial Service Authority of Indonesia (Otoritas Jasa Keuangan/OJK); CAAR (-1, +1) are cumulative average abnormal returns from one day prior to the date of the event to one day after the event date; CAAR (-2, +2) are cumulative average abnormal returns from two days prior to the date of the event to two days after the event date; CAAR (-3, +3) are cumulative average abnormal returns from three days prior to the date of the event to three days after the event date; CAAR (-4, +4) are cumulative average abnormal returns from four days prior to the date of the event to four days after the event date; CAAR (-5, +5) are cumulative average abnormal returns from five days prior to the date of the event to five days after the event date; Firm Size is logarithm of total assets in thousand USD; Leverage is debt to equity ratio.

Model 1: $CAAR_{(-1,+1)} = \alpha_i + \beta_1 FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it}$, Equation 3.26.
Model 2: $CAAR_{(-2,+2)} = \alpha_i + \beta_1 FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it}$, Equation 3.27.
Model 3: $CAAR_{(-3,+3)} = \alpha_i + \beta_1 FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it}$, Equation 3.28.
Model 4: $CAAR_{(-4,+4)} = \alpha_i + \beta_1 FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it}$, Equation 3.29.
Model 5: $CAAR_{(-5,+5)} = \alpha_i + \beta_1 FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it}$, Equation 3.30.

*) Significant at the 10% level
**) Significant at the 5% level
***) Significant at the 1% level

Furthermore, Table 15 presents regression results between actual days of FRL and stock market reactions using Dimson's beta estimate procedure. CAAR (-1, +1), CAAR (-2, +2), and CAAR (-5, +5) present significantly negative relationship with financial reporting lag. The FRL coefficient of CAAR (-1, +1) is -3.85E-05 with p-value of 0.0000 (significant at 1% level), meanwhile, the FRL coefficient of CAAR (-2, +2) is -6.68E-05 with p-value of 0.0528 (significant at 10% level), and the FRL coefficient of CAAR (-5, +5) is -7.53E-05 with p-value of 0.0000 (significant at 1% level). Meanwhile, CAAR (-3, +3) and CAAR (-4, +4) are not associated with financial reporting lag because the p-values of their FRL coefficients are > 0.05 (not significant). However, the majority models show significant F-statistics with p-value of 0.0000 (significant at 1% level) for model 1, 0.0133 (significant at 5% level) for model 2, and 0.0740 (significant at 10% level) for model 4. Meanwhile, the F-statistics for model 3 and model 5 are not significant, showing the p-value of 0.2752 and 0.3074, consecutively (α> 0.05). Therefore, the regression results for CAAR (-3, +3) and CAAR (-5, +5) using Dimson's beta estimate method refer to the results presented in Table 13 for model 3 and model 5.

Table 15 The Regression Results Between Actual Days of FRL and Stock Market Reactions using Dimson's Beta Estimate Method for All Firms

Common Effect Model							
Variables		**Dependent: Dimson's Beta Estimate**					
		CAAR (-1, +1)		**CAAR (-2, +2)**		**CAAR (-3, +3)**	
Independent	**Expected Sign**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**
Constant		0.0020	0.0040***)	0.0067	0.1909	0.0188	0.5442
FRL	-	-3.85E-05	0.0000***)	-6.68E-05	0.0528*)	-2.53E-05	0.8439
Firm Size		8.85E-05	0.3803	1.57E-06	0.9951	-0.0011	0.4333
Leverage		0.0007	0.0000***)	0.0003	0.0066***)	0.0014	0.0163**)
Goodness of Fit:							
R Square		0.3962		0.0228		0.0083	
Adjusted R Square		0.3923		0.0165		0.0018	
F-Statistics		101.5255		3.6129		1.2958	
P-Value		0.0000***)		0.0133**)		0.2752	
Chow Test:							
Cross-section Chi-square		151.0837		146.2957		171.3257	
P-Value		0.4369		0.5473		0.1017	
Hausman Test:							
Cross-section random		2.0866		0.7197		5.9535	
P-Value		0.5546		0.8686		0.1139	
Breusch-Pagan LM Test:							
Cross-section Breusch Pagan		0.3159		1.1063		0.4240	

Table continues next page

P-Value		0.5740		0.2929		0.5149	
Sample		2014-2017		2014-2017		2014-2017	
Variables		**Dependent**					
		CAAR (-4, +4)		**CAAR (-5, +5)**			
Independent	**Expected Sign**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**		
Constant		0.0010	0.8335	0.0097	0.0000***)		
FRL	-	-1.28E-06	0.9712	-7.53E-05	0.0000***)		
Firm Size		2.85E-05	0.9170	-0.0001	0.6695		
Leverage		0.0006	0.0146**)	0.0005	0.0330**)		
Goodness of Fit:							
R Square		0.0148		0.0077			
Adjusted R Square		0.0084		0.0013			
F-Statistics		2.3261		1.2049			
P-Value		0.0740*)		0.3074			
Chow Test:							
Cross-section Chi-square		170.1009		157.4414			
P-Value		0.1137		0.3021			
Hausman Test:							
Cross-section random		4.6911		3.5328			
P-Value		0.1959		0.3165			
Breusch-Pagan LM Test:							
Cross-section Breusch Pagan		0.2785		1.0603			
P-Value		0.5976		0.3031			
Sample		2014-2017		2014-2017			

NOTE: FRL stands for Financial Reporting Lag, the number of actual days between the end of a company's financial year and the submission date of the annual financial report to the Financial Service Authority of Indonesia (Otoritas Jasa Keuangan/OJK); CAAR (-1, +1) are cumulative average abnormal returns from one day prior to the date of the event to one day after the event date; CAAR (-2, +2) are cumulative average abnormal returns from two days prior to the date of the event to two days after the event date; CAAR (-3, +3) are cumulative average abnormal returns from three days prior to the date of the event to three days after the event date; CAAR (-4, +4) are cumulative average abnormal returns from four days prior to the date of the event to four days after the event date; CAAR (-5, +5) are cumulative average abnormal returns from five days prior to the date of the event to five days after the event date; Firm Size is logarithm of total assets in thousand USD; Leverage is debt to equity ratio.

Model 1: $CAAR_{(-1,+1)} = \alpha_i + \beta_1 FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it}$, Equation 3.26.
Model 2: $CAAR_{(-2,+2)} = \alpha_i + \beta_1 FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it}$, Equation 3.27.
Model 3: $CAAR_{(-3,+3)} = \alpha_i + \beta_1 FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it}$, Equation 3.28.
Model 4: $CAAR_{(-4,+4)} = \alpha_i + \beta_1 FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it}$, Equation 3.29.
Model 5: $CAAR_{(-5,+5)} = \alpha_i + \beta_1 FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it}$, Equation 3.30.

*) Significant at the 10% level
**) Significant at the 5% level
***) Significant at the 1% level

To summarise, Table 14 provides the evidence about the significantly negative relationship between the actual days of FRL and stock market reactions proxied by CAAR (-1, +1), CAAR (-2, +2), CAAR (-3, +3), CAAR (-4, +4), and CAAR (-5, +5) using Scholes-Williams' beta estimate method. Meanwhile, Table 15 shows the significant and negative relationship between CAAR

presented by CAAR (-1, +1), CAAR (-2, +2), and CAAR (-5, +5) using Dimson's beta estimate method and the actual days of FRL. Nonetheless, CAAR (-3, +3) and CAAR (-4, +4) using Dimson's beta estimate method are not associated with the FRL.

5.6 Dynamic Generalized Method of Moments

Table 16 describes the results of the data analysis using the dynamic generalized method of moments (GMM) for Scholes-Williams' beta estimate method. The dynamic GMM uses one lag and two lag of dependent variable as independent variables, which are called internal instruments (Roodman 2009; Wintoki, Linck & Netter 2012). The significantly negative relationship between financial reporting lag (FRL) and stock market reactions are shown by all event windows including CAAR (-1, +1), CAAR (-2, +2), CAAR (-3, +3), CAAR (-4, +4), and CAAR (-5, +5). The negative relationship explains that stock market reactions are significantly higher for timely financial reporting firms than those for late financial reporting firms. These findings are consistent with prior studies by Givoly and Palmon (1982), Kross (1982), Kross and Schroeder (1984), and Atiase, Bamber and Tse (1989). CAAR (-1, +1) shows the coefficient estimate of -3.80E-05 for FRL with p-value of 0.0059 (significant at 1% level). Meanwhile, CAAR (-2, +2) presents the p-value of 0.0876 (significant at 10% level) for the -9.40E-05 coefficient estimate of FRL.

Furthermore, according to Table 16, CAAR (-3, +3), CAAR (-4, +4), and CAAR (-5, +5) present the coefficient estimates for FRL accounting for -0.0003, -0.0002, and -0.0002, respectively, with significant at 1% level of the p-values for all coefficient estimates. CAAR (-3, +3) shows the p-value of 0.0000 ($\alpha < 1\%$). Also, CAAR (-4, +4) presents the p-value of 0.0053 ($\alpha < 1\%$). Similarly, CAAR (-5, +5) reveals the p-values of 0.0001 ($\alpha < 1\%$). These results indicate that the dynamic GMM method is suitable for data analysis involving unbalanced panel data, which supports the study of Ullah, Akhtar and Zaefarian (2018). In comparison to the use of two-stage least square model presented in Table 12 for Scholes-Williams' beta estimate method, the use of the dynamic GMM for panel data presents better results, showing significantly negative relationship between FRL and stock market reactions for CAAR (-1, +1), CAAR (-2, +2), CAAR (-3, +3), CAAR (-4, +4), and CAAR (-5, +5) with significant F-statistics at 1% level for all models.

Meanwhile, in Table 12, CAAR (-2, +2) shows an insignificant relationship with FRL using the two-stage least square model for Scholes-Williams' beta estimate method. Also, according to Table 14, the use of Common Effect Model (CEM) is not suitable for unbalanced panel data, which have endogeneity problem. This is indicated by insignificant F-statistics for CAAR (-3, +3) and CAAR (-5, +5). In Table 14, CAAR (-3, +3) and CAAR (-5, +5) reveal the F-statistics p-values for 0.1062 and 0.1730, consecutively. These indicate that model 3 and model 5 using the CEM or OLS model are not valid caused by endogeneity problem. Ullah, Akhtar and Zaefarian

(2018) also showed considerable disparities in conclusions reported using the ordinary least squares (OLS) technique, fixed effects, and the generalized method of moments (GMM) estimations. Therefore, the current study confirms the study of Ullah, Akhtar and Zaefarian (2018), Li et al. (2021), Roodman (2009), and Wintoki, Linck and Netter (2012) recommending the use of the dynamic GMM when unbalanced panel data have endogeneity issue.

Table 16 The Dynamic Generalized Method of Moments Regression Result using Scholes-Williams' Beta Estimate Method for All Firms

Variables		**Dependent: Scholes-Williams' Beta Estimate**					
		CAAR (-1, +1)		**CAAR (-2, +2)**		**CAAR (-3, +3)**	
Independent	**Expected Sign**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**
Constant		0.0147	0.0000***)	0.0158	0.0790*)	0.0857	0.0000***)
CAAR $_{(-1,+1)\ i-1}$		-0.0321	0.1682				
CAAR $_{(-1,+1)\ i-2}$		0.0059	0.7067				
CAAR $_{(-2,+2)\ i-1}$				-0.0952	0.0003***)		
CAAR $_{(-2,+2)\ i-2}$				-0.0478	0.0378**)		
CAAR $_{(-3,+3)\ i-1}$						0.0385	0.0000***)
CAAR $_{(-3,+3)\ i-2}$						-0.0446	0.0441**)
FRL	-	-3.80E-05	0.0059***)	-9.40E-05	0.0876*)	-0.0003	0.0000***)
Firm Size		-0.0007	0.0000***)	-0.0004	0.3669	-0.0041	0.0000***)
Leverage		0.0010	0.0000***)	0.0005	0.0870*)	0.0022	0.0000***)
Goodness of Fit:							
R Square		0.1208		0.1239		0.7461	
Adjusted R Square		0.0971		0.1002		0.7392	
F-Statistics		5.0878		5.2346		108.7286	
P-Value		0.0002***)		0.0001***)		0.0000***)	
Sample		2014-2017		2014-2017		2014-2017	

Variables		**Dependent**			
		CAAR (-4, +4)		**CAAR (-5, +5)**	
Independent	**Expected Sign**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**
Constant		0.0815	0.0000***)	0.0540	0.0013***)
CAAR $_{(-4,+4)\ i-1}$		-0.0020	0.8536		
CAAR $_{(-4,+4)\ i-2}$		-0.0053	0.8468		
CAAR $_{(-5,+5)\ i-1}$				-0.0001	0.9945
CAAR $_{(-5,+5)\ i-2}$				0.0614	0.0076***)
FRL	-	-0.0002	0.0053***)	-0.0002	0.0001***)
Firm Size		-0.0044	0.0000***)	-0.0018	0.0410**)
Leverage		0.0013	0.0009***)	0.0033	0.0000***)
Goodness of Fit:					
R Square		0.3589		0.1940	
Adjusted R Square		0.3415		0.1722	

Table continues next page

F-Statistics		20.7141		8.9090			
P-Value		0.0000***)		0.0000***)			
Sample		2014-2017		2014-2017			

NOTE: $CAAR_{(-1,+1)}$ is the cumulative average abnormal returns for three days from day -1 prior to the date of the event to day +1 after the event date; $CAAR_{(-2,+2)}$ is the cumulative average abnormal returns for five days from day -2 prior to the date of the event to day +2 after the event date; $CAAR_{(-3,+3)}$ is the cumulative average abnormal returns for seven days from day -3 prior to the date of the event to day +3 after the event date; $CAAR_{(-4,+4)}$ is the cumulative average abnormal returns for nine days from day -4 prior to the date of the event to day +4 after the event date; $CAAR_{(-5,+5)}$ is the cumulative average abnormal returns for nine days from day -5 prior to the date of the event to day +5 after the event date; α_i stands for the constant or the intercept of the model for security *I*; FRL_{it} denotes for the number of days between the end of a company's financial year and the submission date of annual financial report to the Financial Service Authority of Indonesia; $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ constitute the coefficient (the slope of the model); and ε_{it} is error term for the security *I* in period *t*; $CAAR_{(-1,+1)i-1}$ = one lag of the cumulative average abnormal returns for three days from day -1 prior to the date of the event to day +1 after the event date; $CAAR_{(-1,+1)i-2}$ = two lags of the cumulative average abnormal returns for three days from day -1 prior to the date of the event to day +1 after the event date; $CAAR_{(-2,+2)i-1}$ = one lag of the cumulative average abnormal returns for five days from day -2 prior to the date of the event to day +2 after the event date; $CAAR_{(-2,+2)i-2}$ = two lags of the cumulative average abnormal returns for five days from day -2 prior to the date of the event to day +2 after the event date; $CAAR_{(-3,+3)i-1}$ = one lag of the cumulative average abnormal returns for seven days from day -3 prior to the date of the event to day +3 after the event date; $CAAR_{(-3,+3)i-2}$ = two lags of the cumulative average abnormal returns for seven days from day -3 prior to the date of the event to day +3 after the event date; $CAAR_{(-4,+4)i-1}$ = one lag of the cumulative average abnormal returns for nine days from day -4 prior to the date of the event to day +4 after the event date; $CAAR_{(-4,+4)i-2}$ = two lags of the cumulative average abnormal returns for nine days from day -4 prior to the date of the event to day +4 after the event date; $CAAR_{(-5,+5)i-1}$ = one lag of the cumulative average abnormal returns for nine days from day -5 prior to the date of the event to day +5 after the event date; $CAAR_{(-5,+5)i-2}$ = two lags of the cumulative average abnormal returns for nine days from day -5 prior to the date of the event to day +5 after the event date.

Model 1: $CAAR_{(-1,+1)} = \alpha_i + \beta_1 CAAR_{(-1,+1)i-1} + \beta_2 CAAR_{(-1,+1)i-2} + \beta_3 FRL_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \varepsilon_{it}$, Equation 3.31.

Model 2: $CAAR_{(-2,+2)} = \alpha_i + \beta_1 CAAR_{(-2,+2)i-1} + \beta_2 CAAR_{(-2,+2)i-2} + \beta_3 FRL_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \varepsilon_{it}$, Equation 3.32.

Model 3: $CAAR_{(-3,+3)} = \alpha_i + \beta_1 CAAR_{(-3,+3)i-1} + \beta_2 CAAR_{(-3,+3)i-2} + \beta_3 FRL_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \varepsilon_{it}$, Equation 3.33.

Model 4: $CAAR_{(-4,+4)} = \alpha_i + \beta_1 CAAR_{(-4,+4)i-1} + \beta_2 CAAR_{(-4,+4)i-2} + \beta_3 FRL_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \varepsilon_{it}$, Equation 3.34

Model 5: $CAAR_{(-5,+5)} = \alpha_i + \beta_1 CAAR_{(-4,+4)i-1} + \beta_2 CAAR_{(-4,+4)i-2} + \beta_3 FRL_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \varepsilon_{it}$, Equation 3.35

*) Significant at the 10% level
**) Significant at the 5% level
***) Significant at the 1% level

Table 17 presents data analysis by the dynamic GMM for Dimson's beta estimate method. The results show that CAAR (-1, +1), CAAR (-3, +3), CAAR (-4, +4), and CAAR (-5, +5) have a significantly negative relationship with financial reporting lag with 1% significant level for all models. The p-values of coefficient estimates for FRL in model 1, model 3, model 4, and model 5 are 0.0000, 0.0006, 0.0000, and 0.0000, respectively. This indicates that the timely financial reporting firms show higher stock market reactions than do late financial reporting firms. Meanwhile, CAAR (-2, +2) does not show a significant relationship with financial reporting lag among the other observed event windows for Dimson's beta estimate method. The p-value of coefficient estimate of FRL for model 2 is 0.1401 ($\alpha > 10\%$). However, the whole models present significant F-statistics with 1% level of significance, indicating that the whole models are acceptable. The p-values for F-statistics for model 1, model 2, model 3, model 4, and model 5 are 0.0000 ($\alpha < 1\%$).

Comparing the two-stage least square models in Table 13 and the CEM (OLS model) in Table 15, the use of dynamic GMM for analysing the unbalanced panel data presents better results. In

Table 13, the use of two-stage least square model shows it is invalid for CAAR (-3, +3) using Dimson's beta estimate method, which is indicated by p-value of F-statistics for 0.3918 (α > 10%). Also, in Table 15, the use of the CEM or OLS model shows that the p-values of F-statistics for model 3 and model 5 are 0.2752 (α > 10%) and 0.3074 (α > 10%), consecutively. This indicates that model 3 and model 5 in Table 15 are not acceptable due to endogeneity issue. Thus, in the Dimson's beta estimate method, this study also supports Ullah, Akhtar and Zaefarian (2018), Li et al. (2021), Roodman (2009), and Wintoki, Linck and Netter (2012), who recommended the use of dynamic GMM for analysing unbalanced panel data when an endogeneity problem is experienced in a model rather than using the two-stage least square model or the OLS model.

Table 17 The Dynamic Generalized Method of Moments Regression Result using Dimson's Beta Estimate Method for All Firms

Variables		**Dependent: Dimson's Beta Estimate**					
		CAAR (-1, +1)		**CAAR (-2, +2)**		**CAAR (-3, +3)**	
Independent	**Expected Sign**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**
Constant		0.0099	0.0000***)	0.0077	0.1082	0.0758	0.0000***)
CAAR $_{(-1,+1)\ i-1}$		-0.0373	0.0000***)				
CAAR $_{(-1,+1)\ i-2}$		-0.0369	0.0000***)				
CAAR $_{(-2,+2)\ i-1}$				-0.0712	0.0001***)		
CAAR $_{(-2,+2)\ i-2}$				-0.0685	0.0000***)		
CAAR $_{(-3,+3)\ i-1}$						0.0242	0.0501**)
CAAR $_{(-3,+3)\ i-2}$						-0.0587	0.0002***)
FRL	-	-2.60E-05	0.0000***)	-6.64E-05	0.1401	-0.0002	0.0006***)
Firm Size		-0.0003	0.0078***)	5.68E-05	0.7519	-0.0040	0.0000***)
Leverage		0.0002	0.0038***)	0.0004	0.0863*)	0.0021	0.0000***)
Goodness of Fit:							
R Square		0.2447		0.2246		0.3468	
Adjusted R Square		0.2243		0.2037		0.3292	
F-Statistics		11.9916		10.7217		19.6525	
P-Value		0.0000***)		0.0000***)		0.0000***)	
Sample		2014-2017		2014-2017		2014-2017	
Variables		**Dependent**					
		CAAR (-4, +4)		**CAAR (-5, +5)**			
Independent	**Expected Sign**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**		
Constant		0.0763	0.0000***)	0.0502	0.0000***)		
CAAR $_{(-4,+4)\ i-1}$		0.0115	0.2241				
CAAR $_{(-4,+4)\ i-2}$		0.0340	0.0224**)				
CAAR $_{(-5,+5)\ i-1}$				0.0217	0.6370		

Table continues next page

CAAR $_{(-5,+5)\ i-2}$				0.0438	0.0008***)		
FRL	-	-0.0002	0.0000***)	-0.0002	0.0000***)		
Firm Size		-0.0040	0.0000***)	-0.0014	0.0000***)		
Leverage		0.0004	0.1018	0.0030	0.0000***)		
Goodness of Fit:							
R Square		0.7103		0.4299			
Adjusted R Square		0.7025		0.4145			
F-Statistics		90.7485		27.9078			
P-Value		0.0000***)		0.0000***)			
Sample		2014-2017		2014-2017			

NOTE: $CAAR_{(-1,+1)}$ is the cumulative average abnormal returns for three days from day -1 prior to the date of the event to day +1 after the event date; $CAAR_{(-2,+2)}$ is the cumulative average abnormal returns for five days from day -2 prior to the date of the event to day +2 after the event date; $CAAR_{(-3,+3)}$ is the cumulative average abnormal returns for seven days from day -3 prior to the date of the event to day +3 after the event date; $CAAR_{(-4,+4)}$ is the cumulative average abnormal returns for nine days from day -4 prior to the date of the event to day +4 after the event date; $CAAR_{(-5,+5)}$ is the cumulative average abnormal returns for nine days from day -5 prior to the date of the event to day +5 after the event date; α_i stands for the constant or the intercept of the model for security *I*; FRL_{it} denotes for the number of days between the end of a company's financial year and the submission date of annual financial report to the Financial Service Authority of Indonesia; $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ constitute the coefficient (the slope of the model); and ε_{it} is error term for the security *I* in period *t*; $CAAR_{(-1,+1)i-1}$ = one lag of the cumulative average abnormal returns for three days from day -1 prior to the date of the event to day +1 after the event date; $CAAR_{(-1,+1)i-2}$ = two lags of the cumulative average abnormal returns for three days from day -1 prior to the date of the event to day +1 after the event date; $CAAR_{(-2,+2)i-1}$ = one lag of the cumulative average abnormal returns for five days from day -2 prior to the date of the event to day +2 after the event date; $CAAR_{(-2,+2)i-2}$ = two lags of the cumulative average abnormal returns for five days from day -2 prior to the date of the event to day +2 after the event date; $CAAR_{(-3,+3)i-1}$ = one lag of the cumulative average abnormal returns for seven days from day -3 prior to the date of the event to day +3 after the event date; $CAAR_{(-3,+3)i-2}$ = two lags of the cumulative average abnormal returns for seven days from day -3 prior to the date of the event to day +3 after the event date; $CAAR_{(-4,+4)i-1}$ = one lag of the cumulative average abnormal returns for nine days from day -4 prior to the date of the event to day +4 after the event date; $CAAR_{(-4,+4)i-2}$ = two lags of the cumulative average abnormal returns for nine days from day -4 prior to the date of the event to day +4 after the event date; $CAAR_{(-5,+5)i-1}$ = one lag of the cumulative average abnormal returns for nine days from day -5 prior to the date of the event to day +5 after the event date; $CAAR_{(-5,+5)i-2}$ = two lags of the cumulative average abnormal returns for nine days from day -5 prior to the date of the event to day +5 after the event date.

Model 1: $CAAR_{(-1,+1)} = \alpha_i + \beta_1 CAAR_{(-1,+1)i-1} + \beta_2 CAAR_{(-1,+1)i-2} + \beta_3 FRL_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \varepsilon_{it}$, Equation 3.31.

Model 2: $CAAR_{(-2,+2)} = \alpha_i + \beta_1 CAAR_{(-2,+2)i-1} + \beta_2 CAAR_{(-2,+2)i-2} + \beta_3 FRL_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \varepsilon_{it}$, Equation 3.32.

Model 3: $CAAR_{(-3,+3)} = \alpha_i + \beta_1 CAAR_{(-3,+3)i-1} + \beta_2 CAAR_{(-3,+3)i-2} + \beta_3 FRL_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \varepsilon_{it}$, Equation 3.33.

Model 4: $CAAR_{(-4,+4)} = \alpha_i + \beta_1 CAAR_{(-4,+4)i-1} + \beta_2 CAAR_{(-4,+4)i-2} + \beta_3 FRL_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \varepsilon_{it}$, Equation 3.34

Model 5: $CAAR_{(-5,+5)} = \alpha_i + \beta_1 CAAR_{(-4,+4)i-1} + \beta_2 CAAR_{(-4,+4)i-2} + \beta_3 FRL_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \varepsilon_{it}$, Equation 3.35

*) Significant at the 10% level

**) Significant at the 5% level

***) Significant at the 1% level

5.7 Chapter Summary

This chapter presents the regression results to test hypothesis eight (H_8), which assumes that stock market reactions have a negative relationship with financial reporting lag. The overall findings in the primary and robustness analysis describe the evidence for the significant negative relationship between stock market reactions using Scholes-Williams and Dimson's beta estimate procedures and financial reporting lag. A negative relationship means there is an inverse correlation between them, indicating that firms with early financial reporting experience stronger stock market reactions than those with late financial reporting. These findings are consistent with

the result in prior studies, Givoly and Palmon (1982), Kross (1982), Kross and Schroeder (1984), and Atiase, Bamber and Tse (1989), who found that earnings announcements have a relationship with abnormal stock returns surrounding the announcement day. Nonetheless, this study argues against the findings of Rahmawati (2018), who found no correlation between the information contained (stock market reactions) proxied by CAR (-2, +2) in the annual financial reports and their financial disclosure timing. Meanwhile, in current study CAAR (-2, +2) presented negative relationship with Predicted FRL ($\widehat{FRL}$) using Dimson's beta estimate method. Also, CAAR (-2, +2) showed the negative relationship with actual days of FRL using both Scholes-Williams and Dimson's beta estimate procedures.

This study is also successful in contributing to the literature on financial reporting timeliness and stock market research by implementing two-stage least square as the main analysis to address endogeneity problems as advised by Gujarati and Porter (2010) and implementing the dynamic GMM as recommended by Ullah, Akhtar and Zaefarian (2018) to address the endogeneity problem with unbalanced panel data. The two-stage least square model was adapted from Gippel, Smith and Zhu (2015), Hult et al. (2018), and Owusu-Ansah (2000). Meanwhile, the dynamic GMM was recommended by Ullah, Akhtar and Zaefarian (2018), Li et al. (2021), Roodman (2009), and Wintoki, Linck and Netter (2012). Ullah, Akhtar and Zaefarian (2018) argued that the two-stage least square model is commonly applied for survey data. Therefore, the comparison among the data analyses using the two-stage least square model, the OLS model, and the dynamic GMM shows that the dynamic GMM data analysis presents better models for Scholes-Williams and Dimson's beta estimate procedures. These results were indicated by significant F-statistics for all models using the dynamic GMM for all models in the Scholes-Williams and Dimson's beta estimate methods. The significant F-statistics explain that the models are acceptable.

Further, the control variables used in the model were taken from the model used by Pevzner, Xie and Xin (2015). Also, the findings support the semi-strong hypothesis, which assumes that the current stock prices represent all accessible information about the past stock prices and publicly available information, for example, annual earnings or financial reporting lag (Malkiel & Fama 1970). Hence, the predicted financial reporting lags, which were taken from the first stage of the models, were used to measure the relationship between the stock market reactions and financial reporting lag on the second stage of the model. Meanwhile, the robustness analysis uses the actual days of financial reporting lag for the CEM or OLS model to measure the relationship between the stock market reactions (CAAR) both using Scholes-Williams' and Dimson's beta estimate methods and the actual days of FRL. Also, the findings from the dynamic GMM model were used to compare the results from the two-stage least square model and the OLS model. However, among the other event windows, only CAAR (-3, +3) using Dimson's beta estimate method does not show the negative correlation with financial reporting lag for the two-stage least square and

the ordinary least square model. Nonetheless, the CAAR (-2, +2) using Dimson's beta estimate method does not show a significant relationship with the FRL in dynamic GMM model.

The next chapter presents discussion and analysis results of asymmetric stock market reactions between timely and late financial reporting firms to answer research question three (RQ3).

Chapter 6

Discussion and Analysis Results of Asymmetric Stock Market Reactions between Timely and Late Financial Reporting Firms

6.1 Introduction

The previous chapter described the data analysis for stock market reactions to financial reporting lag using two-stage-least squares. This chapter discusses the findings to answer the research question three (RQ3): 'Are the stock market reactions asymmetric between timely and late financial reporting of listed companies in Indonesia?' This chapter is presented as follows: Section 6.2 explains the test of significance for cumulative average abnormal returns (CAAR). Section 6.3 presents descriptive statistics of cumulative average abnormal returns (CAAR) for certain days within the event window for all firms, timely financial reporting firms, and late financial reporting firms. Section 6.4 discusses the analysis and regression results. Section 6.5 summarises the chapter.

6.2 Test of Significance

This section describes the test of significance of cumulative average abnormal returns (CAAR) within the event window.[74] The test uses the formula in Equation 3.19. The CAAR, which are considerably far from zero, explain that the stock market reactions occur around the event date (MacKinlay 1997). Table 16 presents the test of significance of CAAR using Scholes-Williams' beta estimate method within the event window for all financial reporting firms, timely and late financial reporting firms. Table 17 presents the test of significance of CAAR using Dimson's beta estimate method within the event window for all financial reporting firms, timely and late financial reporting firms. The study period is from 2014 to 2017, involving 468 firm-year observations. The sample companies are from all industry sectors at the IDX, which include agriculture, infrastructure, utilities, transportation, mining, property, real estate, building construction, trading, service, and investment companies.

[74] Event window is determined from 10 days before the event date (-10, -9, -8, -7, -6, -5, -4, -3, -2, -1) to 10 days after the event date (1, 2, 3, 4, 5, 6, 7, 8, 9, 10). The event date is signed by day t = 0.

Table 18 Test of Significance of CAAR using Scholes-Williams' Beta Estimate Method during the Event Window for All Reporting Firms, Timely, and Late Reporting Firms

Day t to event date	Scholes-Williams' Beta Estimate					
	All Firms		Timely Firms		Late Firms	
	CAAR	t-value	CAAR	t-value	CAAR	t-value
-10	0.0007	1.1616	0.0006	0.8755	0.0019	1.4091 *)
-9	0.0010	1.4452*)	0.0010	1.4322 *)	0.0003	0.2102
-8	0.0009	1.2068	0.0009	1.0947	0.0012	0.5462
-7	0.0006	0.9170	0.0005	0.8208	0.0008	0.4722
-6	0.0004	0.5875	0.0003	0.4704	0.0008	0.6729
-5	0.0008	1.1481	0.0013	1.8216**)	- 0.0039	- 1.7108**)
-4	0.0006	1.0045	0.0010	1.5491*)	- 0.0033	- 1.9568**)
-3	0.0010	1.4294*)	0.0011	1.7715**)	- 0.0002	- 0.0566
-2	0.0015	2.5061***)	0.0017	2.6455***)	0.0004	0.1697
-1	0.0021	3.4335***)	0.0028	4.2551***)	- 0.0040	- 2.2093**)
0	0.0032	4.0831***)	0.0036	4.4124***)	- 0.0010	- 0.3892
1	0.0033	4.8184***)	0.0038	5.0939***)	- 0.0017	- 2.0526**)
2	0.0028	5.0126***)	0.0035	6.0737***)	- 0.0045	- 2.6322***)
3	0.0037	5.6061***)	0.0039	5.9249***)	0.0025	0.7920
4	0.0043	8.0652***)	0.0045	7.8215***)	0.0028	1.9467**)
5	0.0060	8.2133***)	0.0064	8.5914***)	0.0027	0.8595
6	0.0051	8.1616***)	0.0055	8.2539***)	0.0016	0.8387
7	0.0053	6.5078***)	0.0058	7.4163***)	0.0002	0.0501
8	0.0060	9.1290***)	0.0064	8.9598***)	0.0019	1.3967*)
9	0.0062	9.2691***)	0.0065	9.1936***)	0.0032	1.4747*)
10	0.0049	5.9422***)	0.0055	7.0511***)	- 0.0014	- 0.3200

NOTE: This table presents the cumulative average abnormal returns (CAAR) in day t relative to the event date (t = 0) for all firms from 2014 to 2017. The event date is the day when the annual financial statements is submitted to the OJK. The calculation of CAAR involves Scholes-Williams' beta estimate procedures. The estimation windows are 200 days before the event window, and the event windows are 21 days (10 days before the event date and 10 days after the event date). The expected returns using the beta estimate procedures by Scholes Williams and Dimson are calculated based on the Equation in 3.12. The abnormal returns (AR) are calculated based on the Equation in 3.13. The cumulative average abnormal returns (CAAR) are generated based on the Equation in 3.18. The t-value is calculated using the Equation in 3.19.
*) Significant at the 10% level (t-value > 1.282)
**) Significant at the 5% level (t-value > 1.645)
***) Significant at the 1% level (t-value > 2.326)

As seen in Table 18, most CAAR of all financial reporting firms shows significant t-value from 3 days before the event date until 10 (ten) days after the event date. While most CAAR of timely financial reporting firms show significant t-value from 5 days before the event date. However, all financial reporting firms and timely financial reporting firms present significance of CAAR at 10% 9 days before the event date. All financial reporting firms and timely financial reporting firms show positive values of CAAR during the event window, indicating that good news is delivered in the financial reporting. Further, the late financial reporting firms provide positive significance of CAAR in some parts of the event window, including 10 days before the event

date, 4 days after the event date, 8 days after the event date, and 9 days after the event date. While the negative significance of CAAR is presented in the late financial reporting firms in days -5, -4, -1, 0, 1, 2, and 10. The negative values of CAAR indicate that late financial reporting contains bad news, which triggers negative reactions of the stock markets.

Table 19 Test of Significance of CAAR using Dimson's Beta Estimate Procedure during the Event Window for All Reporting Firms, Timely, and Late Reporting Firms

Day t to event date	Dimson's Beta Estimate					
	All Firms		Timely Firms		Late Firms	
	CAAR	t-value	CAAR	t-value	CAAR	t-value
-10	0.0012	1.8544**)	0.0009	1.3719*)	0.0024	1.9044**)
-9	0.0020	2.6666***)	0.0016	2.2083**)	0.0035	1.0626
-8	0.0021	2.5881***)	0.0013	1.6745**)	0.0070	2.2287**)
-7	0.0019	2.9477***)	0.0011	1.6887**)	0.0071	4.3671***)
-6	0.0018	2.5382***)	0.0009	1.2238*)	0.0081	6.7530***)
-5	0.0020	2.8321***)	0.0016	2.2509**)	0.0035	1.5761*)
-4	0.0019	2.9426***)	0.0015	2.1880**)	0.0039	2.4244***)
-3	0.0027	3.7426***)	0.0019	3.0640***)	0.0072	1.7903**)
-2	0.0033	5.2526***)	0.0023	3.7995***)	0.0079	2.8528***)
-1	0.0039	5.9987***)	0.0033	5.0324***)	0.0063	2.1889**)
0	0.0049	6.0906***)	0.0040	4.9467***)	0.0071	2.1874**)
1	0.0050	7.0223***)	0.0042	5.6222***)	0.0063	7.7527***)
2	0.0048	8.1230***)	0.0043	7.0970***)	0.0039	2.3138**)
3	0.0056	8.0033***)	0.0044	6.7958***)	0.0099	3.0254***)
4	0.0060	9.9544***)	0.0049	8.4386***)	0.0071	2.4507***)
5	0.0080	10.3687***)	0.0068	9.2181***)	0.0095	2.7194***)
6	0.0075	10.8884***)	0.0061	9.2187***)	0.0113	4.1108***)
7	0.0077	9.3145***)	0.0062	7.8558***)	0.0124	3.6087***)
8	0.0085	12.2688***)	0.0067	9.4622***)	0.0167	7.5202***)
9	0.0088	12.5508***)	0.0071	10.0570***)	0.0153	8.9468***)
10	0.0073	9.5337***)	0.0060	8.2971***)	0.0123	3.6800***)

NOTE: This table presents the cumulative average abnormal returns (CAAR) in day t relative to the event date (t = 0) for all firms from 2014 to 2017. The event date is the day when the annual financial statements is submitted to the OJK. The calculation of CAAR involves Dimson's beta estimate procedures. The estimation windows are 200 days before the event window, and the event windows are 21 days (10 days before the event date and 10 days after the event date). The expected returns using the beta estimate procedures by Scholes Williams and Dimson are calculated based on the Equation in 3.12. The abnormal returns (AR) are calculated based on the Equation in 3.13. The cumulative average abnormal returns (CAAR) are generated based on the Equation in 3.18. The t-value is calculated using the Equation in 3.19.
*) Significant at the 10% level (t-value > 1.282)
**) Significant at the 5% level (t-value > 1.645)
***) Significant at the 1% level (t-value > 2.326)

As shown in Table 19, most CAAR of all financial reporting firms, timely, and late financial reporting firms show significant t-value with a various level of significance. Only day -9 of late financial reporting firms presents not significant CAAR. The majority of CAAR using Dimson's

beta estimate method provides positive values of CAAR, indicating that stock markets react positively to the financial reporting for early as well as late reporting. The data also show that the majority of CAAR using Dimson's beta estimate method presents 1% significant level, meaning the stock markets react positively and significantly.

6.3 Descriptive Statistics

Table 20 illustrates the number of early and late financial reporting firms in the sample. According to Table 20, from the total 101 observed firms in 2014, only 5% (5 firms) are categorised as late financial reporting firms. In 2015, the number of late financial reporting firms were 16 firms, 15% out of 109 firms. In 2016, only 11 firms were late financial reporting firms out of the 124 total observed firms. In 2017, 13 firms were late financial reporting firms out of the 134 total observed firms. Overall, only 10% (45 firms) are categorised as late financial reporting firms from the 468 total observed firms from 2014 to 2017. This data indicates that the annual financial reporting compliance of the Indonesian listed firms are much better than those in the study of Rahmawati (2013). Rahmawati (2013) reported that 275 firms (49%) are categorised as late financial reporting firms from the 568 total observed firms for the periods form 2003 to 2008.

Table 20 The Number of Timely and Late Reporting Firms from 2014 to 2017

Years	Timely		Late		Total
	N	%	N	%	N
2014	96	95%	5	5%	101
2015	93	85%	16	15%	109
2016	113	91%	11	9%	124
2017	121	90%	13	10%	134
All years	423	90%	45	10%	468

Table 21 presents descriptive statistics of CAAR using Scholes-Williams and Dimson's beta estimate methods for all financial reporting firms, timely and late financial reporting firms from 2014 to 2017. The data consist of 468 firm-year observations for all financial reporting firms, 423 firm-year observations for timely financial reporting firms, and 45 firm-year observations for late financial reporting firms. The overall data show that the mean values of CAAR are in positive for all event windows except for the late financial reporting firms of CAAR (-1, +1) and CAAR (-2, +2) for both Scholes-Williams and Dimson's beta estimate method, indicating negative mean values of CAAR. Meanwhile, the minimum values of CAAR for all event windows present negative values of CAAR both using Scholes-Williams and Dimson's beta estimate method. The negative values of CAAR describe bad news contained in the financial reporting. Further, the maximum values of CAAR for all event windows show positive values of CAAR both using

Scholes-Williams and Dimson's beta estimate method. The positive values of CAAR indicate that the financial reporting contains good news, which triggers stock markets to react positively.

Table 21 Descriptive Statistic of CAAR using Scholes-Williams and Dimson's Adjusted Beta Estimate Procedures for All Financial Reporting Firms, Timely, and Late Financial Reporting Firms from 2014 to 2017

ALL FIRMS					
Scholes-Williams's Beta Estimate					
Variables	**N**	**Mean**	**Std Dev.**	**Min**	**Max**
CAAR (-1, +1)	468	0.0018	0.0227	- 0.0925	0.1396
CAAR (-2, +2)	468	0.0018	0.0276	- 0.1256	0.1698
CAAR (-3, +3)	468	0.0031	0.0326	- 0.1999	0.2018
CAAR (-4, +4)	468	0.0036	0.0345	- 0.1550	0.2231
CAAR (-5, +5)	468	0.0057	0.0416	- 0.2395	0.2542
Dimson's Beta Estimate					
Variables	**N**	**Mean**	**Std Dev.**	**Min**	**Max**
CAAR (-1, +1)	468	0.0015	0.0228	- 0.0919	0.1402
CAAR (-2, +2)	468	0.0020	0.0278	- 0.1243	0.1711
CAAR (-3, +3)	468	0.0033	0.0327	- 0.2000	0.2024
CAAR (-4, +4)	468	0.0035	0.0350	- 0.1563	0.2229
CAAR (-5, +5)	468	0.0056	0.0420	- 0.2407	0.2561
TIMELY FIRMS					
Scholes-Williams' Beta Estimate					
Variables	**N**	**Mean**	**Std Dev.**	**Min**	**Max**
CAAR (-1, +1)	423	0.0022	0.0231	- 0.0925	0.1396
CAAR (-2, +2)	423	0.0024	0.0277	- 0.1256	0.1698
CAAR (-3, +3)	423	0.0028	0.0318	- 0.1999	0.2018
CAAR (-4, +4)	423	0.0032	0.0333	- 0.1550	0.2041
CAAR (-5, +5)	423	0.0061	0.0402	- 0.2395	0.2542
Dimson's Beta Estimate					
Variables	**N**	**Mean**	**Std Dev.**	**Min**	**Max**
CAAR (-1, +1)	423	0.0018	0.0231	- 0.0919	0.1402
CAAR (-2, +2)	423	0.0023	0.0279	- 0.1243	0.1711
CAAR (-3, +3)	423	0.0029	0.0318	- 0.2000	0.2024
CAAR (-4, +4)	423	0.0032	0.0334	- 0.1563	0.2046
CAAR (-5, +5)	423	0.0059	0.0404	- 0.2407	0.2561
LATE FIRMS					
Scholes-Williams' Beta Estimate					
Variables	**N**	**Mean**	**Std Dev.**	**Min**	**Max**
CAAR (-1, +1)	45	- 0.0021	0.0189	- 0.0435	0.0838
CAAR (-2, +2)	45	- 0.0043	0.0256	- 0.1038	0.0828

Table continues next page

CAAR (-3, +3)	45	0.0057	0.0397	- 0.0477	0.1853
CAAR (-4, +4)	45	0.0067	0.0449	- 0.0703	0.2231
CAAR (-5, +5)	45	0.0018	0.0531	- 0.0715	0.2159
Dimson's Beta Estimate					
Variables	**N**	**Mean**	**Std Dev.**	**Min**	**Max**
CAAR (-1, +1)	45	- 0.0016	0.0183	- 0.0423	0.0831
CAAR (-2, +2)	45	- 0.0033	0.0270	- 0.1017	0.0819
CAAR (-3, +3)	45	0.0059	0.0408	- 0.0658	0.1859
CAAR (-4, +4)	45	0.0035	0.0516	- 0.1424	0.2229
CAAR (-5, +5)	45	0.0014	0.0548	- 0.0810	0.2149

NOTE: CAAR (-1, +1) are cumulative average abnormal returns from one day prior to the date of the event to one day after the event date; CAAR (-2, +2) are cumulative average abnormal returns from two days prior to the date of the event to two days after the event date; CAAR (-3, +3) are cumulative average abnormal returns from three days prior to the date of the event to three days after the event date; CAAR (-4, +4) are cumulative average abnormal returns from four days prior to the date of the event to four days after the event date; CAAR (-5, +5) are cumulative average abnormal returns from five days prior to the date of the event to five days after the event date. Scholes-Williams is the adjusted beta estimate using Scholes-Williams's method. Dimson is the adjusted beta estimate using Dimson's procedure. All firms are all financial reporting firms, including timely and late financial reporting firms from 2014 to 2017 (468 firm-year observations). Timely firms are timely financial reporting firms, consisting of 423 firm-year observations from 2014 to 2017. Late firms are late financial reporting firms, consisting of 45 firm-year observations from 2014 to 2017.

6.4 Discussion and Analysis of Asymmetrical Stock Market Reactions

Following Wickremasinghe (2004), the least square model to test the H_9, referring to RQ3, was used. This study divides timely and late financial reporting firms using dummy variable. Firms with timely financial reporting lag are coded '1', otherwise are coded '0'. The mandatory annual financial reporting lag in Indonesia for the period from 2014 to 2017 is 90 days after the end of financial year. Therefore, firms submitting their annual financial reports to the Financial Service Authority of Indonesia (Otoritas Jasa Keuangan/OJK) within 90 days since the end of financial year are categorised as timely financial reporting lag, otherwise are categorised as late financial reporting lag.[75] Furthermore, adapted from Wickremasinghe (2004), Lobo (2000), and Leone, Wu and Zimmerman (2006), the Wald test was used to test the asymmetric stock market reactions between early and late financial reporting firms. If the Wald test rejects the null hypothesis of $\beta_1 = 0$, then the asymmetric is constructed. If the Wald test presents $\beta_1 > 0$, the stock market reactions between timely and late financial reporting lag are asymmetric. Meanwhile, if the Wald test shows $\beta_1 = 0$, the stock market reactions between timely and late financial reporting lag are symmetric, meaning that the null hypothesis is accepted.

The Chow test, Hausman test, and Breusch-Pagan Lagrange Multiplier test were also performed on all models to chose between the common effect model (CEM), fixed effect model (FEM), and

[75] However, firms submitting their annual financial reports after 90 days from the end of financial year are still categorized as early financial reporting lag if the day of 90th falls in holiday until the first working day of the listed firms submitting their annual financial reports.

random effect model (REM). Based on those tests, the CEM was selected for all models. The results of Chow test, Hausman test, and Breusch-Pagan Lagrange Multiplier test for stock market reactions using Scholes-Williams' beta estimate method, are presented in Table 20. Table 20 also presents the asymmetric stock market reactions between timely and late financial reporting firms using Scholes-Williams' beta estimate procedure. According to the Wald test, the majority of the models show significant t-statistics, consisting of 2.9694 with p-value of 0.0031 (significant at 1% level) for CAAR (-1, +1), 5.9518 with p-value of 0.0000 (significant at 1% level) for CAAR (-2, +2), 3.4424 with p-value of 0.0000 (significant at 1% level) for CAAR (-4, +4), and 11.6345 with p-value of 0.0000 (significant at 1% level) for CAAR (-5, +5). Those data indicate that the asymmetric stock market reactions between timely and late financial reporting lag are presented by model 1, model 2, model 4, and model 5. Therefore, CAAR (-1, +1), CAAR (-2, +2), CAAR (-4, +4), and CAAR (-5, +5), using Scholes-Williams' beta estimate method, show the asymmetric stock market reactions between timely and late financial reporting indicated by significant t-statistics on the Wald-test. Thus, the null hypotheses of $\beta_1 = 0$ for CAAR (-1, +1), CAAR (-2, +2), CAAR (-4, +4), and CAAR (-5, +5) are rejected, meaning that on those models, the alternative hypotheses of $\beta_1 > 0$ are accepted.

As shown in Table 22, model 1 for CAAR (-1, +1), model 2 for CAAR (-2, +2), model 4 for CAAR (-4, +4) and model 5 for CAAR (-5, +5) present significant coefficients for D_FRL. CAAR (-1, +1) shows the coefficient of D_FRL accounting for 0.0022 with p-value of 0.0031 (significant at 1% level). CAAR (-2, +2) presents the coefficient of D_FRL accounting for 0.0080 with p-value of 0.0000 (significant at 1% level). Also, CAAR (-4, +4) shows the coefficient of D_FRL accounting for 0.0019 with p-value of 0.0006 (significant at 1% level). Finally, CAAR (-5, +5) presents the coefficient of D_FRL for 0.0041 with p-value of 0.0000 (significant at 1% level). However, only CAAR (-3, +3) provides insignificant t-statistics on Wald test, consisting of p-value of 0.5213 for t-statistics of 0.6418. Also, CAAR (-3, +3) shows the coefficient of D_FRL for about 0.0009 with p-value of 0.5213 (not significant). It indicates that CAAR (-3, +3) presents symmetric stock market reactions between timely and late financial reporting lag. Hence the null hypothesis of $\beta_1 = 0$ for CAAR (-3, +3) is accepted, and the alternative hypothesis of $\beta_1 > 0$ is rejected.

Table 22 Asymmetric Stock Market Reactions between Timely and Late Financial Reporting Firms using Scholes-Williams' Beta Estimate Method

Common Effect Model							
Variables		**Dependent: Scholes-Williams' Beta Estimate**					
		CAAR (-1, +1)		**CAAR (-2, +2)**		**CAAR (-3, +3)**	
Independent	**Expected Sign**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**
Constant		-0.0072	0.000***)	-0.0097	0.0000***)	0.0013	0.7531
D_FRL	+	0.0022	0.0031***)	0.0080	0.0000***)	0.0009	0.5213
Firm Size		0.0004	0.0000***)	0.0002	0.0251**)	-0.0001	0.6553
Leverage		0.0004	0.0000***)	0.0006	0.0000***)	0.0006	0.0274**)
Goodness of Fit:							
R Square		0.0466		0.1044		0.0096	
Adjusted R Square		0.0405		0.0986		0.0032	
F-Statistics		7.5746		18.0367		1.5106	
P-Value		0.0000***)		0.0000***)		0.2109	
Chow Test:							
Cross-section Chi-square		155.6576		146.9573		178.7344	
P-Value		0.3378		0.5320		0.0487**)	
Hausman Test:							
Cross-section random		5.5777		1.7067		6.9911	
P-Value		0.1341		0.6354		0.0722	
Breusch-Pagan LM Test:							
Cross-section Breusch Pagan		0.3073		1.3049		0.0958	
P-Value		0.5793		0.2533		0.7569	
Wald Test:							
t-Statistics		2.9694		5.9518		0.6418	
P-Value		0.0031***)		0.0000***)		0.5213	
Sample		2014-2017		2014-2017		2014-2017	
Variables		**Dependent**					
		CAAR (-4, +4)		**CAAR (-5, +5)**			
Independent	**Expected Sign**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**		
Constant		0.0008	0.0942**)	-0.0011	0.7472		
D_FRL	+	0.0019	0.0006***)	0.0041	0.0000***)		
Firm Size		5.98E-05	0.0014***)	-0.0001	0.7666		
Leverage		0.0011	0.0000***)	0.0007	0.0132**)		
Goodness of Fit:							
R Square		0.0457		0.0161			
Adjusted R Square		0.0395		0.0098			
F-Statistics		7.4075		2.5419			
P-Value		0.0000***)		0.0557*)			

Table continues next page

Chow Test: Cross-section Chi-square		178.3325		171.3830			
P-Value		0.0508		0.1012			
Hausman Test: Cross-section random		10.8468		10.6733			
P-Value		0.0126**)		0.0136**)			
Breusch-Pagan LM Test: Cross-section Breusch Pagan		0.1506		0.3915			
P-Value		0.6979		0.5315			
Wald Test:							
t-Statistics		3.4424		11.6345			
P-Value		0.0000***)		0.0000***)			
Sample		2014-2017		2014-2017			

NOTE: CAAR (-1, +1) are cumulative average abnormal returns from one day prior to the date of the event to one day after the event date; CAAR (-2, +2) are cumulative average abnormal returns from two days prior to the date of the event to two days after the event date; CAAR (-3, +3) are cumulative average abnormal returns from three days prior to the date of the event to three days after the event date; CAAR (-4, +4) are cumulative average abnormal returns from four days prior to the date of the event to four days after the event date; CAAR (-5, +5) are cumulative average abnormal returns from five days prior to the date of the event to five days after the event date; D_FRL_{it} denotes dummy variable of FRL, code '1' for firms with timely annual financial reporting, otherwise is coded '0'; α_i is constant; $\beta_1, \beta_2, \beta_3$ are coefficients; and ε_{it} is error term.

Model 1: $CAAR_{(-1,+1)} = \alpha_i + \beta_1 D\_FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it}$, Equation 3.36

Model 2: $CAAR_{(-2,+2)} = \alpha_i + \beta_1 D\_FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it}$, Equation 3.37

Model 3: $CAAR_{(-3,+3)} = \alpha_i + \beta_1 D\_FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it}$, Equation 3.38

Model 4: $CAAR_{(-4,+4)} = \alpha_i + \beta_1 D\_FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it}$, Equation 3.39

Model 5: $CAAR_{(-5,+5)} = \alpha_i + \beta_1 D\_FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it}$, Equation 3.40

*) Significant at the 10% level (p-value < 10%)

**) Significant at the 5% level (p-value < 5%)

***) Significant at the 1% level (p-value < 1%)

Table 23 illustrates the regression results to analyse the asymmetric stock market reactions between timely and late financial reporting lag using Dimson's beta estimate procedure. The Chow test, Hausman test and Breusch-Pagan Lagrange Multiplier test were also performed on all models to chose between common effect model (CEM), fixed effect model (FEM), and random effect model (REM). Based on those tests, the CEM was selected for all models. The results of the Chow test, Hausman test, and Breusch-Pagan Lagrange Multiplier test for stock market reactions using Dimson's beta estimate method are presented in Table 23 for all models. Further, according to the Wald test, the evidence about the asymmetric stock market reactions between timely and late financial reporting lag using Dimson's beta estimate method, is found for model 1, model 2, and model 5. The Wald-test for CAAR (-1, +1), CAAR (-2, +2), and CAAR (-5, +5) rejects the null hypotheses of $\beta_1 = 0$ and accept the alternative hypotheses of $\beta_1 > 0$.

CAAR (-1, +1) shows the t-statistics of 4.4682 with p-value of 0.0000 (significant at 1% level) on Wald-test. CAAR (-2, +2) also presents the Wald-test t-statistics of 5.0746 with p-value of 0.0000 (significant at 1% level). Furthermore, the t-statistics of Wald test for CAAR (-5, +5) is 3.2144 with p-value of 0.0014 (significant at 1% level). Those data illustrate that the null

hypothesis of $\beta_1 = 0$ is rejected, and the alternative hypothesis of $\beta_1 > 0$ is accepted, indicating the asymmetric stock market reactions between timely and late financial reporting lag. Therefore, there are asymmetric stock market reactions between timely and late financial reporting lag for CAAR (-1, +1), CAAR (-2, +2), and CAAR (-5, +5) using Dimson's beta estimate method. However, CAAR (-3, +3) and CAAR (-4, +4) show insignificant t-statistics on Wald test. CAAR (-3, +3) presents the t-statistics of -0.4897 with p-value of 0.6245 (not significant) on Wald test. Also, CAAR (-4, +4) describes the t-statistics of 0.8599 with p-value of 0.3903 on Wald test. It indicates that the null hypothesis of $\beta_1 = 0$ is accepted, and the alternative hypothesis of $\beta_1 > 0$ is rejected for CAAR (-3, +3) and CAAR (-4, +4).

As presented in Table 23, CAAR (-1, +1) shows the coefficient of 0.0032 with p-value of 0.0000 (significant at 1% level) for D_FRL. Also, CAAR (-2, +2) shows the coefficient estimates of D_FRL accounting for 0.0061 with p-value of 0.0000 (significant at 1% level), and CAAR (-5, +5) shows the coefficient estimates for D_FRL accounting for 0.0050 with p-value of 0.0014 (significant at 1% level). However, CAAR (-3, +3) and CAAR (-4, +4) show insignificant coefficient estimates for D_FRL. CAAR (-3, +3) describes the coefficient estimate for D_FRL accounting for -0.0025 with p-value of 0.6245 (not significant). Also, CAAR (-4, +4) explains the coefficient estimate for D_FRL for about 0.0008 with p-value of 0.3903 (not significant). It indicates that CAAR (-3, +3) and CAAR (-4, +4) present symmetric stock market reactions between timely and late financial reporting lag. In other words, there is no asymmetric stock market reactions between timely and late financial reporting lag for CAAR (-3, +3) and CAAR (-4, +4) using Dimson's beta estimate method.

Table 23 Asymmetric Stock Market Reactions between Timely and Late Financial Reporting Firms using Dimson's Beta Estimate Method

Common Effect Model							
Variables		**Dependent: Dimson's Beta Estimate**					
		CAAR (-1, +1)		**CAAR (-2, +2)**		**CAAR (-3, +3)**	
Independent	**Expected Sign**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**
Constant		-0.0078	0.0000***)	-0.0079	0.0015***)	0.0144	0.2913
D_FRL	+	0.0032	0.0000***)	0.0061	0.0000***)	-0.0025	0.6245
Firm Size		0.0004	0.0000***)	0.0002	0.0542*)	-0.0008	0.4278
Leverage		0.0006	0.0000***)	0.0004	0.0001***)	0.0013	0.1212
Goodness of Fit:							
R Square		0.3911		0.0475		0.0067	
Adjusted R Square		0.3871		0.0413		0.0003	
F-Statistics		99.3544		7.7148		1.0511	
P-Value		0.0000***)		0.0000***)		0.3696	
Chow Test:							
Cross-section Chi-square		150.7464		146.4362		171.2928	
P-Value		0.4446		0.5441		0.1020	
Hausman Test:							
Cross-section random		2.2992		0.7925		6.0079	
P-Value		0.5127		0.8512		0.1112	
Breusch-Pagan LM Test:							
Cross-section Breusch Pagan		0.3360		1.1530		0.3650	
P-Value		0.5621		0.2829		0.5457	
Wald Test:							
t-Statistics		4.4682		5.0746		-0.4897	
P-Value		0.0000***)		0.0000***)		0.6245	
Sample		2014-2017		2014-2017		2014-2017	

Variables		**Dependent**			
		CAAR (-4, +4)		**CAAR (-5, +5)**	
Independent	**Expected Sign**	**Coefficients**	**P-Value**	**Coefficients**	**P-Value**
Constant		-0.0009	0.5129	-0.0045	0.3008
D_FRL	+	0.0008	0.3903	0.0050	0.0014***)
Firm Size		0.0001	0.0815*)	0.0001	0.7142
Leverage		0.0009	0.0000***)	0.0006	0.0154**)
Goodness of Fit:					
R Square		0.0467		0.0108	
Adjusted R Square		0.0405		0.0044	
F-Statistics		7.5823		1.6917	
P-Value		0.0000***)		0.1679	

Table continues next page

Chow Test: Cross-section Chi-square		173.0521		160.5643			
P-Value		0.0865		0.2446			
Hausman Test: Cross-section random		7.3466		7.7947			
P-Value		0.0616		0.0504			
Breusch-Pagan LM Test: Cross-section Breusch Pagan		0.1679		0.9351			
P-Value		0.6819		0.3335			
Wald Test:							
t-Statistics		0.8599		3.2144			
P-Value		0.3903		0.0014***)			
Sample		2014-2017		2014-2017			

NOTE: CAAR (-1, +1) are cumulative average abnormal returns from one day prior to the date of the event to one day after the event date; CAAR (-2, +2) are cumulative average abnormal returns from two days prior to the date of the event to two days after the event date; CAAR (-3, +3) are cumulative average abnormal returns from three days prior to the date of the event to three days after the event date; CAAR (-4, +4) are cumulative average abnormal returns from four days prior to the date of the event to four days after the event date; CAAR (-5, +5) are cumulative average abnormal returns from five days prior to the date of the event to five days after the event date; D_FRL_{it} (late reporting firms) denote dummy variable of FRL, code '1' for firms with timely annual financial reporting, otherwise is coded '0'; α_i is constant; $\beta_1, \beta_2, \beta_3$ are coefficients; and ε_{it} is error term.

Model 1: $CAAR_{(-1,+1)} = \alpha_i + \beta_1 D\_FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it}$, Equation 3.36

Model 2: $CAAR_{(-2,+2)} = \alpha_i + \beta_1 D\_FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it}$, Equation 3.37

Model 3: $CAAR_{(-3,+3)} = \alpha_i + \beta_1 D\_FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it}$, Equation 3.38

Model 4: $CAAR_{(-4,+4)} = \alpha_i + \beta_1 D\_FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it}$, Equation 3.39

Model 5: $CAAR_{(-5,+5)} = \alpha_i + \beta_1 D\_FRL_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \varepsilon_{it}$, Equation 3.40

*) Significant at the 10% level (p-value < 10%)

**) Significant at the 5% level (p-value < 5%)

***) Significant at the 1% level (p-value < 1%)

To summarise, the evidence of asymmetric stock market reactions between timely and late financial reporting firms are found. According to the CAAR using Scholes-Williams' beta estimate method, the asymmetric stock market reactions between timely and late financial reporting lag are provided by CAAR (-1, +1), CAAR (-2, +2), CAAR (-4, +4), and CAAR (-5, +5). While, based on Dimson's beta estimate method, the asymmetric stock market reactions between timely and late financial reporting lag are uncovered by CAAR (-1, +1), CAAR (-2, +2), and CAAR (-5, +5). Interestingly, CAAR (-3, +3) for both Scoles-Williams and Dimson's beta estimate methods presents the symmetric stock market reactions between timely and late financial reporting lag. Meanwhile, CAAR (-4, +4) only shows symmetric stock market reactions between timely and late financial reporting lag using Dimson's beta estimate method.

Comparing among the short event windows, CAAR (-1, +1) and CAAR (-2, +2) show the most significant asymmetric stock market reactions between timely and late financial reporting among the other periods, indicated by the significant t-statistics on Wald test at 1% level, presenting the p-value of 0.0000 for CAAR (-1, +1) and CAAR (-2, +2) using both Scholes-Williams and Dimson's beta estimate methods. Also, the coefficient estimates of D_FRL on CAAR (-1, +1) and CAAR (-2, +2) show significance at 1% level for both Scholes-Williams and Dimson's beta

estimate methods. These data show that the stock markets react in a significantly different way in response to timely and late financial reporting lag during the 2 days before and the 2 days after the event date, indicating that most stock markets use or execute the information contained in the annual financial reporting during the event window of CAAR (-1, +1) and CAAR (-2. +2) or during the days approaching to the event date.

Nevertheless, the information signal cointained in the annual financial reporting is received by the stock markets since 5 days before the event date. Also, the stock markets remain use or execute the information contained in the annual financial reporting until 5 days after the event date. Therefore, CAAR (-5, +5) also shows the asymmetric stock market reactions between timely and late financial reporting lag for both Scholes-Williams and Dimson's beta estimate methods. The empirical evidence of CAAR (-1, +1), CAAR (-2, +2), CAAR (-4, +4), CAAR (-5, +5) using Scholes-Williams' beta estimate method and on CAAR (-1, +1), CAAR (-2, +2), CAAR (-5, +5) using Dimson's beta estimate method, supports hypothesis nine (H_9), which postulates that firms with timely financial reporting lag experience asymmetric stock market reactions from those with late financial reporting lag.

The overall findings are consistent with the findings in the study by Givoly and Palmon (1982), Kross (1982), Kross and Schroeder (1984), and Atiase, Bamber, and Tse (1989) that discovered the association between earnings releases and abnormal stock returns on the day of the announcement. The abnormal stock returns of firms that reported results early (late) were significantly greater (lower) than those of companies that released earnings late (early). Thus, the aggregate data indicate that stock market reactions have an inverse relationship with financial reporting timeliness. These stock market reactions could happen as a result of bad news included in late financial reporting and good news included in timely financial reporting. This study also contradicts the findings of Rahmawati (2018), who found no evidence to indicate a relationship between the information included (stock market responses) proxied by CAR (-2, +2) in annual financial reports and their financial disclosure time. Meanwhile, in the current study utilising Scholes-Wiliiams and Dimson's beta estimation approach, CAAR (-2, +2) showed asymmetrical stock reactions between timley and late reporting. Furthermore, the current study also proves the appropriate method to measure the asymmetric stock market reactions between timely and late financial reporting using the Wald-test as adapted from Wickremasinghe (2004).

6.5 Chapter Summary

This chapter tested hypothesis nine (H_9), which assumes that firms with timely financial reporting lag experience asymmetric stock market reactions from those with late financial reporting lag using Scholes-Williams and Dimson's beta estimate procedures. To check the H_9, this study

employs a sample of listed companies at the IDX, including agriculture, infrastructure, utilities, transportation, mining, property, real estate, building construction, trading, service, and investment companies from 2014 to 2017. The total observations are 468 unbalance-pooled panel data, dividing 423 timely financial reporting firms and 45 late financial reporting firms. This study separates timely and late financial reporting firms using dummy variable. Firms with timely financial reporting lag are coded '1', otherwise are coded '0'. The maximum of annual financial reporting lag in Indonesia from 2014 to 2017 is 90 days after the end of financial year. Therefore, firms submitting their annual financial reports to the Financial Service Authority of Indonesia (Otoritas Jasa Keuangan/OJK) within 90 days from the end of financial year are categorised as timely financial reporting lag, otherwise are categorised as late financial reporting lag.[76] The cumulative average abnormal returns (CAAR) were used to measure the stock market reactions.

The asymmetric stock market reactions between timely and late financial reporting are found on CAAR (-1, +1), CAAR (-2, +2), CAAR (-4, +4), and CAAR (-5, +5) using Scholes-Williams' beta estimate method. Meanwhile, on Dimson's beta estimate method, the asymmetric stock market reactions between timely and late financial reporting lag are found on CAAR (-1, +1), CAAR (-2, +2), and CAAR (-5, +5). Comparison among the short event windows demonstrates that CAAR (-1, +1) and CAAR (-2, +2) show the most asymmetric stock market reactions between timely and late financial reporting lag using both Scholes-Williams and Dimson's beta estimate methods. Also, the stock markets have received the information contained in the annual financial reporting or the investors could predict the information contained on the annual financial reporting from 5 days before the event date, and the stock markets still execute their investments on 5 days after the event date.

The overall findings support the study by Givoly and Palmon (1982), Kross (1982), Kross and Schroeder (1984), and Atiase, Bamber, and Tse (1989). The current study is succesfull for extending the Wald-test method in the literature financial reporting and stock market, which was adapted from Wickremasinghe (2004). The findings in the current study are also paradoxical with those in the study of Rahmawati (2018). In the current study applying Scholes-Wiliiams and Dimson's beta estimate methods, CAAR (-2, +2) presented asymmetrical stock reactions between timley and late financial reporting, which were not presented in the study by Rahmawati (2018) using proxy CAR (-2, +2).

The next chapter will present the conclusion including methodology, academic and practical contribution, and future research recommendation.

[76] However, firms submitting their annual financial reports after 90 days since the end of financial year are still categorized as early financial reporting lag if the day of 90th falls in holiday until the days of the listed firms submitting their annual financial reports.

Chapter 7

Conclusion

7.1 Introduction

Previous chapter discussed the results of the analysis of asymmetric stock market reactions between early and late financial reporting. This chapter summarises and concludes the data and findings of this study. Section 7.2 offers the conclusion about methodology and sample. Section 7.3 describes the three research questions, their related hypotheses, and the results of the test. Section 7.4 presents the contributions of this study, which are divided into academic and practical contributions. The limitations of this study are explained in Section 7.5. Some recommendations for future research are illustrated in Section 7.6. Section 7.7 concludes this study.

7.2 Methodology, Sample and Sample Selection

This study used a sample of Indonesian listed companies including agriculture, basic industry, consumer goods industry, infrastructure, utilities, transportations, mining, miscelaneous industry, property, real estate, building construction, trading, service, and investment. Using a stratified random sampling method, the total included sample were 468 firm-year observations from 2014 to 2017. The data were accessed from Yahoo Finance for historical stock prices, from Orbis-Bureau Van Dijk for financial ratios, and from the IDX and TICMI[77] for the annual financial reports. Analysing determinants for financial reporting lag uses LASSO regression without and with dummy time variables. The alternative proxy of firm size, profitability, leverage, related party transactions and tax audit was used to test the sensitivity of the findings without and with dummy time variables.

The two-stage least square model was used to analyse the stock market reactions to financial reporting lag as the main analysis. In the first stage of the model, the predicted financial reporting lag[78] was taken from the regression results between financial reporting lag and its instrumental variables. In the second stage of the model, the predicted financial reporting lag was incorporated, and regressing the stock market reactions proxied by CAAR on the predicted financial reporting lag. While the actual days of financial reporting lag and dynamic GMM model were used to test the robustness of the results in the main analysis. The analysis of stock market reactions to financial reporting lag used CAAR (-1, +1), CAAR (-2, +2), CAAR (-3, +3), CAAR (-4, +4), and

[77] TICMI is abbreviated from The Indonesia Capital Market Institute managed by PT. Indonesian Capital Market Electronic Library (ICaMEL) as the subsidiary of PT. Bursa Efek Indonesia/BEI or the Indonesia Stock Exchange/IDX (TICMI 2018).

[78] The predicted financial reporting lag was taken from the fitted values of the regression on the first model.

CAAR (-5, +5) as dependent variables using Scholes-Williams and Dimson's beta estimate procedures.

Finally, the least square model using the Wald-test was utilised to analyse the asymmetric stock market reactions between timely and late financial reporting lag. This study divided timely and late financial reporting firms using a dummy variable. Firms with timely financial reporting lag were coded '1', otherwise were coded '0'. The maximum of annual financial reporting lag in Indonesia from 2014 to 2017 was 90 days after the end of financial year. Therefore, firms submitting their annual financial reports to the OJK within 90 days since the end of financial year were categorised as timely financial reporting lag, otherwise were categorised as late financial reporting lag.[79] The analysis of the asymmetric stock market reactions between timely and late financial reporting also used CAAR (-1, +1), CAAR (-2, +2), CAAR (-3, +3), CAAR (-4, +4), and CAAR (-5, +5) as dependent variables both Scholes-Williams and Dimson's beta estimate procedures.

7.3 Research Aims, Research Questions, Related Hypotheses, and The Results of the Test.

The first research aim of this study is to investigate the impact of the audit report lag, firm size, profitability, related party transactions, leverage, audit opinion and tax audit on financial reporting lag of listed companies in Indonesia. The first research aim is followed by research question one (RQ1): 'What is the impact of the audit report lag, firm size, profitability, related party transactions, leverage, audit opinion, and tax audit on financial reporting lag of listed companies in Indonesia?' Further, the second research aim of this study is to analyse the relationship between financial reporting lag and stock market reactions of the listed companies in Indonesia. The second research aim is continued by research question two (RQ2): 'What is the relationship between the financial reporting lag and stock market reactions of the listed companies in Indonesia?'

The last research aim in this study is to examine the asymmetry of stock market reactions between timely and late financial reporting of the listed companies in Indonesia. The last research aim in this study is continued by research question three (RQ3): 'Are the stock market reactions asymmetric between timely and late financial reporting of the listed companies in Indonesia?' In this section, the description regarding the hypotheses and the main findings are structured into three sections. Section 7.3.1 presents the main conclusions concerning the first research question

[79] However, firms submitting their annual financial reports after 90 days since the end of financial year are still categorised as timely financial reporting lag if the day of 90th falls in holiday until the first working day of the listed firms submitting their annual financial reports.

(RQ1). The main results on research question two (RQ2) are described in Section 7.3.2, and the main findings on research question three (RQ3) are explained in Section 7.3.3.

7.3.1 Research Question One (RQ1)

The first question in this research is intended to achieve the objective of the first research aim, which investigates the impact of the audit report lag, firm size, profitability, related party transactions, leverage, audit opinion and the tax audit on the financial reporting lag of listed companies in Indonesia. There has been a lack of research investigating the impact of tax-related variables, including RPTs, leverage proxied by debt-to-equity ratio and tax audits into financial reporting lag. Related party transactions are quite notorious for minimising tax payments so that they are expected to influence longer financial reporting lag, considered as bad news. Habib and Muhammadi (2018) found that the RPTs affect longer audit report lag, which is assumed to lengthen financial reporting lag. Also, a high level of debt on leverage is notorious for taking tax advantages (Graham 2000). Increasing the amount of debt and decreasing the amount of equity on capital structure is called thin capitalisation. Thus, leverage proxied by debt-to-equity ratio is thought to influence longer financial reporting lag due to the nature of bad news on a high level of debt on a capital structure. Finally, a tax audit is assumed to increase financial reporting lag because the bad news from the tax audit outcomes in the case of an additional tax obligation and penalty could impact the financial reporting timeliness of a company being tax audited (Pardede 2016).

Other predictors investigated in this research are audit report lag, firm size, profitability, and the type of audit opinion. Audit report lag is recognized as the most crucial variable in financial reporting timeliness (Abernathy et al. 2017; Chan, Luo & Mo 2016; Eghlaiow, S, Wickremasinghe, G & Sofocleous, S 2012). Thus, the audit report lag is expected to lengthen the financial reporting lag. Firm size was also found as the main determinant analysed in the study into audit delay (Khoufi & Khoufi 2018) and financial reporting timeliness (Al-Ajmi 2008). Firm size is expected to shorten financial reporting lag because Owusu-Ansah and Leventis (2006) and Owusu-Ansah (2000) found a negative relationship between financial reporting lead time and firm size due to a good internal control, modern accounting systems and broad external interests. Finally, profitability and qualified audit opinions are expected to influence shorter and longer financial reporting lags, respectively. A company that has financial losses or bad news tends to delay its annual report longer than a company that has made a profit or good news (Al-Ajmi 2008; Carslaw & Kaplan 1991; Owusu-Ansah 2000). Meanwhile, a listed firm will need to negotiate with the independent auditor if their financial statements are found to be a qualified opinion, which could lengthen financial reporting lag (Daoud et al. 2014).

The main findings of RQ1 is that audit report lag, proxied by the number of days between the end of the financial year and the date of auditor's signature, is significantly correlated with financial reporting lag in positive direction in the main and robustness analysis without and with dummy time variables, which fully support the hypothesis one (H_1) and confirms the finding in the study of Owusu-Ansah (2000). Further, the second hypothesis (H_2), referring to research question one (RQ1), tests the relationship between firm size and financial reporting lag. Evidence was discovered that showed the negative correlation between firm size and financial reporting lag. The overall findings indicate that this study shows a significantly negative relationship between firm size and financial reporting lag, which fully support hypothesis two (H_2) and conform to the finding in the study of Al-Ajmi (2008).

The third hypothesis (H_3) in this study posits the association between profitability and financial reporting lag. According to the data analysis, there is no significant correlation between profitability and financial reporting lag, which does not support hypothesis three (H_3). This finding is not consistent with the study of Courtis (1976), Owusu-Ansah (2000), Al-Ajmi (2008), Afify (2009), Daoud et al. (2014), who found that profitability has a negative relationship with financial reporting timeliness, they also supported the findings in the study of Davies and Whittred (1980), Dyer and McHugh (1975), Al-Tahat (2015), and Hashim, Hashim and Jambari (2013), who found that profitability is not associated with financial reporting lag. Further, the fourth hypothesis (H_4) in this research is to test the relationship between related party transactions and financial reporting lag. The related party transactions, proxied by the logarithm of total related party transactions and the values of related party transactions, are among the tax-related variables assessed in this research. Based on the findings in the main analysis and robustness test with and without dummy time variables, no evidence is found about the significant relationship between related party transactions and financial reporting lag.

The fifth hypothesis (H_5) is purposed to test the relationship between leverage and financial reporting lag. Leverage proxied by DER is one of the tax-related variables. According to the data analysis, there is no evidence for a relationship between leverage and financial reporting lag in the main analysis and robustness test without and with dummy time variables. This evidence does not support hypothesis five (H_5). Furthermore, for the sixth hypothesis (H_6), this research is intended to verify the relationship between qualified audit opinion and financial reporting lag. According to data analysis, this study finds no relationship between qualified audit opinion and financial reporting lag, thus, rejecting hypothesis six (H_6).

Finally, the seventh hypothesis (H_7) tests the relationship between tax audit and financial reporting lag. According to the data analysis, there is no significant relationship between the tax audit using dummy variable and financial reporting lag. The finding is consistent with the

outcome in the study by Pardede (2016). Pardede (2016) found no association between the tax audit and financial reporting timeliness. Furthermore, this study also uses the values of tax audit results contained in the tax assessment letter[80] as the alternative proxy for tax audit. Applying the values of tax audit results contained in the tax assessment letters also present no association between the tax audit results and the financial reporting lag, thus rejecting the hypothesis seven (H_7). Table 24 presents the main findings of research question one (RQ1), referring to $H_1 – H_7$.

Table 24 Summary for Research Question One (RQ1)

RQ1: What is the impact of the audit report lag, firm size, profitability, related party transactions, leverage, audit opinion, and the tax audit variables on the financial reporting lag of the listed companies in Indonesia?

Hypotheses	Testing Procedures	Main Findings
H_1: Firms that have long audit report lag experience longer financial reporting lag than do firms that have short audit report lag.	H_1 is tested using LASSO regression with and without dummy time variables for main analysis and robustness test, referring to the Equations 3.1 and 3.2.	The discoveries from the main test and the robustness test with and without dummy time variables show that a significantly positive relationship between the audit report lag and financial reporting lag are revealed. It indicates that firms, which have long audit report lag, experience longer financial reporting lag than do firms, which have short audit report lag, thus fully supporting H_1.
H_2: Bigger firms experience shorter financial reporting lag than do smaller firms.	H_2 is tested using LASSO regression with and without dummy time variables for main analysis and robustness test, referring to the Equations 3.1 and 3.2.	The evidence from the main and robustness test with and without dummy time variables reveals the negative and significant relationship between firm size and financial reporting lag. Those findings indicate that bigger firms experience shorter financial reporting lag than do smaller firms. Therefore, the findings fully support the H_2.
H_3: Firms with higher (lower) profitability have shorter (longer) financial reporting lag.	H_3 is tested using LASSO regression with and without dummy time variables for main analysis and robustness test, referring to the Equations 3.1 and 3.2.	The revelations from the analysis present no significant relationship between profitability and financial reporting lag, therefore not supporting the H_3.
H_4: Firms with a higher (lower) number of related party transactions experience longer (shorter) financial reporting lag.	H_4 is tested using LASSO regression with and without dummy time variables for main analysis and robustness test, referring to the Equations 3.1 and 3.2.	The findings from the main test and robustness test with and without dummy time variables show an insignificant relationship between related party transactions and

[80] According to Article 1 (one) point 15 "General Tax Provisions and Procedures Law" Number 16 (2009), the tax assessment letter (Surat Ketetapan Pajak/SKP) can be: (1) tax underpayment assessment letter (Surat Ketetapan Pajak Kurang Bayar/SKPKB), (2) additional tax underpayment assessment letter (Surat Ketetapan Pajak Kurang Bayar Tambahan/SKPKBT), (3) tax overpayment assessment letter (Surat Ketetapan Pajak Lebih Bayar/SKPLB) and (4) nil tax assessment letter (Surat Ketetapan Pajak Nihil (SKPN). However, those various tax assessment letters are disclosed in the same account called tax obligation in the financial statements along with tax litigation. SKPKB includes additional tax obligation and penalty. The penalty consists of 2 per cent of the additional tax obligations per month with a maximum of 24 months. SKPKBT includes additional tax obligations and penalty. The penalty consists of 50 per cent or 100 per cent of the additional tax obligations, depending on the cases. SKPLB does not contain the additional tax obligation and penalty. However, in some circumstances, the Directorate General of Taxes (DGT) should pay particular interest calculated from the tax overpayment to the taxpayer receiving SKPLB. SKPN does not contain additional tax obligation and penalty.

Hypotheses	Testing Procedures	Main Findings
		financial reporting lag, therefore rejecting the H_4.
H_5: Firms with higher (lower) debt to equity ratio have longer (shorter) financial reporting lag.	H_5 is tested using LASSO regression with and without dummy time variables for main analysis and robustness test, referring to the Equations 3.1 and 3.2.	The discovery from the main and robustness analysis provides no significant relationship between leverage or capital structure and financial reporting lag, therefore not supporting the H_5.
H_6: Firms receiving qualified audit opinions experience longer financial reporting lag than do firms receiving a clean audit opinion.	H_6 is tested using LASSO regression with and without dummy time variables for main analysis and robustness test, referring to the Equations 3.1 and 3.2.	The results from the main and robustness test with and without dummy time variables present no significant relationship between qualified audit opinion and financial reporting lag, therefore not supporting the H_6.
H_7: Firm with tax audit results experience longer financial reporting lag than do firms without tax audit results.	H_7 is tested using LASSO regression with and without dummy time variables for main analysis and robustness test, referring to the Equations 3.1 and 3.2.	The findings from the main and robustness test with and without dummy time variables present no significant relationship between tax audit and financial reporting lag, therefore not supporting the H_7.

7.3.2 Research Question Two (RQ2)

The second research question (RQ2) is purposed to answer the second research aim, which analyses the relationship between financial reporting lag and stock market reactions of listed companies in Indonesia using Scholes-Williams and Dimson's beta estimate methods. The main findings of this study regarding the second research question (RQ2) using two-stage least square model, referring to the H_8, show the evidence about the significant and negative relationship between predicted financial reporting lag and stock market reactions using Scholes-Williams' beta estimate method for CAAR (-1, +1), CAAR (-3, +3), CAAR (-4, +4), and CAAR (-5, +5). Meanwhile, Dimson's beta estimate methods present significant and negative relationship between predicted financial reporting lag and stock market reactions proxied by CAAR (-1, +1), CAAR (-2, +2), CAAR (-4, +4), and CAAR (-5, +5) using the two-stage least square model.

Furthermore, in the robustness test using the number of actual days of financial reporting lag, the negative and significant relationship between the actual days of financial reporting lag and stock market reactions using Dimson's beta estimate methods is uncovered on CAAR (-1, +1), CAAR (-2, +2), and CAAR (-5, +5). Meanwhile, the negative and significant relationship between the actual days of financial reporting lag and stock market reactions using Scholes-Williams' beta estimate method is revealed on CAAR (-1, +1), CAAR (-2, +2), CAAR (-3, +3), CAAR (-4, +4), and CAAR (-5, +5). The negative correlation means an inverse association between stock market reactions proxied by cumulative average abnormal returns (CAAR) and financial reporting lag, indicating that the information in the financial reporting is useful for the investors. Firms with long (short) financial reporting lag experience low (high) stock market reactions using Scholes-Williams and Dimson's beta estimate procedures, thus supporting the H_8.

For the dynamic GMM model, the data analysis shows a significantly negative relationship between financial reporting lag (FRL) and stock market reactions shown by all event windows including CAAR (-1, +1), CAAR (-2, +2), CAAR (-3, +3), CAAR (-4, +4), and CAAR (-5, +5) using Scholes-Williams' beta estimate methods. Meanwhile, for Dimson's beta estimate method, the results show that CAAR (-1, +1), CAAR (-3, +3), CAAR (-4, +4), and CAAR (-5, +5) have a significantly negative relationship with financial reporting lag. CAAR (-2, +2) does not show a significant relationship with financial reporting lag among the other observed event windows for Dimson's beta estimate method.

The comparison among the data analyses using the two-stage least square model, the OLS model, and the dynamic GMM shows that the dynamic GMM data analysis presents better models for Scholes-Williams and Dimson's beta estimate procedures. These results were indicated by significant F-statistics for all models using the dynamic GMM in Scholes-Williams and Dimson's beta estimate methods. The significant F-statistics explains that the models are acceptable. This study supports Ullah, Akhtar and Zaefarian (2018), Li et al. (2021), Roodman (2009), and Wintoki, Linck and Netter (2012), who recommended the use of the dynamic GMM for analysing panel data when an endogeneity problem is experienced in a model rather than using the two-stage least square model or the OLS model. This study also confirms the findings of Givoly and Palmon (1982), Kross (1982), and Kross and Schroeder (1984) regarding the information content. Table 25 presents the main findings related to research question two (RQ2), referring to the H_8.

Table 25 Summary for Research Question Two (RQ2)

RQ2: What is the relationship between the financial reporting lag and stock market reactions of the listed companies in Indonesia?

Hypothesis	Testing Procedures	Main Findings
H_8: Stock market reactions have a negative relationship with financial reporting lag.	H_8 is tested using the two-stage least square for the unbalanced panel data as the main test referring to the Equation (3.20) for the first stage of the model, and the Equations (3.21), (3.22), (3.23), (3.24), and (3.25) for the second stage of the model. The robustness test applies the unbalance panel data regression (common effect model), applying the number of actual days of financial reporting lag, referring to the Equations (3.26), (3.27), (3.28), (3.29), and (3.30). Further, the dynamic GMM is also employed to test the H_8, referring to the Equations of 3.31, 3.32, 3.33, 3.34, and 3.35.	Some evidence about significantly negative relationship between stock market reactions and financial reporting lag using Scholes-Williams and Dimson's beta estimate procedures in the two-stage least square model, the OLS model, and the dynamic GMM model are revealed. Therefore, the H_8 is supported.

7.3.3 Research Question Three (RQ3)

The third research question (RQ3) is to answer the third research aim, which examines the asymmetry of stock market reactions between timely and late financial reporting of listed companies in Indonesia using Scholes-Williams and Dimson's beta estimate procedures. The evidence about the asymmetric stock market reactions between timely and late financial reporting lag are uncovered in CAAR (-1, +1), CAAR (-2, +2), CAAR (-4, +4), CAAR (-5, +5) using Scholes-Williams' beta estimate method, and are uncovered in CAAR (-1, +1), CAAR (-2, +2), CAAR (-5, +5) using Dimson's beta estimate method. While CAAR (-3, +3), using Scholes-Williams' beta estimate method, and CAAR (-3, +3) and CAAR (-4, +4), using Dimson's beta estimate method, show symmetric stock market reactions between timely and late financial reporting lag.

Among the short event windows, CAAR (-1, +1) and CAAR (-2, +2) present the most asymmetric stock market reactions, indicated by the p-value of t-statistics on Wald test significant at 1% level for Scholes-Williams and Dimson's beta estimate method. Also, the coefficient estimates of D_FRL are significant at 1% level in positive direction for CAAR (-1, +1) and CAAR (-2, +2) both using Scholes-Williams' and Dimson's beta estimate methods. The asymmetric stock market reactions on CAAR (-5, +5) using Scholes-Williams' and Dimson's beta estimate methods indicate that the information contained in the annual financial reporting has been received by the investor, or the investors could predict the information contained on the annual financial reporting from 5 days before the event date. Also, the investors still use or execute the information contained in the annual financial reporting until 5 days after the event date. Therefore, the findings of this study support hypothesis nine (H_9). Table 26 presents the main findings related to research question three (RQ3), referring to the H_9.

Table 26 Summary for Research Question Three (RQ3)

RQ3: Are the stock market reactions asymmetric between timely and late reporting lag of the listed companies in Indonesia?

Hypothesis	Testing Procedures	Main Findings
H_9: Firms with timely financial reporting experience asymmetric stock market reactions compared to the firms with late financial reporting.	H_9 is tested by data analysis using the Wald test on least square model for the unbalanced panel data, referring to the Equations (3.36), (3.37), (3.38), (3.39), and (3.40).	Some evidence about asymmetric stock market reactions between timely and late financial reporting lag are found both in Scholes-Williams and Dimson's beta estimate methods. Therefore, the H_9 is fully supported.

7.4 Contributions of Study

This section is structured into two parts. Section 7.4.1 presents the academic contributions of this study. The practical contributions or the implications of this research into the related field are described in Section 7.4.2.

7.4.1 Academic Contribution

This study investigates the impact of tax-related variables (RPTs, leverage and tax audit) as well as other determinants (ARL, firm size, profitability, and audit opinion) on FRL due to the lack of research investigating tax-related variables in this area. In the financial reporting context, reducing tax payments can be considered bad news for investors. Kohlbeck and Mayhew (2004) asserted that the opportunistic attitude of a firm's management as the agency problem can be reflected by creating related party transactions. In the Indonesian context, Habib and Muhammadi (2018) found that the related party transactions lengthen audit report lag, indicating the awareness of an independent auditor regarding the negative consequences of the related party transactions as a tool for minimising tax payment. In Australia, Taylor and Richardson (2012) also found that the Australian listed firms utilise transfer pricing involving the RPTs and tax-haven regions as the main driver to avoid tax payment. Similarly, Clausing (2003) revealed significant findings of tax benefit stimulation from the related party transactions in the US companies by charging low prices.

However, this study found no evidence of a significant relationship between related party transactions and financial reporting lag. Although no significant relationship between related party transactions and financial reporting lag was found, this study may contribute to the literature of financial reporting timeliness by the use of total number of related party transactions as the proxy for related party transactions. This proxy was used by Nekhili and Cherif (2011) when investigating the relationship between related party transactions and the market value of company in French. Therefore, the use of total number of related party transactions as the proxy to investigate the relationship between related party transactions and financial reporting lag may contribute to the literature of financial reporting timeliness regardless of significant or non-significant finding.

Another tax-related variable is leverage proxied by DER. From a tax perspective, increasing debt on a firm's capital structure can have tax benefits (Graham 2000). The tax savings from debt and increased leverage, which can raise a firm's profits, are examples of agency problems (Butler 1988). Increasing the amount of debt and decreasing the amount of equity on a capital structure is called thin capitalisation. The Australian Tax Office (ATO) (2016) defined that a thinly

capitalised firm as one whose assets are funded by a high debt rate and relatively low equity, and debt to equity funding of a firm is frequently measured as a ratio or debt to equity ratio (DER). Taylor and Richardson (2012) found that thin capitalisation is one of the critical drivers to avoid tax payment for the Australian listed firms. However, this study also reveals no evidence about significant relationship between leverage and financial reporting lag, indicating that the Indonesian listed firms do not consider loan factor when they publish their annual financial reporting.

Finally, the tax-related variables assessed in this study is tax audit. This study finds no significant relationship between tax audit using dummy variable and financial reporting lag. The data analysis results using proxy of tax audit results contained in the tax assessment letters also show insignificant association with financial reporting lag. These discoveries conform the finding in the study of Pardede (2016) that found no significant relationship between tax audit and financial reporting timeliness. The tax audit process as well as the outcomes of tax audit do not create delay in financial reporting. This was shown by the absence of the relationship between the variable of tax audit and financial reporting lag. Hence, investigating the variable of tax audit using the proxy of tax audit results in the tax assessment letters, which include: (1) tax underpayment assessment letter (SKPKB), (2) additional tax underpayment assessment (SKPKBT), (3) tax overpayment assessment letter (SKPLB), and (4) nil tax assessment letter (SKPN), may contribute to the literature of financial reporting timeliness.

Furthermore, since Rahmawati (2013) recommended future research to use various industry sectors as the sample, this research provides academic contributions to the knowledge in measuring stock market reactions to financial reporting lag by employing the multiple business sectors using Scholes-Williams and Dimson's beta estimate methods. This study applied the two-stage least square, the OLS model, and the dynamic GMM model in measuring stock market reactions to financial reporting lag. Applying and comparing the data analyses results from the two-stage least square, the OLS model, and the dynamic GMM model could provide another academic contribution on the methodology in this area. Also, measuring the asymmetric stock market reactions between timely and late financial reporting lags using Wald-test contributes to this area's academic contribution on methodology. Finally, examining audit report lag is another academic contribution to the study on determinants of financial reporting lag.

7.4.2 Practical Contribution

The investors can obtain a practical contribution from this study, which finds that high level of loan on a capital structure is not associated with financial reporting lag. Hence, they may uncover when making investment decisions that a high level of the loan amount is not considered bad news by the investors. Pardede (2016, p. 205) argued that using debt to fund a company's business

operation is common, and the use of debt for a company as a financial instrument is suggested if the company has the capacity to utilise the debt appropriately. Debt is also required in some circumstances to handle a company's financial problems when conducting business. A company with a high level of debt on its capital structure, indicates that it can prepare reliable and relevant financial reports because the reliable financial reports and good business conditions are required to obtain the debt from a financial institution. Therefore, the Indonesian listed firms ignore their capital structures conditions when they publish annual financial reports.

In addition, the investors could also learn that tax audit results contained in the tax assessment letters do not influence financial reporting lag. The Indonesian listed firms do not consider the values of tax audit results in the tax assessment letters when they publish annual financial reporting. This indicates that the tax audit results disclosed in the tax-contingent liabilities could not be perceived as bad news. Furthermore, the investors may discover when making investment decisions that not all RPTs are considered bad news. Gordon and Henry (2005) argued that not all related party transactions are intended for the maximisation of profit. Instead, their existence is intended to give the economic demand to make the company's business operation effective by providing an alternative way of incentives or providing expertise and in-depth skills or knowledge. Related party transactions could also be purposed for enhancing the company's value and decreasing business costs (Chen, Wang & Li 2012).

In addition, the shareholders can determine the appropriate timeliness to divest their investments. Managers can learn the proper timelines to issue the yearly financial statements. Finally, compared to the annual reporting compliance in the study of Rahmawati (2013) presenting an average of 98 days, this study shows an average of 85 days of annual financial reporting compliance. The financial reporting compliance is much improved, providing around 90 percent of the reporting within the three months of financial reporting timeframe by regulation. However, the Financial Services Authority of Indonesia (Otoritas Jasa Keuangan/OJK) should still increase its supervision and impose severe sanctions on a non-compliant firm because some companies could still intentionally delay their financial reporting. Also, the OJK could shorten the financial reporting timeframe because the majority of the Indonesian listed firms have easily fulfilled the three-months financial reporting time as also proposed by Givoly and Palmon (1982) to the SEC for the NYSE firms.

7.5 The Limitations of Study

This study has several limitations, they are as follows:

1. Not all available variables for financial reporting timelines are included in the model, although they might have a significant relationship with the financial reporting lag. Gujarati and Porter (2010) argued that creating a good model does not include all

available variables because it can cause the model to be unwieldy and impractical (overfitting or over-specifying), but instead only to capture the salient features or the key relevant variables.

2. The focus of this study is mainly on the Indonesian context with the sample data from the IDX. Thus, the legal framework for disclosure and reporting of financial information and tax legislation in Indonesia may not be suitable for companies in other jurisdictions.
3. The analysis in this study does not categorise the firms according to the type of news (bad news, good news, and no news).
4. This study has not analysed the data sector by sector. Prior research in the financial reporting field, such as Hashim, Hashim and Jambari (2013), Owusu-Ansah (2000), and Sultana (2015), influenced the current study's stratified random sample. The stratified random sampling, according to Kitchenham and Pfleeger (2002), divides the population into sub-groups or strata. The current study used a sample taken from a number of industry sectors. Each sector is considered a sub-group or stratum, and samples were collected from each sub-group, stratum, or sector. Singh and Masuku (2014, p. 6) said that if the sample is diverse, the sample size for each stratum would vary. The overall population of listed firms on IDX is diverse. The stratified random sampling guarantees that all groups within the targeted population are represented (Acharya et al. 2013). As a result, the stratified random sampling approach was used in the current study to ensure that the samples represent the whole IDX population. Further, the current study derived the sample from all industrial sectors except banking and financial sectors due to their distinct financial structures. Haider (2015) stated that a considerable proportion of financial assets and liabilities on all banking and financial firms' capital structures is the reason why such companies are excluded from the data analysis.

   Furthermore, Hashim, Hashim and Jambari (2013), Owusu-Ansah (2000), and Sultana (2015) did not analyse their data per sector. Instead, they analysed their data together for the whole industrial sectors. This analysis has also been undertaken by a number of research in this field, including Owusu-Ansah and Leventis (2006), Pardede (2016), Rusmin and Evans (2017), and Al-Ghanem and Hegazy (2011). Due to the limited data for particular industries like agriculture, mining, property, real-estate, and the building and construction sector, the data could not be regressed for these industries in current study. The data were dominated by major industries like manufacturing and trading or investment sectors. Nonetheless, despite the limitation, the aggregate data analysis in this study provides reliable results as shown by prior studies in this area such as Owusu-Ansah and Leventis (2006), Pardede (2016), Rusmin and Evans (2017), and Al-Ghanem and Hegazy (2011), that analysed the aggregate data for all industries.

7.6 Recommendations for Future Research

Some recommendations for future research are as follows:

1. The proxy of abnormal related party values employed by Habib and Muhammadi (2018) is recommended to use in future studies to investigate the impact of the related party transactions on financial reporting lag.
2. The impact of other tax-related variables on financial reporting lag, including stock market reactions, are recommended to be investigated. The other tax-related variables, which are possibly examined into this topic, are deferred tax accounting (Ayers 1998), inter-period tax allocation (Beaver et al. 1972), inter-period tax allocation, and depreciation methods (Beaver et al. 1973), Last In First Out/LIFO adoption (Biddle & Lindahl 1982), and temporary and permanent book tax difference (Crabtree & Kubick 2014).
3. It is suggested that, in future research, firms be divided into firms with bad news and those with good news and no news while dividing timely financial reporting firms from the late financial reporting firms as conducted by (Kross 1982) and MacKinlay (1997).

7.7 Summary and Conclusion of Study

Financial reporting timeliness is essential for some stakeholders, including investors, to make an investment decision. Tax-related variables, which include related party transactions, leverage proxied by debt to equity ratio, and tax audit, are investigated in this study about their impact on financial reporting lag due to a lack of research examining tax-related variables in this area. The other predictors investigated on financial reporting lag are audit report lag, firm size, profitability, and qualified audit opinion because of their significant influence on financial reporting lag according to some prior studies. This research finds that the tax audit proxied by dummy variable and the value of tax audit results contained in the tax assessment letters and leverage proxied by debt to equity ratio and debt to asset ratio are not related to the financial reporting lag. Also, related party transactions are not associated with financial reporting lag.

Furthermore, audit report lag is found to have a significantly positive association with financial reporting lag, supporting the study of Owusu-Ansah (2000). In addition, there is evidence that presents the significant negative relationship between firm size and financial reporting lag, supporting the finding of Al-Ajmi (2008). Profitability and audit opinion are found to have no relationship with financial reporting lag. Furthermore, stock market reactions to financial reporting lag are found to have a significantly negative relationship using two-stage least squares, OLS model, and dynamic GMM model. However, the dynamic GMM model presents better results compared to the others. The results confirm to those in the study of Givoly and Palmon

(1982), Kross (1982), and Kross and Schroeder (1984), regarding the information content. Their negative relationship indicates that firms with short (long) financial reporting lag experience higher (lower) stock market reactions than those with long (short) financial reporting lag. In addition, the asymmetric stock market reactions between timely and late financial reporting firms are also revealed using Wald-test on least square model.

References

AASB 2015, *Related Party Disclosure*, Australian Accounting Standard Board, 16 September 2019, <https://www.aasb.gov.au/admin/file/content105/c9/AASB124_07-15.pdf>.

Abdelrazik, D 2017, *The determinants of audit fees and report lag : a comparative study of Egypt and the UK*, University of Plymouth, Electronic Thesis or Dissertation, <http://wallaby.vu.edu.au:2048/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=edsble&AN=edsble.720089&site=eds-live>.

Abernathy, JL, Barnes, M, Stefaniak, C & Weisbarth, A 2017, 'An international perspective on audit report lag: a synthesis of the literature and opportunities for future research', *International Journal of Auditing*, vol. 21, no. 1, pp. 100-27.

Abidin, S & Ahmad-Zaluki, NA 2012, 'Auditor industry specialism and reporting timeliness', *Procedia-Social and Behavioral Sciences*, vol. 65, pp. 873-8.

Acharya, AS, Prakash, A, Saxena, P & Nigam, A 2013, 'Sampling: why and how of it', *Indian Journal of Medical Specialties*, vol. 4, no. 2, pp. 330-3.

Afensimi, E 2015, 'Corporate attributes and audit delay in emerging markets: empirical evidence from Nigeria', *International Journal of Business and Social Research , Vol 5, Iss 3, Pp 01-10 (2015)*, no. 3, pp. 01-10.

Afify, H 2009, 'Determinants of audit report lag: does implementing corporate governance have any impact? Empirical evidence from Egypt', *Journal of Applied Accounting Research*, vol. 10, no. 1, pp. 56-86.

Agyei-Mensah, BK 2018, 'Impact of corporate governance attributes and financial reporting lag on corporate financial performance', *African Journal of Economic and Management Studies*, vol. 9, no. 3, pp. 349-66.

Ahmed Mohammed, I, Che-Ahmad, A & Malek, M 2018, 'Shareholder's involvement in the audit committee, audit quality and financial reporting lag in Nigeria', *Business and Economic Horizons*, vol. 14, no. 2, pp. 355-74.

Al-Ajmi, J 2008, 'Audit and reporting delays: evidence from an emerging market', *Advances in Accounting*, vol. 24, no. 2, pp. 217-26.

Al-Ghanem, W & Hegazy, M 2011, 'An empirical analysis of audit delays and timeliness of corporate financial reporting in Kuwait', *Eurasian Business Review*, vol. 1, no. 1, pp. 73-90.

Al-Harshani, MO 2008, 'The pricing of audit services: evidence from Kuwait', *Managerial Auditing Journal*, vol. 23, no. 7, pp. 685-96.

Al-Tahat, SSY 2015, 'Timeliness of audited financial reports of Jordanian listed companies', *International Journal of Management*, vol. 3, no. 2, pp. 39-47.

Ali, CB 2020, 'Agency theory and fraud', in *Corporate Fraud Exposed*, Emerald Publishing Limited.

Alkhatib, KM, Qais 2012, 'Audit reports timeliness: empirical evidence from Jordan', *Procedia-Social Behavioral Sciences*, vol. 62, pp. 1342-9.

Amegbeto, KN & Featherstone, AM 1992, 'Risk costs and the choice of market return index', *Journal of Agricultural Resource Economics*, pp. 80-7.

Anagnostidis, P, Varsakelis, C & Emmanouilides, C 2016, 'Has the 2008 financial crisis affected stock market efficiency? The case of Eurozone', *Physica A: Statistical Mechanics its Applications*, vol. 447, pp. 116-28.

Angrist, JD & Krueger, AB 2001, 'Instrumental variables and the search for identification: from supply and demand to natural experiments', *Journal of economic perspectives*, vol. 15, no. 4, pp. 69-85.

Anne-Mie, R, Tom Van, C & Sandra, V 2014, 'Financial reporting lags in the non-profit sector: an empirical analysis', *International Journal of Voluntary and Nonprofit Organizations*, vol. 25, no. 2, pp. 352-77.

Arnold, B & De Lange, P 2004, 'Enron: an examination of agency problems', *Critical Perspectives on Accounting*, vol. 15, no. 6-7, pp. 751-65.

Aryanti, F 2017, *Indonesia stock exchange prepares to suspend stocks of 70 listed companies delaying reporting timeliness (BEI siap bekukan saham 70 emiten yang telat beri laporan keuangan)*, Liputan6, 19 May 2019, <https://www.liputan6.com/bisnis/read/2956137/bei-siap-bekukan-saham-70-emiten-yang-telat-beri-laporan-keuangan>.

Ashbaugh, H & Warfield, TD 2003, 'Audits as a corporate governance mechanism: evidence from the German market', *Journal of International Accounting Research*, vol. 2, no. 1, pp. 1-21.

Ashton, RH, Graul, PR & Newton, JD 1989, 'Audit delay and the timeliness of corporate reporting', *Contemporary Accounting Research*, vol. 5, no. 2, pp. 657-73.

Ashton, RH, Willingham, John J. Elliott, Robert K. 1987, 'An empirical analysis of audit delay', *Journal of Accounting Research*, vol. 25, no. 2, pp. 275-92.

Atiase, RK, Bamber, LS & Tse, S 1989, 'Timeliness of financial reporting, the firm size effect, and stock price reactions to annual earnings announcements', *Contemporary Accounting Research*, vol. 5, no. 2, pp. 526-52.

ATO 2016, *Thin capitalisation*, by ATO, Australian Tax Office, viewed 12 March 2020, <https://www.ato.gov.au/Business/Thin-capitalisation/>.

ATO 2019a, *Base Erosion and Profit Shifting (BEPS)*, by ——, Australian Tax Office, viewed 12 March 2020, <https://www.ato.gov.au/business/international-tax-for-business/in-detail/base-erosion-and-profit-shifting/>.

—— 2019b, *Thin capitalisation: division 820 of the ITAA 1997*, Australian Taxation Office, Australia, <https://www.ato.gov.au/Forms/Company-tax-return-instructions-2018/?page=35>.

Ayers, BC 1998, 'Deferred tax accounting under SFAS No. 109: an empirical investigation of its incremental value-relevance relative to APB No. 11', *Accounting Review*, pp. 195-212.

Baldacchino Peter, J 2016, 'An analysis of audit report lags in Maltese Companies', in L Grech (ed.), *Contemporary issues in Finance: current challenges from across Europe*, Emerald Group Publishing Limited, vol. 98, pp. 161-82, viewed 2019/10/02, DOI 10.1108/S1569-375920160000098010, <https://doi.org/10.1108/S1569-375920160000098010>.

Ball, R & Brown, P 1968, 'An empirical evaluation of accounting income numbers', *Journal of Accounting Research*, pp. 159-78.

Bamber, EM, Bamber, LS & Schoderbek, MP 1993, 'Audit structure and other determinants of audit report lag: an empirical analysis', *Auditing*, vol. 12, no. 1, pp. 1-23.

Bapepam-LK 1995, *Undang undang nomor 8 tahun 1995 tentang pasar modal (Indonesia regulation for capital market)*, Otoritas Jasa Keuangan (OJK), Jakarta, <https://www.ojk.go.id/id/kanal/pasar-modal/regulasi/undang-undang/Documents/Pages/undang-undang-nomor-8-tahun-1995-tentang-pasar-modal/UU%20Nomor%208%20Tahun%201995%20(official).pdf>.

—— 1996, *Keputusan ketua Badan Pengawas Pasar Modal nomor KEP-38/PM/1996 tentang laporan tahunan*, Martinaberto, Jakarta, <http://www.martinaberto.co.id/download/Peraturan_Bapepam/VIII.G.2_Laporan_Tahunan.pdf>.

—— 2011, *Keputusan ketua Badan Pengawas Pasar Modal nomor KEP-346/BL/2011 tentang penyampaian laporan berkala emiten atau perusahaan publik*, Otoritas Jasa Keuangan (OJK), Jakarta, <https://www.ojk.go.id/Files/regulasi/pasar-modal/bapepam-pm/emiten-pp/pelaporan/X.K.2.pdf>.

Bartholdy, J & Riding, A 1994, 'Thin trading and the estimation of betas: the efficacy of alternative techniques', *Journal of Financial Research*, vol. 17, no. 2, pp. 241-54.

Basdas, U & Oran, A 2014, 'Event studies in Turkey', *Borsa Istanbul Review*, vol. 14, no. 3, pp. 167-88.

Beasley, MS, Carcello, JV & Hermanson, DR 2001, 'Top 10 audit deficiencies', *Journal of Accountancy*, vol. 19, no. 1, pp. 63-6.

Beaver, WH 1968, 'The information content of annual earnings announcements', *Journal of Accounting Research*, pp. 67-92.

Beaver, WH, Dukes, Roland E 1972, 'Interperiod tax allocation, earnings expectations, and the behavior of security prices', *The Accounting Review*, vol. 47, no. 2, pp. 320-32.

—— 1973, 'Interperiod tax allocation and δ-depreciation methods: some empirical results', *The Accounting Review*, vol. 48, no. 3, pp. 549-59.

Beest, Fv, Braam, G & Boelens, S 2009, 'Quality of financial reporting: measuring qualitative characteristics', pp. 1-21.

Begley, J & Fischer, PE 1998, 'Is there information in an earnings announcement delay?', *Review of Accounting Studies*, vol. 3, no. 4, pp. 347-63.

Benjelloun, H & Squalli, J 2008, 'Do general indexes mask sectoral efficiencies?', *International Journal of Managerial Finance*, pp. 136-51.

Bernerth, JB & Aguinis, H 2016, 'A critical review and best-practice recommendations for control variable usage', *Personnel Psychology*, vol. 69, no. 1, pp. 229-83.

Biddle, GC & Lindahl, FW 1982, 'Stock price reactions to LIFO adoptions: the association between excess returns and LIFO tax savings', *Journal of Accounting Research*, pp. 551-88.

Binder, J 1998, 'The event study methodology since 1969', *Review of quantitative Finance and Accounting*, vol. 11, no. 2, pp. 111-37.

Blankley, AI, Hurtt, DN & MacGregor, JE 2014, 'The relationship between audit report lags and future restatements', *Auditing: A Journal of Practice & Theory*, vol. 33, no. 2, pp. 27-57.

Bonsón-Ponte, E, Escobar-Rodríguez, T & Borrero-Domínguez 2008, 'Empirical analysis of delays in the signing of audit reports in Spain', *International Journal of Auditing*, vol. 12, no. 2, pp. 129-40.

Boshkoska, M 2015, 'The agency problem: measures for its overcoming', *International Journal of Business and Management*, vol. 10, no. 1, p. 204.

Bricket, R & Chandar, N 1998, 'On applying agency theory in historical accounting research', *Business Economic History*, pp. 486-99.

Brown, SJW, Jerold B 1985, 'Using daily stock returns: the case of event studies', *Journal of financial economics*, vol. 14, no. 1, pp. 3-31.

Buettner, T, Overesch, M, Schreiber, U & Wamser, G 2012, 'The impact of thin-capitalization rules on the capital structure of multinational firms', *Journal of Public Economics*, vol. 96, no. 11-12, pp. 930-8.

Buniamin, S 2010, 'The quantity and quality of environmental reporting in annual report of public listed companies in Malaysia', *Issues in Social and Environmental Accounting*, vol. 4, no. 2, pp. 115-35.

Butler, HN 1988, 'The contractual theory of the corporation', *Geo. Mason UL Rev.*, vol. 11, pp. 123-99.

Carslaw, CA & Kaplan, SE 1991, 'An examination of audit delay: further evidence from New Zealand', *Accounting and business research*, vol. 22, no. 85, pp. 21-32.

Chambers, AE & Penman, SH 1984, 'Timeliness of reporting and the stock price reaction to earnings announcements', *Journal of Accounting Research*, pp. 21-47.

Chan, KH, Luo, VW & Mo, PL 2016, 'Determinants and implications of long audit reporting lags: evidence from China', *Accounting and business research*, vol. 46, no. 2, pp. 145-66.

Che-Ahmad, A & Abidin, S 2008, 'Audit delay of listed companies: a case of Malaysia', *International business research*, vol. 1, no. 4, pp. 32-9.

Chen, S, Wang, K & Li, X 2012, 'Product market competition, ultimate controlling structure and related party transactions', *China Journal of Accounting Research*, vol. 5, no. 4, pp. 293-306.

Cheung, Y-L, Qi, Y, Rau, PR & Stouraitis, A 2009, 'Buy high, sell low: how listed firms price asset transfers in related party transactions', *Journal of Banking & Finance*, vol. 33, no. 5, pp. 914-24.

Chow, CW 1982, 'The demand for external auditing: size, debt and ownership influences', *Accounting Review*, pp. 272-91.

Clausing, KA 2003, 'Tax-motivated transfer pricing and US intrafirm trade prices', *Journal of Public Economics*, vol. 87, no. 9-10, pp. 2207-23.

Courtis, JK 1976, 'Relationships between timeliness in corporate reporting and corporate attributes', *Accounting and business research*, vol. 7, no. 25, pp. 45-56.

Crabtree, AD & Kubick, TR 2014, 'Corporate tax avoidance and the timeliness of annual earnings announcements', *Review of quantitative Finance Accounting*, vol. 42, no. 1, pp. 51-67.

Damodar, N 2004, *Basic econometrics*, The Mc-Graw Hill.

Daoud, KAA, Ismail, K, Izah, KN & Lode, NA 2014, 'The timeliness of financial reporting among Jordanian companies: do company and board characteristics, and audit opinion matter?', *Asian Social Science*, vol. 10, no. 13, pp. 191-201.

Dasilas, A & Leventis, S 2011, 'Stock market reaction to dividend announcements: evidence from the Greek stock market', *International Review of Economics Finance*, vol. 20, no. 2, pp. 302-11.

Davies, B & Whittred, GP 1980, 'The association between selected corporate: attributes and timeliness in corporate: reporting: further analysis', *Abacus*, vol. 16, no. 1, pp. 48-60.

Deloitte 2020a, *IAS 12: income taxes*, Deloitte, 16 June 2020, <https://www.iasplus.com/en/standards/ias/ias12>.

—— 2020b, *IAS 24 related party disclosures*, Deloitte, 16 June 2020, <https://www.iasplus.com/en/standards/ias/ias24>.

—— 2020c, *IAS 37: provisions, contingent liabilities and contingent assets*, Deloitte, 16 June 2020, <https://www.iasplus.com/en/standards/ias/ias37>.

—— 2020d, *IASB published revised conceptual framework*, Deloitte, 16 June 2020, <https://www.iasplus.com/en/news/2018/03/cf>.

DGT 2008, *Indonesia tax regulation number 36 - 2008 about income tax*, Jakarta, Indonesia.

—— 2011a, *Director General of Tax regulations: PER - 32/PJ/2011 about arm's length principles on related party transactions*, Observation & Research of Taxation (Ortax), Jakarta, Indonesia, <https://ortax.org/ortax/?mod=aturan&page=show&id=14855>.

—— 2011b, *Director General of Tax regulations: PER-32/PJ/2011 about the arm's length principles on related party transactions*.

—— 2013a, *Circulation letter of Director General of Tax, the Ministry of Finance of Republic of Indonesia,*
number: SE - 50/PJ/2013 about technical guidelines for tax audit on related party transactions, Jakarta, Indonesia.

—— 2013b, *Director General of Tax regulations: PER-22/PJ/2013 about tax audits on related party transactions*, Jakarta, Indonesia.

—— 2019, *Sistem perpajakan (tax system)*, Directorate General of Taxation, Jakarta, 26 September 2019, <https://www.pajak.go.id/id/sistem-perpajakan>.

Dimson, E 1979, 'Risk measurement when shares are subject to infrequent trading', *Journal of financial economics*, vol. 7, no. 2, pp. 197-226.

Durand, G 2019, 'The determinants of audit report lag: a meta-analysis', *Managerial Auditing Journal*, vol. 34, no. 1, pp. 44-75.

Durbin, J & Watson, GS 1971, 'Testing for serial correlation in least squares regression. III', *Biometrika*, vol. 58, no. 1, pp. 1-19.

Duvendack, M & Palmer-Jones, R 2014, 'Replication of quantitative work in development studies: experiences and suggestions', in *Methodological Challenges and New Approaches to Research in International Development*, Springer, pp. 238-60.

Dyer, JC & McHugh, AJ 1975, 'The timeliness of the Australian annual report', *Journal of Accounting Research*, pp. 204-19.

Eghlaiow, S, Wickremasinghe, G & Sofocleous, S 2012, 'A review of the empirical determinants of audit delay', *Corporate Ownership & Control*, vol. 9, no. 2, pp. 511-4.

Eghlaiow, S, Wickremasinghe, GB & Sofocleous, S 2012, 'A review of empirical determinants of audit delay', *Corporate ownership and Control*.

Engelen, P-J 2004, 'Criminal behavior: a real option approach with an application to restricting illegal insider trading', *European Journal of Law and Economics*, vol. 17, no. 3, pp. 329-52.

Erlien, M 2011, 'Earnings announcements and stock returns-a study of efficiency in the Norwegian capital market', University of Stavanger, Norway.

EViews 2020, 'EViews 12 Student Light Version'.

Fama, EF 1965, 'The behavior of stock-market prices', *The Journal of Business*, vol. 38, pp. 34-105.

—— 1980, 'Agency problems and the theory of the firm', *Journal of political economy*, vol. 88, no. 2, pp. 288-307.

Fama, EF, Fisher, L, Jensen, MC & Roll, R 1969, 'The adjustment of stock prices to new information', *International economic review*, vol. 10, no. 1, pp. 1-21.

Feinschreiber, R 2004, *Transfer pricing methods: an applications guide*, John Wiley & Sons.

Freddy Karyadi, NCS 2017, *Indonesia: Update on Tax Audit Regulation*, International Tax Review, Jakarta, 26 September 2019, <https://www.internationaltaxreview.com/article/b1f7n80qtzd3jh/indonesia-update-on-tax-audit-regulations>.

Friedman, M 1953, *The methodology of positive economics. Essays in positive economics: the methodology of economics and other essays*, University of Chicago Press, Chicago.

Frijns, B, Gilbert, A & Tourani-Rad, A 2013, 'Do criminal sanctions deter insider trading?', *Financial Review*, vol. 48, no. 2, pp. 205-32.

Fujianti, L 2016, 'Analysis market reaction on timeliness reporting: study on Indonesia stock exchange', *International Journal of Business Management Invention*, vol. 5, no. 3, pp. 1-10.

Gaffikin, MJR 2008, *Accounting theory: research, regulation and accounting practice*, Frenchs Forest, NSW: Pearson Education, 2008.

Gamayuni, RR 2009, 'Perkembangan standar akuntansi keuangan Indonesia menuju international financial reporting standards', *Jurnal Akuntansi dan keuangan*, vol. 14, no. 2, pp. 153-66.

Ghio, A & Verona, R 2015, 'Accounting harmonization in the BRIC countries: A common path?', in *Accounting Forum*, vol. 39, pp. 121-39.

Gilling, DM 1977, 'Timeliness in corporate reporting: some further comment', *Accounting and business research*, vol. 8, no. 29, pp. 34-6.

Gippel, J, Smith, T & Zhu, Y 2015, 'Endogeneity in accounting and finance research: natural experiments as a state-of-the-art solution', *Abacus*, vol. 51, no. 2, pp. 143-68.

Givoly, D & Palmon, D 1982, 'Timeliness of annual earnings announcements: some empirical evidence', *Accounting Review*, pp. 486-508.

Gleason, CA & Mills, LF 2002, 'Materiality and contingent tax liability reporting', *The Accounting Review*, vol. 77, no. 2, pp. 317-42.

Gontara, H & Khlif, H 2021, 'Tax avoidance and audit report lag in South Africa: the moderating effect of auditor type', *Journal of Financial Crime*, vol. 28, no. 3, pp. 732-40.

Gordon, EA & Henry, E 2005, 'Related party transactions and earnings management', *SSRN 612234 Electronic Journal*, pp. 1-37.

Graham, JR 2000, 'How big are the tax benefits of debt?', *The Journal of Finance*, vol. 55, no. 5, pp. 1901-41.

Gujarati, DN & Porter, DC 2010, *Essentials of Econometrics*, Fourth edn, McGraw-Hill/Irwin, Boston.

Habib, A & Bhuiyan, MBU 2011, 'Audit firm industry specialization and the audit report lag', *Journal of international accounting, auditing and taxation*, vol. 20, no. 1, pp. 32-44.

Habib, A, Bhuiyan, MBU, Huang, HJ & Miah, MS 2019, 'Determinants of audit report lag: a meta-analysis', *International Journal of Auditing*, vol. 23, no. 1, pp. 20-44.

Habib, A & Muhammadi, AH 2018, 'Political connections and audit report lag: Indonesian evidence', *International Journal of Accounting & Information Management*, vol. 26, no. 1, pp. 59-80.

Haider, S 2015, 'Exploring the relationship between changes in accounting policies and valuation of Australian banking firms', Victoria University.

Haleblian, J, Devers, CE, McNamara, G, Carpenter, MA & Davison, RB 2009, 'Taking stock of what we know about mergers and acquisitions: a review and research agenda', *Journal of management*, vol. 35, no. 3, pp. 469-502.

Hanlon, M & Heitzman, S 2010, 'A review of tax research', *Journal of accounting and economics*, vol. 50, no. 2-3, pp. 127-78.

Hanlon, M, Hoopes, JL & Shroff, N 2014, 'The effect of tax authority monitoring and enforcement on financial reporting quality', *The Journal of the American Taxation Association*, vol. 36, no. 2, pp. 137-70.

Hanlon, M & Slemrod, J 2009, 'What does tax aggressiveness signal? Evidence from stock price reactions to news about tax shelter involvement', *Journal of Public Economics*, vol. 93, no. 1-2, pp. 126-41.

Hasan, M, Abdullah, SN & Hossain, SZH 2014, 'Qualitative characteristics of financial reporting', *The Pakistan Accountant*, vol. 50, no. 1, pp. 23-31.

Hashim, F, Hashim, F & Jambari, AR 2013, 'Relationship between corporate attributes and timeliness in corporate reporting: Malaysian evidence', *Sains Humanika*, vol. 64, no. 2, pp. 115-9.

Hausman, JA 1978, 'Specification tests in econometrics', *Econometrica: Journal of the econometric society*, pp. 1251-71.

Haw, I-MG, Park, K, Qi, D & Wu, W 2003, 'Audit qualification and timing of earnings announcements: evidence from China', *Auditing: A Journal of Practice & Theory*, vol. 22, no. 2, pp. 121-46.

Henry, E, Gordon, EA, Reed, B & Louwers, T 2007, 'The role of related party transactions in fraudulent financial reporting', *Journal of Forensic and Investigative Accounting*, pp. 186-213.

Hermansyah, A 2018, *Government targets 16.6% tax revenue growth in 2019*, The Jakarta Post, Jakarta, 26 September 2019, <https://www.thejakartapost.com/news/2018/10/23/government-targets-19-58-tax-revenue-growth-in-2019.html>.

Hitz, J-M, Löw, P & Solka, M 2013, 'Determinants of audit delay in a mandatory IFRS setting', *Bestimmungsfaktoren der Prüfungsdauer von verpflichtend aufzustellenden IFRS-Abschlüssen.*, vol. 73, no. 4, pp. 293-306.

Hult, GTM, Hair Jr, JF, Proksch, D, Sarstedt, M, Pinkwart, A & Ringle, CM 2018, 'Addressing endogeneity in international marketing applications of partial least squares structural equation modeling', *Journal of International Marketing*, vol. 26, no. 3, pp. 1-21.

IAI 2020a, *Pengertian standard akuntansi keuangan (SAK)*, Ikatan Akuntan Indonesia, Jakarta, 16 June 2020, <http://iaiglobal.or.id/v03/standar-akuntansi-keuangan/sak>.

—— 2020b, *PSAK 7 pengungkapan pihak - pihak berelasi*, Ikatan Akuntan Indonesia, Jakarta, <http://iaiglobal.or.id/v03/standar-akuntansi-keuangan/pernyataan-sak-12-psak-7-pengungkapan-pihakpihak-berelasi>.

—— 2020c, *PSAK 46 pajak penghasilan (PSAK 46 income taxes)*, IAI, 15 September 2019, <http://iaiglobal.or.id/v03/standar-akuntansi-keuangan/pernyataan-sak-33-psak-46-pajak-penghasilan>.

—— 2020d, *PSAK 57 provisi, liabilitas kontinjensi, dan aset kontinjensi*, Ikatan Akuntan Indonesia, Jakarta, 27 September 2019, <http://iaiglobal.or.id/v03/standar-akuntansi-keuangan/pernyataan-sak-39-psak-57-provisi-liabilitas-kontinjensi-dan-aset-kontinjensi>.

IFRS 2017, *IAS 24 related party disclosure*, IFRS Foundation 2017, <https://www.ifrs.org/issued-standards/list-of-standards/ias-24-related-party-disclosures/>.

In-Mu Haw, DQ, Woody Wu 2000, 'Timeliness of annual report releases and market reaction to earnings announcements in an emerging capital market: the case of China', *Journal of International Financial Management & Accounting*, vol. 11, no. 2, pp. 108-31.

In'airat, MHS 2018, 'The effect of internal and external factors on stock market prices-evidence from Saudi Arabia', *The Business & Management Review*, vol. 9, no. 3, pp. 413-23.

Intan, K 2021, *Tenang, klasifikasi indeks bursa yang baru, justru mempermudah pelaku pasar*, Kontan.co.id, Jakarta, 14 May 2022, News, <https://investasi.kontan.co.id/news/tenang-klasifikasi-indeks-bursa-yang-baru-justru-mempermudah-pelaku-pasar?page=all>.

Ishaq Ahmed, M, Ayoib, C-A & Mazrah, M 2018, 'Shareholder's involvement in the audit committee, audit quality and financial reporting lag in Nigeria', *Business & Economic Horizons*, vol. 14, no. 2, pp. 355-74.

Ismail, H, Mustapha, M & Cho, OM 2012, 'Timeliness of audited financial reports of Malaysian listed companies', *International journal of Business Social science computer review*, vol. 3, no. 22, pp. 242-7.

Ismail, S, Nijam, H & Musthafa, A 2015, 'The impact of macro-economic variables on stock market performance; evidence from Sri Lanka', *Journal of Emerging Trends in Economics and Management Sciences*, vol. 6, no. 2, pp. 151-7.

Jaggi, B & Tsui, J 1999, 'Determinants of audit report lag: further evidence from Hong Kong', *Accounting & Business Research (Wolters Kluwer UK)*, vol. 30, no. 1, pp. 17-28.

Jang, DH & Anderson-Cook, CM 2017, 'Influence plots for LASSO', *Quality and Reliability Engineering International*, vol. 33, no. 7, pp. 1317-26.

Jensen, MC & Meckling, WH 1976, 'Theory of the firm: managerial behavior, agency costs and ownership structure', *Journal of financial economics*, vol. 3, no. 4, pp. 305-60.

Johnson, S, La Porta, R, Lopez-de-Silanes, F & Shleifer, A 2000, 'Tunneling', *American economic review*, vol. 90, no. 2, pp. 22-7.

Joshi, M, Yapa, PWS & Kraal, D 2016, 'IFRS adoption in ASEAN countries: Perceptions of professional accountants from Singapore, Malaysia and Indonesia', *International Journal of Managerial Finance*.

Kayo, ES 2020, *Daftar emiten saham di BEI tahun 2014, 2015, 2016*, Saham ok, Jakarta, 22 May 2022, <https://www.sahamok.net/emiten/>.

Khositkulporn, P 2013, 'The factors affecting stock market volatility and contagion: Thailand and South-East Asia evidence', Victoria University.

Khoufi, N & Khoufi, W 2018, 'An empirical examination of the determinants of audit report delay in France', *Managerial Auditing Journal*, vol. 33, no. 8-9, pp. 700-14.

Kitchenham, B & Pfleeger, SL 2002, 'Principles of survey research: part 5: populations and samples', *ACM SIGSOFT Software Engineering Notes*, vol. 27, no. 5, pp. 17-20.

Kogilavani, A 2012, 'Determinants of audit report lag and corporate governance in Malaysia', Universiti Utara Malaysia.

Koh, J & Venkatraman, N 1991, 'Joint venture formations and stock market reactions: An assessment in the information technology sector', *Academy of Management Journal*, vol. 34, no. 4, pp. 869-92.

Kohlbeck, MJ & Mayhew, BW 2004, 'Agency costs, contracting, and related party transactions', *University of Wisconsin*, pp. 1-25.

Kothari, S 2001, 'Capital markets research in accounting', *Journal of accounting Economics Letters*, vol. 31, no. 1-3, pp. 105-231.

Krishnan, J & Yang, JS 2009, 'Recent trends in audit report and earnings announcement lags', *Accounting Horizons*, vol. 23, no. 3, pp. 265-88.

Kross, W 1982, 'Profitability, earnings announcement time lags, and stock prices', *Journal of Business Finance & Accounting*, vol. 9, no. 3, pp. 313-28.

Kross, W & Schroeder, DA 1984, 'An empirical investigation of the effect of quarterly earnings announcement timing on stock returns', *Journal of Accounting Research*, pp. 153-76.

Krueger, AB 1999, 'Experimental estimates of education production functions', *The Quarterly journal of economics*, vol. 114, no. 2, pp. 497-532.

Kulzick, RS 2004, 'Sarbanes-Oxley: effects on financial transparency', *SAM Advanced Management Journal*, vol. 69, no. 1, pp. 43-9.

La Porta, R, Lopez de Silanes, F, Djankov, S & Shleifer, A 2005, 'The law and economics of self-dealing', *NBER Working Paper*, no. w11883, pp. 1-67.

Leone, AJ, Wu, JS & Zimmerman, JL 2006, 'Asymmetric sensitivity of CEO cash compensation to stock returns', *Journal of Accounting*
Economics Letters, vol. 42, no. 1-2, pp. 167-92.

Leventis, S, Weetman, P & Caramanis, C 2005, 'Determinants of audit report lag: some evidence from the Athens stock exchange', *International Journal of Auditing*, vol. 9, no. 1, pp. 45-58.

Li, J, Ding, H, Hu, Y & Wan, G 2021, *Dealing with dynamic endogeneity in international business research*, 3, Springer, 1478-6990.

Lobo, BJ 2000, 'Asymmetric effects of interest rate changes on stock prices', *Financial Review*, vol. 35, no. 3, pp. 125-44.

Luypaert, M, Van Caneghem, T & Van Uytbergen, S 2016, 'Financial statement filing lags: an empirical analysis among small firms', *International Small Business Journal*, vol. 34, no. 4, pp. 506-31.

MacKinlay, AC 1997, 'Event studies in economics and finance', *Journal of economic literature*, vol. 35, no. 1, pp. 13-39.

Malkiel, BG 2003, 'The efficient market hypothesis and its critics', *Journal of economic perspectives*, vol. 17, no. 1, pp. 59-82.

—— 2005, 'Reflections on the efficient market hypothesis: 30 years later', *Financial Review*, vol. 40, no. 1, pp. 1-9.

Malkiel, BG & Fama, EF 1970, 'Efficient capital markets: a review of theory and empirical work', *The Journal of Finance*, vol. 25, no. 2, pp. 383-417.

McManus, J, Floyd, D, Abd Majid, MS & Kassim, SH 2009, 'Impact of the 2007 US financial crisis on the emerging equity markets', *International Journal of Emerging markets*, pp. 341-57.

McMillan, J 2018, 'Tax audits in Indonesia–growing the tax base', *Paper prepared for PhD Presentations, Australasian Tax Teachers Association Conference, Monash University, 17th-19th January 2018*, pp. 1-12.

Md. Borhan Uddin, B & Mabel, DC 2020, 'Audit committee ownership and audit report lag: evidence from Australia', *International Journal of Accounting & Information Management*, vol. 28, no. 1, pp. 96-125.

Menike, M, Man, W, Street, SD, Dalian, P & District, S 2013, 'Stock market reactions to the release of annual financial statements case of the banking industry in Sri Lanka', *European Journal of Business and Management*, vol. 5, no. 31, pp. 75-86.

Modigliani, F & Miller, MH 1958, 'The cost of capital, corporation finance and the theory of investment', *The American*, vol. 1, pp. 261-97.

—— 1963, 'Corporate income taxes and the cost of capital: a correction', *The American Economic Review*, vol. 53, no. 3, pp. 433-43.

Modugu, PK, Eragbhe, E & Ikhatua, OJ 2012, 'Determinants of audit delay in Nigerian companies: empirical evidence', *Research Journal of Finance and Accounting*, vol. 3, no. 6, pp. 46-55.

MOF 2015, *Ministry of Finance of Republic of Indonesia regulation: 169/PMK. 010/2015 about debt to equity ratio*, The Ministry of Finance of Republic of Indonesia, Jakarta, <https://jdih.kemenkeu.go.id/fullText/2015/169~PMK.010~2015Per.pdf>.

Nasip, I & Sudarmaji, E 2018, 'Managing tax dispute due to IFRS-16 on the retrofits implementation in Indonesia', *International Journal of Engineering and Technology (UAE)*, vol. 7, no. 3, pp. 200-8.

Nekhili, M & Cherif, M 2011, 'Related parties transactions and firm's market value: the French case', *Review of Accounting and Finance*, vol. 10, no. 3, pp. 291-315.

Ng, PP & Tai, BY 1994, 'An empirical examination of the determinants of audit delay in Hong Kong', *The British Accounting Review*, vol. 26, no. 1, pp. 43-59.

Nor Izah Ku Ismail, K & Chandler, R 2004, 'The timeliness of quarterly financial reports of companies in Malaysia', *Asian Review of Accounting*, vol. 12, no. 1, pp. 1-18.

OECD 2010, *OECD transfer pricing guidelines for multinational enterprises and tax administrations 2010*, OECD.

—— 2016, *2016 OECD economic survey of Indonesia*, OECD, Economics Department, Jakarta, viewed 16 June 2020, <https://www.slideshare.net/oecdeconomy/indonesia-2016-oecd-economic-survey-jakarta-24-october-67453724>.

—— 2017, *OECD transfer pricing guidelines for multinational enterprises and tax administrations 2017*, Paris : Organisation for Economic Cooperation & Development July 2017 Lanham : Rowman & Littlefield Publishers, Incorporated [Distributor], Paris.

—— 2020, *Details of tax revenue - Indonesia*, OECD, 16 June 2020, <https://stats.oecd.org/Index.aspx?DataSetCode=REVIDN>.

Oradi, J 2021, 'CEO succession origin, audit report lag, and audit fees: evidence from Iran', *Journal of international accounting, auditing and taxation*, pp. 1-16.

Orbis 2019, *Listed and unlisted companies database*, Bureau Van Dijk, <https://orbis-bvdinfo-com.ap1.proxy.openathens.net/version-202036/orbis/1/Companies/Search>.

Owusu-Ansah, S 2000, 'Timeliness of corporate financial reporting in emerging capital markets: empirical evidence from the Zimbabwe stock exchange', *Accounting and business research*, vol. 30, no. 3, pp. 241-54.

Owusu-Ansah, S & Leventis, S 2006, 'Timeliness of corporate annual financial reporting in Greece', *European Accounting Review*, vol. 15, no. 2, pp. 273-87.

Panda, B & Leepsa, N 2017, 'Agency theory: review of theory and evidence on problems and perspectives', *Indian Journal of Corporate Governance*, vol. 10, no. 1, pp. 74-95.

Pardede, SMD 2016, *Financial policies and timeliness of financial reporting by Indonesian listed firms*, Deakin University.

Pevzner, M, Xie, F & Xin, X 2015, 'When firms talk, do investors listen? The role of trust in stock market reactions to corporate earnings announcements', *Journal of financial economics*, vol. 117, no. 1, pp. 190-223.

Puat Nelson, S & Norwahida Shukeri, S 2011, 'Corporate governance and audit report timeliness: evidence from Malaysia', in *Accounting in Asia*, Emerald Group Publishing Limited, pp. 109-27.

PWC 2017, *The long view: how will the global economic order change by 2050?*

Rahmawati, E 2013, 'Information content and determinants of timeliness of financial reporting of manufacturing firms in Indonesia', Victoria University.

—— 2018, 'Information content and determinants of timeliness financial reporting: evidence from an emerging market', *Academy of Accounting and Financial Studies Journal*, vol. 22, no. 4, pp. 1-15.

Reed, WR & Ye, H 2011, 'Which panel data estimator should I use?', *Applied Economics*, vol. 43, no. 8, pp. 985-1000.

Rees, LL 1995, 'The information contained in reconciliations to earnings based on US accounting principles by non-US companies', *Accounting Business research methods: a managerial approach*, vol. 25, no. 100, pp. 301-10.

Reid, S, Tibshirani, R & Friedman, J 2016, 'A study of error variance estimation in lasso regression', *Statistica Sinica*, pp. 35-67.

RI 2009, *Undang undang Republik Indonesia nomor 6 tahun 1983 tentang ketentuan umum dan tata cara perpajakan sebagaimana telah beberapa kali diubah terakhir dengan undang undang Republik Indonesia nomor 16 tahun 2009*, <https://www.kemenkeu.go.id/sites/default/files/uu-kup%20mobile.pdf>.

Roodman, D 2009, 'How to do xtabond2: an introduction to difference and system GMM in Stata', *The stata journal*, vol. 9, no. 1, pp. 86-136.

Ross, SA 1973, 'The economic theory of agency: the principal's problem', *The American Economic Review*, vol. 63, no. 2, pp. 134-9.

Rusmin, R & Evans, J 2017, 'Audit quality and audit report lag: case of Indonesian listed companies', *Asian Review of Accounting*, vol. 25, no. 2, pp. 191-210.

Santikajaya, A 2016, 'Walking the middle path: the characteristics of Indonesia's rise', *International Journal*, vol. 71, no. 4, pp. 563-86.

Saptono, PB & Khozen, I 2021, 'Income tax and VAT issues concerning lease after IFRS 16 convergence in Indonesia', *The Indonesian Journal of Accounting Research*, vol. 24, no. 2, pp. 259-88.

Saputra, F & Ali, H 2021, 'The Impact of Indonesia's economic and political policy regarding participation in various international forums: G20 forum (literature review of financial management)', *Journal of Accounting and Finance Management*, vol. 2, no. 1, pp. 40-51.

Scholes, M & Williams, J 1977, 'Estimating betas from nonsynchronous data', *Journal of financial economics*, vol. 5, no. 3, pp. 309-27.

Seetaram, N & Petit, S 2012, 'Panel data analysis', in *Handbook of research methods in tourism*, Edward Elgar Publishing.

Sewell, M 2011, 'History of the efficient market hypothesis', *UCL Department of Computer Science*, vol. 11, no. 04, pp. 1-14.

Shackelford, DA & Shevlin, T 2001, 'Empirical tax research in accounting', *Journal of accounting economics*, vol. 31, no. 1-3, pp. 321-87.

Shapiro, SP 1987, *Wayward Capitalists: Targets of the Securities and Exchange Commission*, Yale University Press.

Sharpe, WF 1964, 'Capital asset prices: a theory of market equilibrium under conditions of risk', *The Journal of Finance*, vol. 19, no. 3, pp. 425-42.

Shleifer, A & Vishny, RW 1997, 'A survey of corporate governance', *The Journal of Finance*, vol. 52, no. 2, pp. 737-83.

Singh, AS & Masuku, MB 2014, 'Sampling techniques & determination of sample size in applied statistics research: an overview', *International Journal of Economics, Commerce and Management*, vol. 2, no. 11, pp. 1-22.

Sitthipongpanich, T 2011, 'Understanding the event study', *Journal of Business Administration*, vol. 34, no. 130, pp. 59-68.

Slemrod, J 2004, 'The economics of corporate tax selfishness', *National tax journal*, vol. 57, no. 4, pp. 877-99.

Small, K, Ionici, O & Zhu, H 2007, 'Size does matter: an examination of the economic impact of Sarbanes-Oxley', *Review of Business*, vol. 27, no. 3, pp. 47-55.

Smith, RP & Fuertes, A-M 2010, 'Panel time series', *V cemmap: London*.

Soltani, B 2002, 'Timeliness of corporate and audit reports: some empirical evidence in the French context', *The International Journal of Accounting*, vol. 37, no. 2, pp. 215-46.

Stewart, EG & Cairney, TD 2019, 'Audit report lag and client industry homogeneity', *Managerial Auditing Journal*, vol. 34, no. 8, pp. 1008-28.

Strong, N 1992, 'Modelling abnormal returns: a review article', *Journal of Business Finance & Accounting*, vol. 19, no. 4, pp. 533-53.

Sultana, NS, Harjinder Van der Zahn, J-LW Mitchell 2015, 'Audit committee characteristics and audit report lag', *International Journal of Auditing*, vol. 19, no. 2, pp. 72-87.

Tabachnick, BG, Fidell, LS & Ullman, JB 2007, *Using multivariate statistics*, vol. 5, Pearson Boston, MA.

Taylor, G & Richardson, G 2012, 'International corporate tax avoidance practices: evidence from Australian firms', *The International Journal of Accounting*, vol. 47, no. 4, pp. 469-96.

TICMI 2018, *Profil perusahaan (company profile)*, The Indonesian Capital Market Institute, Jakarta, 13 March 2020, <https://ticmi.co.id/profil-perusahaan>.

Tina, V & Marko, Č 2014, 'Finding determinants of audit delay by pooled OLS regression analysis', *Croatian Operational Research Review, Vol 5, Iss 1, Pp 81-91 (2014)*, no. 1, pp. 81-91.

Titman, S, Keown, AJ & Martin, JD 2018, *Financial management : principles and applications*, The Pearson Series in Finance, Harlow, United Kingdom : Pearson Education Limited, [2018] Thirteenth edition.

Torres-Reyna, O 2007, 'Panel data analysis fixed and random effects using Stata (v. 4.2)', *Data & Statistical Services, Priceton University*, vol. 112, p. 49.

Türel, AG 2010, 'Timeliness of financial reporting in emerging capital markets: evidence from Turkey', *European Financial Accounting Journal*, vol. 5, no. 3-4, pp. 113-33.

Ullah, S, Akhtar, P & Zaefarian, G 2018, 'Dealing with endogeneity bias: the generalized method of moments (GMM) for panel data', *Industrial Marketing Management*, vol. 71, pp. 69-78.

Uly, YA 2017, *BEI: 37 emiten catatkan saham di 2017, total nilainya Rp.9,4 triliun (IDX: 37 new companies recorded in 2017, presenting the value of IPO around IDR 9.4 trilions)*, Okezone, Jakarta, 27 June 2020, <https://economy.okezone.com/read/2017/12/22/278/1834468/bei-37-emiten-catatkan-saham-di-2017-total-nilainya-rp9-4-triliun>.

Valenta, E 2018, 'Measuring risks on China's belt and road initiative for Indonesia', *The Insider Stories*, 12 April 2018, <https://theinsiderstories.com/measuring-risks-on-chinas-belt-and-road-initiative-for-indonesia/>.

Veal, AJ 2005, *Business research methods: a managerial approach*, Pearson Education Australia/Addison Wesley.

Warner, JB 1977, 'Bankruptcy costs: some evidence', *The Journal of Finance*, vol. 32, no. 2, pp. 337-47.

Watts, RL & Zimmerman, JL 1983, 'Agency problems, auditing, and the theory of the firm: some evidence', *The journal of law and Economics*, vol. 26, no. 3, pp. 613-33.

Weygandt, JJ, Kimmel, PD & Kieso, DE 2009, *Managerial accounting: tools for business decision making*, John Wiley & Sons.

Whittred, GPJAR 1980, 'Audit qualification and the timeliness of corporate annual reports', pp. 563-77.

Whitworth, JD & Lambert, TA 2014, 'Office-level characteristics of the Big 4 and audit report timeliness', *Auditing: A Journal of Practice & Theory*, vol. 33, no. 3, pp. 129-52.

Wickremasinghe, GB 2004, 'The Sri Lankan Rupee and purchasing power parity during the current floating period', *International Trade*, vol. 406005, pp. 1-26.

Wintoki, MB, Linck, JS & Netter, JM 2012, 'Endogeneity and the dynamics of internal corporate governance', *Journal of financial economics*, vol. 105, no. 3, pp. 581-606.

Wooldridge, JM 2010, *Econometric analysis of cross section and panel data*, MIT press.

—— 2015, *Introductory econometrics: A modern approach*, Cengage learning.

Woon, WS 2004, 'Introduction to the event study methodology', *Academia, Singapore Management University*, vol. 4, no. 7, pp. 1-13.

Yahoo 2020, *Historical data*, Verizon Media, 12 January 2020, <https://finance.yahoo.com/>.

Zeghal, D 1984, 'Timeliness of accounting reports and their informational content on the capital market', *Journal of Business Finance Accounting*, vol. 11, no. 3, pp. 367-80.

Appendix A

List of Companies

Lists of companies included as the sample by sectors:

1. Agriculture

No	CODE	COMPANY NAME
1	AALI	Astra Agro Lestari Tbk
2	GOLL	PT Golden Plantation Tbk
3	SIMP	PT Salim Ivomas Pratama Tbk
4	GZCO	PT Gozco Plantations Tbk
5	SGRO	PT Sampoerna Agro Tbk
7	SSMS	PT Sawit Sumber Mas Sarana Tbk
8	TBLA	PT Tunas Baru Lampung Tbk

2. Basic Industry and Chemicals

No	CODE	COMPANY NAME
1	ADMG	PT Polychem Indonesia Tbk
2	AGII	PT Aneka Gas Industri Tbk
3	ALKA	Alakasa Industrindo Tbk
4	ALMI	Alumindo Light Metal Industry Tbk
5	APLI	Asiaplast Industries Tbk
7	ARNA	Arwana Citramulia Tbk
8	BAJA	Sarana Central Bajatama Tbk
9	BRNA	Berlina Tbk
10	BTON	Betonjaya Manunggal Tbk
11	KIAS	Keramika Indonesia Assosiasi Tbk
12	KRAS	Krakatau Steel (Persero) Tbk
13	MAIN	Malindo Feedmill Tbk
14	MLIA	Mulia Industrindo Tbk
15	NIKL	Pelat Timah Nusantara Tbk
16	SMGR	Semen Indonesia (Persero) Tbk
17	SRSN	Indo Acidatama Tbk
18	SULI	PT SLJ Global Tbk
19	TKIM	Pabrik Kertas Tjiwi Kimia Tbk
20	TOTO	Surya Toto Indonesia Tbk
21	TPIA	PT Chandra Asri Petrochemical Tbk
22	WSBP	PT Waskita Beton Precast Tbk

23	FPNI	PT Lotte Chemical Titan Tbk
24	CTBN	Citra Tubindo Tbk
25	INCF	PT Indo Komoditi Korpora Tbk

3. Consumer Goods Industry

No	CODE	COMPANY NAME
1	ALTO	Tri Banyan Tirta Tbk
2	BTEK	Bumi Teknokultura Unggul Tbk
3	CINT	PT Chitose International Tbk
4	GGRM	Gudang Garam Tbk
5	ICBP	Indofood CBP Sukses Makmur Tbk
6	INAF	Indofarma (Persero) Tbk
7	KLBF	Kalbe Farma Tbk
8	MYOR	Mayora Indah Tbk
9	RMBA	Bentoel International Investama Tbk
10	SIDO	PT Industri Jamu Dan Farmasi Sidomuncul
11	TSPC	Tempo Scan Pacific
12	UNVR	Unilever Indonesia Tbk
13	WIIM	Wismilak Inti Makmur Tbk
14	LMPI	Langgeng Makmur Industry Tbk
15	MLBI	Multi Bintang Indonesia Tbk
16	MBTO	Martina Berto Tbk

4. Infrastructure, Utilities and Transportation

No	CODE	COMPANY NAME
1	APOL	Arpeni Pratama Ocean Line Tbk
2	ASSA	Adi Sarana Armada Tbk
3	BIRD	PT Blue Bird Tbk
4	BLTA	Berlian Laju Tanker Tbk
5	BUKK	Bukaka Teknik Utama Tbk
6	CASS	Cardig Aero Services Tbk
7	CMNP	Citra Marga Nusaphala Persada Tbk
8	EXCL	PT XL Axiata Tbk
9	FREN	Smartfren Telecom Tbk
10	GDYR	Goodyear Indonesia Tbk
11	GIAA	Garuda Indonesia (Persero) Tbk
12	GOLD	PT Visi Telekomunikasi Infrastruktur Tbk
13	IBST	Inti Bangun Sejahtera Tbk

14	ISAT	PT Indosat Tbk
15	MBSS	Mitrabahtera Segara Sejati Tbk
16	META	Nusantara Infrastructure Tbk
17	MIRA	Mitra International Resources Tbk
18	NELY	Pelayaran Nelly Dwi Putri Tbk
19	LRNA	PT Eka Sari Lorena Transport Tbk
20	PTIS	Indo Straits Tbk
21	SDMU	Sidomulyo Selaras Tbk

5. Mining

No	CODE	COMPANY NAME
1	BORN	Borneo Lumbung Energi & Metal Tbk
2	BYAN	Bayan Resources Tbk
3	CITA	Cita Mineral Investindo Tbk
4	CKRA	Cakra Mineral Tbk
5	DEWA	Darma Henwa Tbk
6	DOID	Delta Dunia Makmur Tbk
7	ELSA	Elnusa Tbk
8	ESSA	Surya Esa Perkasa Tbk
9	HRUM	Harum Energy Tbk
10	INDY	Indika Energy Tbk
11	MDKA	PT Merdeka Copper Gold Tbk
12	MEDC	PT Medco Energi International Tbk
13	SMMT	Golden Eagle Energy Tbk
14	SMRU	SMR Utama Tbk
15	TRAM	Trada Alam Mineral Tbk
16	DSSA	Dian Swastatika Sentosa Tbk

6. Miscellaneous Industry

No	CODE	COMPANY NAME
1	ARGO	Argo Pantes Tbk
2	ASII	Astra International Tbk
3	AUTO	Astra Otoparts Tbk
4	BATA	Sepatu Bata Tbk
5	ESTI	Ever Shine Textile Industry Tbk
6	IMAS	Indomobil Sukses International Tbk
11	INDR	Indorama Synthetics Tbk
12	KBLI	KMI Wire and Cable Tbk

13	KBLM	Kabelindo Murni Tbk
14	MASA	Multistrada Arah Sarana Tbk
15	PBRX	Pan Brothers Tbk
16	SMSM	Selamat Sempurna Tbk
17	SRIL	PT Sri Rejeki Isman Tbk
18	VOKS	Voksel Electric Tbk

7. Property, Real Estate and Building Construction

No	CODE	COMPANY NAME
1	ADHI	PT Adhi Karya (Persero) Tbk
2	APLN	PT Agung Podomoro Land Tbk
3	BKDP	Bukit Darmo Property Tbk
4	BKSL	Sentul City Tbk
5	CTRA	Ciputra Development Tbk
6	JKON	Jaya Konstruksi Manggala Pratama Tbk
7	JRPT	Jaya Real Property Tbk
8	LPKR	Lippo Karawaci Tbk
9	MABA	PT Marga Abhinaya Abadi Tbk
10	MDLN	Modern Land Reality Ltd Tbk
11	MMLP	PT Mega Manunggal Property Tbk
12	MTLA	Metropolitan Land Tbk
13	NRCA	PT Nusa Raya Cipta Tbk
14	PLIN	Plaza Indonesia Reality Tbk
15	SCBD	PT Danayasa Arthatama Tbk
16	SMDM	Suryamas Dutamakmur Tbk
17	SMRA	PT Summarecon Agung Tbk
18	SSIA	PT Surya Semesta Internusa Tbk
19	TOTL	Total Bangun Persada Tbk
20	WSKT	PT Waskita Karya (Persero) Tbk
21	GWSA	PT Greenwood Sejahtera Tbk
22	DART	Duta Anggada Reality Tbk
23	DUTI	Duta Pertiwi Tbk

8. Trade, Service, and Investment

No	CODE	COMPANY NAME
1	ABBA	Mahaka Media Tbk
2	ABMM	ABM Investama Tbk

3	ACES	Ace Hardware Indonesia Tbk
4	AKKU	PT Anugerah Kagum Karya Utama Tbk
5	AKRA	PT AKR Corporindo Tbk
6	AMRT	PT Sumber Alfaria Trijaya Tbk
7	ASGR	Astra Graphia Tbk
8	ATIC	PT Anabatic Technologies Tbk
9	BHIT	PT MNC Investama Tbk
10	BMTR	PT Global Mediacom Tbk
11	BNBR	Bakrie and Brothers Tbk
12	BUVA	PT Bukit Uluwatu Villa Tbk
13	CARS	PT Industri dan Perdagangan Bintraco Dharma Tbk
14	CSAP	Catur Sentosa Adiprana Tbk
15	DAYA	PT Duta Intidaya Tbk
16	DNET	PT Indoritel Makmur International Tbk
17	DYAN	PT Dyandra Media International Tbk
18	EMTK	Elang Mahkota Teknologi Tbk
19	FAST	PT Fast Food Indonesia Tbk
20	FISH	FKS Multi Agro Tbk
21	HERO	Hero Supermarket Tbk
22	INPP	Indonesian Paradise Property Tbk
23	JGLE	Graha Andrasentra Propertindo Tbk
24	KPIG	MNC Land Tbk
25	LPPF	Matahari Department Store Tbk
26	LTLS	PT Lautan Luas Tbk
27	MAPI	Mitra Adiperkasa Tbk
28	MARI	PT Mahaka Radio Integra Tbk
29	MLPL	Multipolar Tbk
30	MTDL	Metrodata Electronics Tbk
31	PJAA	Pembangunan Jaya Ancol Tbk
32	RALS	Ramayana Lestari Sentosa Tbk
33	RANC	Supra Boga Lestari Tbk
34	SHID	Hotel Sahid Jaya Tbk
35	SILO	PT Siloam International Hospital Tbk
36	SRAJ	Sejahteraraya Anugrahjaya Tbk
37	SRTG	PT Saratoga Investama Sedaya Tbk
38	SUGI	Sugih Energy Tbk
39	TELE	PT Tiphone Mobile Indonesia Tbk
40	TGKA	Tigaraksa Satria Tbk

41	TIRA	Tira Austenite Tbk
42	UNTR	United Tractors Tbk
43	WICO	Wicaksana Overseas International Tbk
44	CLPI	Colorpak Indonesia Tbk
45	HOTL	Saraswati Griya Lestari Tbk
46	SONA	Sona Topas Tourism Industry Tbk
47	VIVA	PT Visi Media Asia Tbk
48	GEMA	Gema Grahasarana Tbk
49	FORU	Fortune Indonesia Tbk
50	ICON	Island Concepts Indonesia Tbk

Appendix B

The comparison of tax benefits for a company when paying interest to a lender and when paying dividend to a shareholder on the same amount (suppose AUS $10).

Accounts	Interest Payment (AUS $) Scheme (A)	Dividend Payment (AUS $) Scheme (B)	A-B
Sales	100	100	0
Cost of Good Sold	(60)	(60)	0
Gross Profit	40	40	0
Administrative expenses	(10)	(10)	0
Earnings before interest and taxes	30	30	0
Interest expenses *)	(10)	(0)	10
Net income before taxes	20	30	-10
Taxes (25%) **)	(5)	(7.5)	2.5
Net income after taxes	15	22.5	-7.5
Dividend Payment *)	(0)	(10)	10
Retained Earnings **)	15	12.5	2.5

*) Supposed a company applies two mechanisms of capital structures. Scheme A utilizes debt to finance its business, which should pay interest to a lender for AUS $10. Meanwhile, in scheme B, the company uses common shares (equity) to fund its business, which should pay dividend to the share holders or owners' equity of AUS $10 (the same amount of interest paid to a lender). The final retained earnings in the income statement for the scheme A will be higher than those in the scheme B due to the tax benefits (AUS $2.5) obtained by scheme A. This condition occurs because the interest is deductible in the financial statement when calculating the corporate income taxes, meanwhile, dividend is not deductible.

**) Tax benefits are AUS $2.5. Scheme A will pay less taxes of AUS $2.5 than Scheme B, and the tax benefits will finally be in retained earnings by scheme A for AUS $2.5.