



The Relationship Between the Quality of Sustainability Reporting and Corporate Financial Performance: A Cross-Sectional and Longitudinal Study

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Abstract

Purpose- The purpose of this paper is to examine the relationship between the quality of sustainability reports (QSR) and corporate financial performance (CFP). Since the global reporting initiative (GRI) reporting guideline is widely adopted by organizations over the world, the reporting organizations that report their corporate social responsibility (CSR) information under GRI reporting guidelines.

Design/methodology/approach- In this study total of 6,519 samples are obtained from the GRI report list in the reporting period from the year 2009 to 2013 for analysis.

Findings- The results demonstrate higher QSR results in better profitability and CFP but QSR exceeding a certain level in return increase the utilization of the firm's resources and this leads to a decrease in overall profitability. Besides, the study proved that continuing investment in sustainability reporting and the decrease in a firm's profitability affect the overall profitability – Returns on asset (ROA) and Returns on sales (ROS) of the organization.

Originality/value- Provides the empirical study on the relationship between QSR and CFP based on the GRI report list in the reporting period from 2009 to 2013.

JEL: M41, Q01, Q56

Keywords: Quality Sustainability Reporting, Corporate Financial Performance, Global Reporting Initiative, profitability, GRI reporting guidelines

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INTRODUCTION

Sustainability reporting is a valued tool of communication that assists managers by providing a signal of trustworthiness and information about sustainable development to stakeholders of the firms (Romero, Ruiz, & Fernandez-Feijoo, 2019). The disclosure of sustainability information delivers valuable financial and non-financial information to different stakeholders that help in mitigating decision-making opportunism and immoral manipulation of earnings (Rezaee & Tuo, 2019). The sustainable report is measured with the use of three disclosure indicators that are environmental disclosure, corporate social disclosure, and corporate governance disclosure (De Villiers & Van Staden, 2006). There is an increasing trend for firms to have sustainability reporting. Corporate social responsibility (CSR) is an endeavor to cope with the alertness of sustainability in the business era (Cui, Jo, & Na, 2018). Voluntary sustainability disclosure may be the strategic tool to manage the engagement of stakeholders rather than a communication instrument among these parties and the company (Charan & Murty, 2018). Sustainability reports can also help management teams and other stakeholders to assess the sustainable cost and value of the organizations, and understand the sustainability gap of current and expected sustainability activities⁶ (Ekins, Simon, Deutsch, Folke, & De Groot, 2003). Thus, the trend of sustainability reporting has expanded throughout the world. Recently, there has been the development of integrated reporting that combines the reporting of financial and non-financial performance. For this study, both stand-alone and integrated sustainability reports adopt Global Reporting Initiative (GRI) reporting guidelines regardless of the selection of sizes and locations. GRI provides a framework of principles, guidance, disclosures, and key performance indicators for organizations to report their sustainability performance voluntarily, which is a multi-stakeholder initiative (Perego & Kolk, 2012). The reliability of the information on corporate sustainability plays a very crucial role for different stakeholders in financial markets (Boiral, 2013). The extent of the sustainability report mainly focuses on completeness, external assurance, creditability, and transparency while compliance of the reporting standards can be used to assess these. Quality of sustainability report (QSR) is an important factor that influences corporate financial performance (CFP), and hence it is essential to understand the relationship between QSR and CFP. Although the QSR-CFP relationship has been examined in prior studies, results are still inconclusive.

Some scholars suggest a positive QSR-CFP relationship (see i.e., Anderson & Frankle, 1980; Bachoo, Tan, & Wilson, 2013; Jones, Frost, Loftus, & van der Laan, 2007; Reddy & Gordon, 2010; Ullmann, 1985) while some scholars suggest a negative or insignificant QSR-CFP relationship (see i.e., Cormier & Magnan, 2007; Najah & Jarboui, 2013; Richardson & Welker, 2001; Wagenhofer, 1990). An inverted U-shaped relationship between social disclosure and CFP is also suggested by Bowman and Haire (1975). However, only one industry is examined in this study, and the volume of the sustainability report is the only measurement method for CSR disclosure which is insufficient. Even though QSR provides business advantages to organizations, an increase in QSR raises the costs for collecting, compiling, and disseminating CSR information. Hence, CFP should increase when QSR rises, and CFP should drop when the costs of producing a high-quality sustainability report exceed its benefits. In this study, an inverted U-shaped relationship between QSR and CFP is proposed. Unlike prior studies that focus on a limited number of industries, reporting organizations from 38 industries in 92

⁶According to Gray (2010) sustainable cost is the amount that companies spent to maintain firm's sustainability while sustainable value is the relative performance on selected sustainability criteria. The understanding of sustainable cost and value provides comparative data within industries to estimate the resources that can be used for other profitable investment. Sustainability value can also be added to the organization when the information on eco- and social efficiency is better than the current benchmark standards (Figge & Hahn, 2004).

countries throughout the world are selected as the samples in this paper. This provides a more representative and comprehensive information base to understand the effect of sustainability reporting and to draw a conclusion that applies to different industries and countries. Besides, both cross-sectional and longitudinal studies are adopted in this research to investigate the relationship at a point in time and the changes over the years. As the answer to how QSR affects CFP is still uncertain, and this relationship is essential for management and stakeholders in their decision-making, it is essential to understand the QSR-CFP relationship. Thus, what is the relationship between QSR and CFP in the same reporting year and over time?

LITERATURE REVIEW

Concepts and definitions of corporate sustainability reporting, CSR, and financial performance are explained in prior studies, but there is no consensus (Hussain, Rigoni, & Orij, 2018). In scholarly literature, this type of longitudinal study has been adopted (Borgstedt, Nienaber, Liesenkötter, & Schewe, 2019). Due to the experience of globalization, climate change, increasing environmental pollution, and the scarcity of resources, companies have been pressurized to disclose information not only on financial performance but also on ecological and social aspects within the last decades (Boiral, Heras-Saizarbitoria, & Brotherton, 2019; Sartori, Witjes, & Campos, 2017). In the critical literature, the less balanced and material information, managerial detention of the reporting process, less stakeholder involvement, and the marketing objectives of the reports were discussed (Boiral & Henri, 2017; Cho, Laine, Roberts, & Rodrigue, 2018). Managers believe that sustainability reporting brings business advantages in different ways. First, sustainability reporting can help to reduce the firm's costs. Credible disclosures help to confine managerial incentives to operate incomes and gain the confidence of shareholders and stakeholders (Katmon & Al Farooque, 2017).

Second, a sustainability report helps to maintain a good relationship with stakeholders and conform to stakeholder norms on operations (Branco & Rodrigues, 2008). Third, sustainability reporting demonstrates organizations' accountability to society and increases their reputation (Kolk, 2010). The positive corporate image resulting from CSR disclosure consequently contributes to the creation of competitive advantages for the organization (Hooghiemstra, 2000). In this case, it is disputed about the sustainability report whether it is more than just an artificial conformism (Shabana, Buchholtz, & Carroll, 2017). Sustainability reporting is criticized as enhancing the reputation of the company in the disguise of impression management and marketing (Talbot & Boiral, 2018). Lastly, non-financial information is important to attract investment funds (Ortas, Moneva, & Alvarez, 2014). Besides, non-financial information reduces information asymmetry between companies and the public, which provides them with informational value (Ullmann, 1985). The quality of non-financial reporting focuses on external factors and stakeholder expectations that are mostly disconnected in the research (Diouf & Boiral, 2017). Besides, Dhaliwal, Radhakrishnan, Tsang, and Yang (2012) found that CSR disclosure is positively associated with the accurate estimation of companies' earnings as its CSR disclosure provides incrementally useful information to investors. The relationship between environmental, social, and governance (ESG) performance and performance were investigated in many pieces of literature. Hence, the results were unclear, partly due to data constraints and measurement (Li, Gong, Zhang, & Koh, 2018).

To measure the effectiveness of sustainability reports on CFP, QSR is an influential factor. Three criteria such as credibility, completeness, and transparency, are often used for evaluating QSR. As the volume of sustainability can only measure the completeness of the

report but not transparency and credibility, it is insufficient to measure QSR and is not adopted in this study. Another criterion is credibility. Credibility consists of various elements, but in terms of this paper, trustworthiness and expertise are important (Dando & Swift, 2003; Hovland & Weiss, 1951; Ohanian, 1990). Stakeholders not only demand the accuracy of the reported information, but they also ask for information that is true and fair. Assurance of sustainability reports is served as a sign of accountability as it improves the credibility of the report and demonstrates the willingness of the organization to enhance QSR (Perego & Kolk, 2012). The assurance process reflected the ideal of transparency in sustainability reporting by assuring a hard verification process from the most perspectives. The information disclosed by organizations is believed to be reliable, material, and consistent with the realities of their sustainability performance (see e.g., Boiral & Henri, 2017; Martínez-Ferrero & García-Sánchez, 2017). Du, Bhattacharya, and Sen (2010) find that there is a trade-off between the controllability and credibility of CSR communication, and it is unlikely to expect high QSR if it is dominated by the company. It should be considered in QSR measurement. The last criterion is transparency. Transparency is defined as the availability of firm-specific information to the parties outside of the organization (Bushman, Piotroski, & Smith, 2004), and it consists of three key elements, including relevance, timeliness, and reliability (Williams, 2005). It is also found that transparency of CSR reports enhances the relationship between the investors and the organization (Fernandez-Feijoo, Romero, & Ruiz, 2014). The reporting standards help to guide organizations to account for and report their sustainability activities and performance. It also provides fundamental concepts for the assurance providers in auditing sustainability reports (O'Dwyer, Owen, & Unerman, 2011). As people have different legislative and societal concerns in their states, they have different expectations of corporate accountability that lead to substantial differences in length, approach, scope, and depth of accountability, and thus there are a wide variety of sustainability reports concerning its content and quality (Adams, Hill, & Roberts, 1998; Fortanier, Kolk, & Pinkse, 2011).

Some scholars doubt the effectiveness of assurance of sustainability reports and compliance with the reporting standards in enhancing the report quality. The impact of integrated reporting on the integration of sustainability matters and the associated performance changes was studied where there is no benefit from switching from sustainability reporting to integrated reporting (Maniora, 2017). Numerous prior studies argue that GRI sustainability reporting guidelines are not detailed and lack quantifiable measures to satisfy the informational needs of some stakeholders (Levy, Szejnwald Brown, & De Jong, 2010). How sustainability disclosures assist the investors in measuring ESG performance are analyzed that are connected to the issuance of integrated reporting (Mervelskemper & Streit, 2017). However, the information provided by the companies is very difficult for most stakeholders to measure themselves, considering the multiplicity and difficulty of matters covered in sustainability reports (Boiral & Henri, 2017).

Despite these arguments, global sustainability reporting standards and guidelines and assurance of the sustainability report are still regarded as important drivers in improving QSR in prior studies (Perego & Kolk, 2012). They are selected to measure QSR in this paper. Nevertheless, integrated reporting primarily releases information about corporate sustainability impact to financial stakeholders who have an interest in a corporation's sustainability dependencies (Humphrey, O'Dwyer, & Unerman, 2017).

HYPOTHESES DEVELOPMENT

The development of integrated reporting and present guidelines for future research was examined and a conceptual model of influences around integrated reporting was proposed where the model detects the determinants of integrated reporting, and probable results arise

from it (De Villiers & Van Staden, 2006). Numerous prior studies have found a positive relationship between social reporting and CFP. The absence of accountability and transparency might affect the firm's image and social legitimacy which might worsen CFP (Cho & Patten, 2007; Duchon & Drake, 2009; Laufer, 2003). Apart from that, QSR is a good indicator to reveal the response of the organization to their CSR, and this enhances the reputation of the organization and creates market value (Guidry & Patten, 2010). Therefore, QSR is expected to have a positive effect on CFP in terms of both accounting and market returns. The positive relationship can be explained by stakeholder and legitimacy theory. Stakeholder theory is concerned with the supposition that values are certainly an explicit part of doing business and discard the separation hypothesis (Freeman, 1994). Legitimacy theory is a theory that has a close relationship with stakeholder theory to the extent that certain aspects of these two theories are seen as overlapping (Gray, Kouhy, & Lavers, 1995). It is, therefore, a contention that organizations should have a social license to operate. Legitimacy theory shows that there is a social bond between a company and the society in which it operates (Deegan, 2002; Patten, 1991, 1992). Prior studies also found a negative or insignificant relationship between QSR and CFP, where high returns could attract competitors to enter the market and increase proprietary and competitive costs (Wagenhofer, 1990). Excessive sustainability reporting and simulacra might bring negative impacts on CFP. Simulacra on sustainability report refer to artificial representations and inflation of corporate commitment in the sustainability report, which are distorted or disconnected from reality (Boiral, 2013). This might affect QSR and the firm's image. Thus, CFP would be affected if QSR disconnects from the actual CSR performance or achievement. The negative relationship can be explained by Signalling Theory. Under signaling theory, managers with good news tend to have more intentions to disclose this information to the market as these can provide a signal of good performance, and the signaller may sometimes provide false signals to the market if the organization would like to obtain the benefits from the signal even though their underlying quality does not connect with the signal they sent (Connelly, Certo, Ireland, & Reutzel, 2011). However, signaling might also bring negative effects on society. A prior study even suggests an inverted U-shaped relationship between social disclosure and CFP (see i.e., Bowman & Haire, 1975) for which organizations have high profitability when they have a medium CSR disclosure and low profitability when they have a low or excessive CSR disclosure.

In this paper, we hypothesize an inverted U-shaped relationship between QSR and CFP in H1 which is consistent with Bowman and Haire's (1975) study. The relationship between QSR and CFP is expected to be positive at the beginning due to the increase in stakeholder relationships and legitimacy. The relationship becomes negative when it is excessive, as the signals from the CSR report might be disconnected from reality. Besides, QSR improves CFP and brings long term value to the organization. The relationship over periods should be investigated. Therefore, the hypothesis that there is an improvement in QSR over periods for better CFP is proposed in H2. Besides, significant costs for sustainability reporting, like costs for preparation and external assurance, are involved even though organizations maintain a constant QSR over periods. The hypothesis that sustainability reports with the same quality over the years will lower CFP is suggested in H3.

H1: *QSR has an inverted U-shaped relationship with CFP in terms of:*

a: Accounting-based measures- returns on assets (ROA) and return on sales (ROS)

b: Market-based measures- Basic earnings per share (BEPS) and stock returns (SR);

Besides, QSR improves CFP and brings long term value to the organization. The relationship over periods should be investigated. Therefore, the hypothesis that there is an improvement in QSR over periods for better CFP is proposed in H2.

H2: *Improvement in QSR will lead to better CFP in terms of:*

a: Accounting-based measures- returns on assets (ROA) and return on sales (ROS)

b: Market-based measures- Basic earnings per share (BEPS) and stock returns (SR);

Also, significant costs for sustainability reporting, like costs for preparation and external assurance, are involved even though organizations maintain a constant QSR over periods. The hypothesis that sustainability reports with the same quality over the years will lower CFP is suggested in H3.

H3: *Maintain sustainability reports at a constant level will lower CFP over years in terms of:*

a: Accounting-based measures- returns on assets (ROA) and return on sales (ROS)

b: Market-based measures- Basic earnings per share (BEPS) and stock returns (SR);

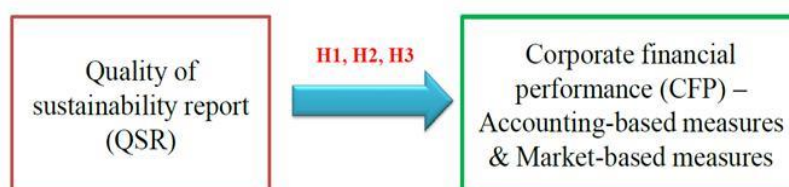


Figure 1: Proposed research model: Relationship between QSR and CFP (H1, H2, H3)

RESEARCH METHODOLOGY

To find out the differences and make comparisons at the same period and to examine the developments or changes of the same subjects over time, both cross-sectional and longitudinal studies are adopted in this research study. A cross-sectional study is conducted to test the relationship between QSR and CFP in each reporting period from 2009 to 2013, while a longitudinal approach is conducted to investigate the changes of QSR on CFP over the reporting period of 2009 to 2013.

Sample frame and data collection method

All sustainability reports that adopted GRI guidelines and are present in the GRI report lists are selected for this study. To increase generalizability, the entire population from the GRI report list, regardless of their size, country, or sector is selected. The GRI database is free to access via the GRI website, and data are updated twice per month by GRI (GRI 2015). The GRI report list provides useful information such as an overview of the reporting organizations, sector, organization size, country, report type, publication year, report title, whether it is an integrated report, whether external assurance is provided, whether references are made to standards from other independent standards organizations, adherence level, the status of declaration and application level. Data are collected from the reporting period from 2009 to 2013. This period is selected as 2009 is the year when G3, the third generation of GRI reporting guidelines, was launched, and GRI application levels were declared by the reporting organizations to indicate the report quality. CFP in the next reporting period is used to assess the impact of QSR of the reporting period. Since the most updated information available in the COMPUSTAT database is the financial data of the year 2014, thus samples can only be selected

from the reporting period one year before the CFP information is available (i.e. the year 2013). Therefore, the latest five reporting years from 2009 to 2013 are chosen as the samples.

Measurement of variables

Independent variable-Quality of a sustainability report (QSR)

To measure QSR, different measurement methods such as content analysis, GRI application level, and certifications from different organizations and associations can be identified in the prior studies. GRI reporting guidelines, their core indicators, and application levels are frequently used to determine the transparency and QSR, as the GRI reporting guideline is considered to be the main framework for sustainability reporting (Fernandez-Feijoo et al., 2014; Manetti & Becatti, 2009). GRI reporting guidelines and application levels are developed by experienced committee members, and it is used by more than half of the reporting firms in preparing their sustainability reports across the world. The GRI application level is perceived by stakeholders as an indicator of completeness, relevance, and transparency of sustainability reports (Dublink, Graafland, & Van Liedekerke, 2008). Thus, the GRI application level is chosen as the measurement tool for QSR. The application-level system in G3 has been revised, and a new rating system is launched in the latest generation of GRI reporting guidelines, G4, in May 2013 (GRI 2015). Under the new rating system, two options, a core option and a comprehensive option, are implemented to replace the application levels in G3⁷. Since less than two percent of the reporting organizations in 2013 have applied the new rating system based on the reporting list provided by GRI that the new rating criteria are different from the application level system used in G3, reporting organizations that adopt the new rating system are excluded from this study.

Dependent variable - corporate financial performance (CFP)

To measure CFP, both accounting-based measures and market-based measures are used. Accounting-based measures are regarded as a direct measurement of CFP to reflect the internal efficiency and profitability of the organization (Van Beurden & Gössling, 2008). McGuire, Sundgren, and Schneeweis (1988) indicate that accounting-based measures capture the historical performances of the organization and can better assess CSR performance as CSR is usually regarded as unsystematic. According to López, Garcia, and Rodriguez (2007), sustainability policies of the organization influence management practices and have impacts on the income statement. The implementation of sustainability practices would also help firms to enhance the development of new products and technology to strengthen their inimitable competitive advantages. This would increase sales force effectiveness and so increase profitability and cash flow (Ameer & Othman, 2012; Epstein & Roy, 2001). Return on sales (ROS) and return on assets (ROA) are commonly used to measure a firm's performance as shown in prior studies (see i.e., Van der Laan, Van Ees, & Van Witteloostuijn, 2008; Waddock & Graves, 1997; Wagner, 2005). As assets, sales, and profits of the organization are strongly influenced by CSR and CSR reporting, ROS and ROA are selected as the accounting-based measures for CFP in this study. ROS is calculated using operating income divided by net sales of the company (Stice & Stice, 2012). ROA is calculated using net income divided by average total assets (Wild & Shaw, 2021).

On the other hand, market-based measures are derived from the firm's information and trading environment. It reflects how investors value the performance of the organization (McGuire et al., 1988). It is suggested that CSR disclosure generates informational value to the market, so

⁷ For both core and comprehensive options, related material aspects are included. For a comprehensive option, specific standard disclosures should be disclosed for all cases (GRI 2015).

this impacts stock price under the efficient market hypothesis (Ullmann, 1985). It is also found that financing activities on the capital market have a positive effect on the extent or quality of environmental reporting (Clarkson, Li, Richardson, & Vasvari, 2008). Some scholars argue that higher systematic risk arises from an unstable economic performance which might reduce the organization's ability to bear the costs of reporting and bring negative effect on the level of social disclosure (Cormier, Gordon, & Magnan, 2004), sustainability reporting has an influence or is influenced by market and financing activities (Moore, 2001; Van der Laan et al., 2008). For this research, basic earnings per share (BEPS) and stock returns (SR), the two frequently used market-based measures, are used to measure CFP in this study.

Control variables

To examine the relationship in this paper, firm size, industry, firm risk, country, country status, and year are taken into account as the control variables. Firm size is suggested to have an impact on CSR, sustainability reporting, and CFP, and prior studies found that firm size has a positive effect on the volume of non-financial information voluntarily disclosed (see e.g., Adams et al., 1998; Branco & Rodrigues, 2008; Cohen, Holder-Webb, Nath, & Wood, 2012; Deegan & Gordon, 1996; Hackston & Milne, 1996; Reverte, 2009). The positive relationship can be explained by several reasons. The first reason is the cost of producing the report. It is found that larger firms are expected to have a lower marginal cost in producing sustainability reports owing to economies of scale (Lang & Lundholm, 1993). The other reason is firm resources. (Ullmann, 1985) suggests that large firms tend to have more slack resources that can be used for CSR and social reporting, and thus good CFP brings a positive impact on social reporting. Firm size has been used as the control variable in numerous previous research studies (see e.g., Barnea & Rubin, 2010; Fortanier et al., 2011; Surroca, Tribó, & Waddock, 2010; Waddock & Graves, 1997).

Furthermore, the factor that is frequently used as the control variable in the examination of the relationship between CSR, CFP and social reporting is the industry of reporting firms (Fernandez-Feijoo et al., 2014; Fortanier et al., 2011; Surroca et al., 2010; Ullmann, 1985). It is found that industry sectors have a significant association with the amount of voluntary information disclosed (Hackston & Milne, 1996). Some scholars also found a relationship between industries and the pressure of specific stakeholders (Adams et al., 1998; Hackston & Milne, 1996). Firm risk is adopted as a control variable in previous research, and the degree of leverage of the firm is commonly used to measure firm risk (Husted & Allen, 2007; Waddock & Graves, 1997).

Country of origin is suggested to have an influence on QSR in the recent kinds of literature (Chapple & Moon, 2005; Hackston & Milne, 1996; Wanderley, Lucian, Farache, & de Sousa Filho, 2008), and it can be classified into two business cultures; stakeholder and shareholder culture. Stakeholder culture considers the legitimate interest of a variety of stakeholder groups over the activities of the organization, while shareholder culture considers an organization as a tool to maximize shareholder's profit (Simnett, Vanstraelen, & Chua, 2009). Organizations located in common law countries are more sensitive to protecting shareholders and have a higher incentive to disclose their financial information rather than non-financial information like information on sustainability (Reinhardt, Stavins, & Vietor, 2008). They are more likely to have a shareholder's business culture (Ball, Owen, & Gray, 2000; Simnett et al., 2009). Organizations located in civil law countries tend to secure the interests of stakeholders and respect the opinions and decisions of different stakeholder groups (Ball et al., 2000; Simnett et al., 2009).

In this study, panel data are used for the analysis. Since observations have been collected for the period from 2009 to 2013, the aggregated effect of the unobserved factors might affect the production of the sustainability reports equally in a particular year. It is also expected that organizations have a higher incentive to disclose CSR information to meet stakeholder's demands as time goes by, year effects should be considered. A year dummy is adopted as the control variable in many earlier studies (Dhaliwal et al., 2012; Surroca et al., 2010) and thus, it is added to the analysis as the control variable in this study.

DATA ANALYSIS AND RESULTS

Descriptive Statistics

After screenings, our final sample contains 664, 864, 1,346, 1,574, and 2,071 reporting organizations in the reporting period of 2009, 2010, 2011, 2012, and 2013 respectively⁸. Among these 6,519 samples in the five reporting periods from 2009 to 2013, 1,124 organizations (17.2%) declared GRI application level A+, 326 organizations (5.0%) declared GRI application level A, 648 organizations (9.9%) declared GRI application level B+, 888 organizations (13.6%) declared GRI application level B, 140 organizations (2.1%) declared GRI application level C+, 666 organizations (10.2%) declared GRI application level C, 1,231 organizations (25.5%) with 'undeclared' or 'GRI referenced' and 442 organizations (16.3%) with 'Non-GRI'. The organizations included in the samples are located in 92 different countries (refer to Appendix A) and engaged in 38 different industries (refer to Appendix B).

Descriptive Statics and Correlation analysis is conducted to examine the relationships between variables and to test the reliability of data.

Table 1: Descriptive Statistics and Correlation matrix of examined variables

	1	2	3	4	5	6	7	8	9	10	11	12
ROA	1.000	0.088**	0.026*	0.011	-0.006	0.007	0.044**	-0.00**	-0.041**	-0.051**	-0.07**	-0.026*
ROS	0.396**	1.000	0.002	0.002	0.025*	-0.010	0.064**	0.013	-0.026*	0.022	.024*	-0.013
BEPS	0.494**	0.232**	1.000	-0.008	0.025*	0.039**	0.212**	-0.020	0.006	-0.057**	0.065**	-0.037**
SR	0.180**	0.245**	0.151**	1.000	-0.017	0.016	0.085**	0.008	-0.048**	0.010	-0.069**	-0.009
QSR	-0.031*	0.079**	-0.025*	0.053**	1.000	0.424**	0.096**	0.022	0.139**	0.085**	0.032**	-0.081**
QSR2	-0.031*	0.000	0.028*	0.047**	0.070**	1.000	0.111**	-0.017	0.100**	-0.013	-0.036**	0.033**
Size	-0.142**	0.119**	0.465**	0.298**	0.099**	0.133**	1.000	0.000	-0.018	0.137**	0.068**	-0.051**
Risk	-0.416**	0.018	-0.070**	0.047**	0.050**	0.017	0.272**	1.000	-0.044**	0.002	0.053**	-0.023
Industry	-0.059**	-0.178**	-0.078**	-0.038**	0.137**	0.083**	-0.018	-0.092**	1.000	0.009	-0.049**	-0.032**
Country	-0.174**	-0.143**	0.019	-0.077**	0.102**	-0.020	0.154**	0.092**	0.009	1.000	0.064**	-0.032*
Cstatus	-0.105**	-0.085**	0.110**	0.152**	0.041**	-0.043**	0.057**	0.138**	-0.049**	0.064**	1.000	-0.087**
Year	-0.049**	-0.047**	-0.043**	-0.064**	-0.096**	0.049**	-	-0.024	-0.032**	-0.028*	-0.081**	1.000

⁸ The original sample is drawn from GRI report list from the reporting period from 2009 to 2013. According to GRI report list, 1,583, 2,089, 3,166, 3,723 and 3,593 reporting organizations are obtained from the reporting period of 2009, 2010, 2011, 2012 and 2013 respectively. Since GRI application levels are used to measure QSR, the samples without declaration of GRI application level in GRI report list are excluded from the samples. Samples are then matched with CFP data in the COMPUSTAT database. During the matching, several precautionary measures are used to ensure the authenticity of the matching process. In the small number of cases, the name of the organizations in GRI report list matched exactly with the data in the COMPUSTAT. In most cases, however, similar but non-identical names in both GRI report list and the COMPUSTAT are found. In such cases, manual procedures are used for matching. The names of the organizations are manually verified with the use of online sources such as internet search engines and companies' websites as an additional step. In other cases, procedures are taken to verify whether the organizations belong to a subsidiary of another company listed in the COMPUSTAT. Samples that cannot be matched with the COMPUSTAT database or do not have complete data in the COMPUSTAT database are excluded from the samples.

Notes: (**) and (*) represent the correlation significant level at 1% and 5%, respectively (2-tailed). The upper value is based on Pearson correlation analysis, and the below value is based on the diagonal and Spearman's rho analysis.

The correlations between QSR, CFP, and the control variables are shown in the correlation matrix in Table 1. The correlation matrix indicates all CFP measures, including ROA, ROS, BEPS, and stock returns which have a significant relationship with QSR under Spearman's rho correlation. ROA and BEPS are positively associated with QSR, while ROS and SR are negatively associated with QSR. Besides, ROA, ROS, BEPS, and stock returns have positive relationships with firm size, one of the control variables, in Pearson correlation and the relationship are highly significant. This indicates that the larger the firm size, the better CFP. ROA has a significant negative relationship with firm risk under both Pearson and Spearman's rho correlation which indicates that the higher the firm risk, the low the financial performance. CFP also has a significant relationship with another control variable, country status. The correlation matrix also shows SR and BEPS are positively associated with country status, while ROA and ROS are negatively associated with country status. The relationship suggests that firms located in the country under OECD tend to have higher SR and BEPS but lower ROA and ROS. Besides, ROA, ROS, SR, and BEPS are negatively associated with the industry, one of the control variables, so the relationships are highly significant under Spearman's rho correlation. This suggests organizations in the industry that are environmentally sensitive might involve a potential cost for compliance, and thus this may result in a lower CFP. Lastly, a significant and negative relationship can also be found between all CFP measures and the year dummy. This suggests CFP tends to be better in the early years rather than in the later years.

Analysis results of H1

H1: *QSR has an inverted U-shaped relationship with CFP in terms of:*

a: Accounting-based measures- returns on assets (ROA) and return on sales (ROS)

b: Market-based measures- Basic earnings per share (BEPS) and stock returns (SR);

To test for the inverted U-shaped relationship, the independent variable and the square of the independent variable should be added to the regressions⁹. To Test the H1 (a), two accounting-based measures, ROA (Model 1) and ROS (Model 2), from 2010 to 2014 are used as the dependent variables in the regressions. CFP in the subsequent year of the reporting period should be applied to measure ROA and ROS.

Model for Hypothesis 1(a)

$$CFP(ROA) = b_0 + b_1(QSR) + b_2(QSR^2) + b_3(Size) + b_4(Industry) + b_5(Risk) + b_6(Country) + b_7(Cstatus) + b_8(Year) + \mathcal{E} \quad (\text{Model 1})$$

$$CFP(ROS) = b_0 + b_1(QSR) + b_2(QSR^2) + b_3(Size) + b_4(Industry) + b_5(Risk) + b_6(Country) + b_7(Cstatus) + b_8(Year) + \mathcal{E} \quad (\text{Model 2})$$

Furthermore, to test the H1 (b), two market-based measures, BEPS (Model 3) and SR (Model 4) used as the dependent variables in the regression. For variables other than CFP, including QSR, QSR2 and the six control variables, including natural logarithm of total assets i.e. firm size (Size), firm risk (Risk) (Total liabilities over total assets), industry (Industry)(1= high

⁹ Due to high VIF, QSR and QSR2 after mean-centring for the reporting periods from 2009 to 2013 are used as the independent variable to test the inverted U-shaped relationship.

profile industry, 0 = low profile industry), country of origin (Country)(1= civil law country, 0 = others), country status (Cstatus)(1 = country under OECD, 0 = others) and year dummy (Year), data for the reporting periods of 2009 to 2013 are used. Thus, the regression models listed below are followed by the findings.

Model for Hypothesis 1(b)

$$CFP (BEPS) = b_0 + b_1 (QSR) + b_2 (QSR2) + b_3 (Size) + b_4 (Industry) + b_5 (Risk) + b_6 (Country) + b_7 (Cstatus) + b_8 (Year) + \mathcal{E}$$

(Model 3)

$$CFP (SR) = b_0 + b_1 (QSR) + b_2 (QSR2) + b_3 (Size) + b_4 (Industry) + b_5 (Risk) + b_6 (Country) + b_7 (Cstatus) + b_8 (Year) + \mathcal{E}$$

(Model 4)

Model 1: Regression result of H1a (Test for inverted U-shaped relationship between QSR and ROA).

Table 2: Coefficient Table of H1a (QSR and ROA)

Model 1	Coefficient	Std. Error	t-statistics	Probability
Constant	0.125***	0.005	25.829	0.0000
QSR	0.003***	0.001	2.979	0.0030
QSR2	-0.002*	0.001	-1.817	0.0690
Size	0.005***	0.001	6.286	0.0000
Risk	-0.114***	0.001	-99.756	0.0000
Industry	-0.019***	0.002	-9.948	0.0000
Country	-0.013***	0.002	-7.262	0.0000
Cstatus	-0.009***	0.002	-4.456	0.0000
Year	-0.004***	0.001	-5.848	0.0000
F-Statistic (ANOVA)			1270.187*** (0.000)	
R Square			0.610	
Adjusted R Square			0.609	
Std. Error of the Estimate			0.073	

Notes: The dependent variable is ROA. Value is () represents a significant level. The significance at the 1 and 10 percent levels are denoted by the asterisks (***) and (*).

The result of model 1 is presented in Table 2. The regression model summary shows 61.0% of the change in the dependent variable, and ROA is explained by the independent variables. This indicates the relationship is highly explained in the regression model. The regression is highly significant at 1 percent, as indicated in the F-statistics of ANOVA analysis. The coefficients of QSR are positively associated with ROA, while QSR2 is negatively associated with ROA. The result shows that an inverted U-shaped relationship exists between QSR and ROA. The P-value of QSR and QSR2 are 0.003 and 0.069, respectively, which are less than 10% significant levels. The inverted U-shaped relationship between QSR and ROA is highly significant. Besides, the other coefficients indicate that all the control variables have a P-value equal to 0.000, which demonstrates all control variables are highly significant in the QSR-ROA relationship.

Model 2: Regression result of H1a (Test for inverted U-shaped relationship between QSR and ROS).

Table 3: Coefficient Table of H1a (QSR and ROS)

Model 1	Coefficient	Std. Error	t-statistics	Probability
Constant	-8.956***	2.705	-3.311	0.0010
QSR	1.340**	0.572	2.341	0.0190
QSR2	-1.405**	0.712	-1.972	0.0490
Size	2.113***	0.437	4.840	0.0000
Risk	0.524	0.639	0.821	0.4120
Industry	-2.169**	1.051	-2.063	0.0390
Country	0.799	1.035	0.772	0.4400
Cstatus	1.321	1.068	1.236	0.2160
Year	-0.151	0.388	-0.390	0.6970
F-Statistic (ANOVA)			5.307*** (0.000)	
R Square			0.006	
Adjusted R Square			0.005	
Std. Error of the Estimate			41.106	

Notes: The dependent variable is ROS. Value is () represents a significant level. The significance at the 1, 5, and 10 percent levels are denoted by the asterisks (***), (**), and (*).

The result of model 2 is presented in Table 3. The regression model summary shows only 0.6 percent of the change in the dependent variable, ROS is explained by the independent variables. This indicates the relationship is not highly explained in the regression model. However, the regression is highly significant at 1 percent, as indicated in the F-statistics of ANOVA analysis. The coefficients of QSR are positively associated with ROA, while QSR2 is negatively associated with ROA. The result shows that an inverted U-shaped relationship exists between QSR and ROA. The P-value of QSR and QSR2 are 0.019 and 0.049, respectively, which are less than 5% significant levels. The inverted U-shaped relationship between QSR and ROA is highly significant. Also, the model indicates that the control variables i.e. firm size and industry, are significant at 1% and 5%, respectively, indicating firm size and industry are significant in the QSR-ROA relationship.

In sum, QSR has inverted U-shaped relationships with ROA and ROS and the relationships are significant. It can show that the inverted U-shaped relationship exists between QSR and CFP under accounting-based measures. H1a is supported.

Model 3: Regression result for H1b (Test for inverted U-shaped relationship between QSR and BEPS).

Table 4: Coefficient Table of H1b (QSR and BEPS)

Model 1	Coefficient	Std. Error	t-statistics	Probability
Constant	-1729.567***	173.035	-9.995	0.0000
QSR	1.617	36.616	0.044	0.9650
QSR2	51.408	45.569	1.128	0.2590
Size	495.972***	27.929	17.758	0.0000
Risk	-76.154*	40.853	-1.864	0.0620

Industry	56.550	67.253	0.841	0.4000
Country	-494.788***	66.205	-7.474	0.0000
Cstatus	313.966***	68.342	4.594	0.0000
Year	-50.435**	24.824	-2.032	0.0420
F-Statistic (ANOVA)			49.337*** (0.000)	
R Square			0.057	
Adjusted R Square			0.056	
Std. Error of the Estimate			2629.813	

Notes: The dependent variable is BEPS. Value is () represents a significant level. The significance at the 1, 5, and 10 percent levels are denoted by the asterisks (***), (**), and (*).

The result of model 3 is presented in Table 4. The regression model summary shows only 5.7 percent of the change in the dependent variable, BEPS is explained by the independent variable. The relationship is not highly explained in the regression model. However, the regression is significant (P-value = 0.000) as shown in the ANOVA analysis. The coefficient in Table 4 shows that QSR and QSR2 are positively associated with BEPS. Interestingly, an inverted U-shaped relationship can only exist when QSR is positive and QSR2 is negative. Since both QSR and QSR2 are positive, an inverted U-shaped relationship does not exist in this case. The P-value of QSR and QSR2 are 0.965 and 0.259 respectively, which are higher than the 10% significant level. It shows that the positive relationship between QSR and BEPS is not significant. However, the model indicates that the control variables including firm size, risk level, country, country status, and year dummy are highly significant in the QSR-BEPS relationship as the P-values of these control variables are less than 10% significant levels.

Model 4: Regression result for H1b (Test for inverted U-shaped relationship between QSR and SR)

Table 5: Coefficient Table of H1b (QSR and SR)

Model 1	Coefficient	Std. Error	t-statistics	Probability
Constant	-106.270*	63.903	-1.663	0.0960
QSR	-25.697*	13.522	-1.900	0.0570
QSR2	24.931	16.829	1.481	0.1390
Size	72.076***	10.314	6.988	0.0000
Risk	13.394	15.087	0.888	0.3750
Industry	-95.886***	24.837	-3.861	0.0000
Country	10.471	24.450	0.428	0.6680
Cstatus	-158.129***	25.239	-6.265	0.0000
Year	-11.066	9.168	-1.207	0.2270
F-Statistic (ANOVA)			13.321*** (0.000)	
R Square			0.016	
Adjusted R Square			0.015	
Std. Error of the Estimate			971.212	

Notes: The dependent variable is SR. Value is () represents the significant level. The significance at the 1, 5, and 10 percent levels are denoted by the asterisks (***), (**), and (*).

The result of model 4 is presented in Table 5. The regression model summary shows only 1.6 percent of the change in the dependent variable, SR is explained by the independent variable. The relationship is not highly explained in the regression model. However, the regression is significant (P-value = 0.000). The results show that QSR is negatively associated with SR while

QSR2 is positively associated with SR. Since QSR is negative and QSR2 is positive, there is the existence of a U-shaped relationship instead of an inverted U-shaped relationship. The P-value of QSR is 0.057 which is less than 10% significant level and the P-value of QSR2 is 0.139 which is slightly higher than the 10% significant level. The control variables such as firm size, industry, and country status are highly significant in the relationship between QSR and SR.

In sum, for H1b, inverted U-shaped relationships cannot be found between QSR and BEPS and QSR and SR. Both relationships are not highly explained in the regression. Since inverted U-shaped relationships do not exist between QSR and CFP under market-based measures (BEPS and SR). H1b is rejected.

Analysis results of H2

H2: *Improvement in QSR will lead to better CFP in terms of:*

a: Accounting-based measures- returns on assets (ROA) and return on sales (ROS)

b: Market-based measures- Basic earnings per share (BEPS) and stock returns (SR);

To test the long-term value to the organization the H2 is proposed. To test the H2a, under accounting-based measures, ROA in pair 1 and ROS in pair 2 are used to test the effect of improvement in QSR. In the paired samples correlations table and t-test reported in Table 6. The correlation for ROA and ROS before and after the improvement in the GRI application level is highly significant (P-values = 0.000). Besides, the mean score of ROA is -0.0023, and ROS is -0.0464, which indicates the mean scores of both ROA and ROS decreased after the improvement in the GRI application level. The negative relationship between ROA and ROS reveals that improvement in GRI application level is negatively associated with ROA and ROS. The relationships are insignificant for both ROA (P-value = 0.204) and ROS (P-value = 0.290) as both P-values are higher than 10% significant level. The results show that ROA and ROS decreased after the improvement in GRI application level, and the relationship is insignificant. In this case, the H2a is rejected.

Table 6: Paired Samples Correlations and t-test

Paired Samples	Paired Differences			Correlation (Sig.)	t-Statistics (Sig.)
	Mean	Std. Deviation	Std. Error Mean		
Pair 1 ROA_c2 & ROA_c1	-0.0023	0.0531	0.0018	0.711 (0.000)	-1.270 (0.204)
Pair 2 ROS_c2 & ROS_c1	-0.0464	1.2945	0.0438	0.185 (0.000)	-1.059 (0.290)
Pair 3 SR_c2 & SR_c1	3.3065	230.3473	7.7916	0.439 (0.000)	0.424 (0.671)
Pair 4 BEPS_c2 & BEPS_c1	43.5452	970.5859	32.8306	0.955 (0.000)	1.326 (0.185)

Notes: (Sig.) represent significant values.

To test the H2b, under market-based measures, SR in pair 3 and BEPS in pair 4 are used to test the effect of improvement in QSR (Table 6). The correlation for SR and BEPS before and after the improvement in the GRI application level is significant (P-values = 0.000). Furthermore, the mean score of SR is 3.3065, and BEPS is 43.5452, which indicates both mean scores increased after the improvement of the GRI application level. Interestingly, findings indicate improvement in the GRI application level is positively associated with SR and BEPS. However, the P-value of SR and BEPS is higher than the 10% significant level (P-value = 0.671 and 0.185 respectively), which indicates the relationships are both insignificant. Although SR and BEPS increased after the improvement of the GRI application level, the results are insignificant. As a result, the H2b is rejected as well.

In sum, the results show an insignificant decrease in ROA and ROS and an insignificant increase in BEPS and SR after the improvement of GRI application. Thus, improvements in QSR results in an increase in CFP are not supported. Both H2a and H2b are rejected in this study.

Analysis results of H3

Next, H3 used to check on the sustainability reporting like costs for preparation and external assurance are involved even though organizations maintain a constant QSR over periods. The hypothesis that sustainability reports with the same quality over years will lower CFP is suggested in H3. The hypothesis will be a test based on the two years (Table 7) and three year period (Table 8).

H3: *Maintain sustainability reports at a constant level will lower CFP over years in terms of:*

a: Accounting-based measures- returns on assets (ROA) and return on sales (ROS)

b: Market-based measures- Basic earnings per share (BEPS) and stock returns (SR);

Table 7 illustrates the results of paired sample correlation and t-tests for the effect of constant GRI application level over two years. Under accounting-based measures in H3a, ROA in pair 1 and ROS in pair 2 are used to test the effect of constant GRI application level over two years. The correlations for ROA in pair 1 and ROS in pair 2 are both significant (P-value = 0.000). Furthermore, it shows that the differences in the mean score for ROA and ROS are -0.002 and -1.255, which indicates the mean scores of ROA and ROS decreased when there is a constant GRI application level over two years. Besides, negative relationships for ROA and ROS in period n1 and n2 indicates GRI application level keeping constant over two years are negatively associated with ROA and ROS and the relationships are significant for both ROA (P-value = 0.072) and ROS (P-value = 0.045). As ROA and ROS decreased when GRI application level is kept constant over two years. Thus, H3a is supported.

Table 7: Paired Samples Correlations and t-test Over Two Years

Paired Samples	Paired Differences			Correlation (Sig.)	t-Statistics (Sig.)
	Mean	Std. Deviation	Std. Error Mean		
Pair 1 ROA_n2 &ROA_n1	-0.002	0.067	0.001	0.763 (0.000)	-1.802 (0.072)
Pair 2 ROS_n2 &ROS_n1	-1.255	35.938	0.625	0.994 (0.000)	-2.007 (0.045)

Pair 3	SR_n2 & SR_n1	-16.759	526.081	9.151	0.910 (0.000)	-1.831 (0.067)
Pair 4	BEPS_n2 & BEPS_n1	1.536	1526.065	26.545	0.875 (0.000)	0.058 (0.954)

Notes: (Sig.) represent significant values.

To test the market-based measures in H3b, SR in pair 3, and BEPS in pair 4 are used to test the effect of constant GRI application level over two years (Table 7). In the paired samples, correlations are significant (P-value = 0.000). It shows that the difference in mean score for SR is -16.759 which indicates there is a decrease in SR when there is a constant GRI application level over two years. Besides, a negative and significant relationship is significant (P-value = 0.067) supported H3b whereby when SR is used as the market-based measures to examine the effect of constant GRI application level over two years. However, the paired sample t-test for BEPS is 1.536, which indicates there is an increase in BEPS when the GRI application level keeps constant over two years. Due to the insignificant (P-value = 0.954) relationship, H3b is not supported when BEPS is used as the market-based measures.

Besides, Table 8 illustrates the results of paired sample correlation and t-tests for the effect of constant GRI application level over three years. Under accounting-based measures, ROA in pair 1 and ROS in pair 2 are used to test the effect of constant GRI application level over three years. The correlations between ROA and ROS are both significant (P-value = 0.000). The difference in mean scores for ROA = -0.005 and ROS is -2.561, which indicates ROA and ROS decrease when the GRI application level keeps constant over three years. It indicates GRI application level keeps constant over three years and is negatively associated with ROA and ROS. Although ROA and ROS decreased when the GRI application level keeps constant over three years, the result is significant only for ROA with p-value less than 10% significant level. Therefore H3a is supported under ROA but not ROS when GRI application level remains constant over three years.

Table 8: Paired Samples Correlations and t-test Over Three Years

Paired Samples	Paired Differences			Correlation (Sig.)	t-Statistics (Sig.)	
	Mean	Std. Deviation	Std. Error Mean			
Pair 1	ROA_n3 - ROA_n1	-0.005	0.085	0.002	0.834 (0.000)	-2.400 (0.017)
Pair 2	ROS_n3 - ROS_n1	-2.561	72.201	1.799	1.000 (0.000)	-1.424 (0.115)
Pair 3	SR_n3 - SR_n1	-31.312	770.953	19.208	0.857 (0.000)	-1.630 (0.103)
Pair 4	BEPS_n3 - BEPS_n1	-54.707	2485.858	61.934	0.731 (0.000)	-0.883 (0.377)

Notes: (Sig.) represent significant values.

Under market-based measures, SR in pair 3 and BEPS in pair 4 are used to test the effect of constant GRI application level over three years (Table 8). The correlation for SR and BEPS are both significant (P-value = 0.000), and it shows that the differences in mean scores are -31.312 for SR and -54.707 for BEPS, which indicates a decrease in SR and BEPS when the GRI application level is constant over three years. However, the result is slightly significant for SR with p-value slightly higher than 10% significant level (P-value = 0.103) and insignificant for BEPS (P-value = 0.377). Although SR and BEPS decrease when the GRI application level keeps constant over three years, the relationships are not highly significant, as shown in the P-value. Thus, H3b should be rejected when the GRI application level remains constant over three years.

DISCUSSION AND CONCLUSION

In this research, the relationship between QSR and CFP is examined. Since GRI reporting guideline is widely adopted by organizations over the world, the reporting organizations that report their CSR information under GRI reporting guidelines are selected as the samples in this study. Samples are obtained from the GRI report list in the reporting period from 2009 to 2013, and a total of 6,519 samples for these five reporting periods are selected for analysis. Multiple regressions are generated to test inverted U-shaped relationship hypotheses 1a and 1b.

The results show that QSR has an inverted U-shaped relationship with ROA and ROS, and the relationships are significant. It indicates that an inverted U-shaped relationship exists between QSR and CFP under accounting-based measures. H1a is supported. In contrast, inverted U-shaped relationships do not exist between QSR and CFP under market-based measures and H1b is rejected. The findings in H1a demonstrate higher QSR results in better profitability and CFP, but QSR exceeding a certain level in return increases the utilization of the firm's resources, and this leads to a decrease in overall profitability. Besides, the results in H1 show that the effect of QSR is more significant on CFP under accounting-based measures than CFP under market-based measures due to the influences on a firm's profitability and the utilization of an organization's resources.

In H2, the effect of improvement in QSR over the years is examined. The results in H2 show an insignificant decrease in ROA and ROS and an insignificant increase in BEPS and SR after the improvement in QSR. This illustrates the improvement in QSR results in an increase in CFP which cannot be found under both accounting-based and market-based measures, so H2a and H2b are rejected in this study. In H3, the effects of constant QSR over years are examined.

The results demonstrate ROA, ROS, and SR decreased when the GRI application level kept constant over two and three years, and BEPS decreased when the GRI application level kept constant over three years. The results are significant for ROA over two and three years and for ROS and SR over two years. In H3a, ROA and ROS decreased over the years as constant QSR affected stakeholder relationships and the firm's legitimacy and resulted in a decrease in profitability. Continuing investment in sustainability reporting and the decrease in the firm's profitability affect the overall profitability (ROA and ROS) of the organization. Thus, H3a is supported. Also, constant QSR provides a signal to the market as no improvement on QSR is made and thus affects the stock price of the company and its returns. It lowers SR, so H3b is partly supported. The findings in H1, 2, and 3 give answers to the research question in this study: What is the relationship between QSR and CFP for the year and over the years? There is an inverted U-shaped relationship between QSR and CFP for the year, as shown in H1a. A constant QSR leads to a decrease in CFP over the years, as demonstrated in H3a and partly demonstrated in H3b.

The findings in this study provide numerous contributions to the theories. First, the results confirm the stakeholder theory in the QSR-CFP relationship. Stakeholder management involves the communication of business goals, firm's value, and social value with stakeholders, and it helps to enhance the stakeholder relationship and gain long-term support and trust from the stakeholders. It is suggested that stakeholder management helps organizations to maximize their business returns (Du et al., 2010). However, at a time when most of the stakeholders' expectations are fulfilled, business advantages will slow down even QSR increases, and the additional cost in stakeholder management will result in a decrease in CFP. Thus, the inverted U-shaped relationship between QSR-CFP is found in H1a. The influence of QSR on stakeholder relationships demonstrates stakeholder theory is important in explaining the inverted U-shaped relationship between QSR and CFP in this study. Second, the findings of this study contribute to the legitimacy theory. This theory shows that there is a social bond between a company and the society in which it operates (Deegan, 2002; Patten, 1991, 1992). As a result, organizations have duties to provide all financial and non-financial information to the public and communicate the daily activities of the company to stakeholders. Because of the increasing demand for accountability and transparency, CSR communication has become a social norm and companies have to provide high-quality information to the public. CSR disclosure can help to preserve the company's image as a legitimate business (De Villiers & Van Staden, 2006). But overemphasis on their positive aspects and achievement or inflation of corporate commitments in the sustainability report will bring a negative impact on the company and lower its legitimacy conversely. It can explain the findings in H1 and H3. An increase in QSR enhances the legitimacy of the reporting organizations, but QSR over a certain level brings a negative effect on firm image and legitimacy. This shows that the legitimacy theory does explain the inverted U-shaped relationship in H1. Also, constant QSR over years is perceived by stakeholders that organizations are less willing to respond to the demand for legitimacy. This affects the firm image and lowers CFP, as shown in the results in H3. On the other hand, the implication for signaling theory is not as significant as stakeholder and legitimacy theory in this study. Even though CSR disclosure helps to reduce information asymmetry, noise, and uncertain market from CSR information reduces its reliability and might not assist investors to evaluate imperfect information in the market (Porter & Kramer, 2006). As a result, the findings in this study illustrate CFP under market-based measures is less significant than CFP under accounting-based measures in the examination of the QSR-CFP relationship.

The findings of this study have implications for managers and different parties in society. An inverted U-shaped relationship between QSR and CFP is observed in the study, and this relationship is seldom proposed in prior studies. However, in this study, the inverted U-shaped relationship indicates that the positive and negative relationships which are insufficient to explain the QSR-CFP relationship. This finding helps management and investors to better identify risks and opportunities of the organization and assist their decision making. Next, both cross-sectional and longitudinal studies are included in the examination of the QSR-CFP relationship, which explains the impacts of QSR on CFP for the year and over years. The changes in QSR over the years provide relevant information to the public to assess the impacts on CFP and to predict future risk. This study indicates QSR does have significant impacts on CFP over years, and it is suggested that management and investors need to account for the variation of QSR over years. The findings of this study also validate the suggestions in past research. As shown in this study, accounting-based measures are suggested to be more significant than market-based measures in the QSR-CFP relationship. This is consistent with McGuire et al. (1988), who suggest that accounting-based measures can better capture CSR performance. The findings help management and investment in the selection of CFP measures,

and they can also help researchers to investigate the relationship between CSR and QSR in future studies.

Lastly, the control variables used in this research do have a significant influence on the QSR-CFP relationship and should be considered. Among the six control variables, firm size, industry, and year have a significant association in the QSR-CFP relationship. The impacts of the control variables in the QSR-CFP relationship provide more understanding to researchers to assess QSR and draw their attention to these variables in future research. In addition, a large sample size increases the generalisability of this study, and the findings can be generally applied to different countries and industries. In this research, 6,519 reporting organizations covering 38 industries and 92 countries over five years are included in the analysis. High populations with board coverage provide comprehensive information in assessing the QSR-CFP relationship, and the outcome findings can be used worldwide to evaluate the organizations in different industries and countries.

The key assumptions of this study are discussed in this section. In this paper, external assurance is assumed independent in all situations in assessing QSR. As there is likely to be a trade-off between the controllability and credibility of CSR communication (Du et al., 2010), management control over the assurance process might affect QSR. Since management involvement in the assurance process is not measured or disclosed in the financial report or sustainability report, it is difficult to obtain reliable data about the management's involvement in the assurance process. Therefore, external assurance is assumed independent for the purpose in this paper. Besides, the score for external assurance on the sustainability report is assumed to be the same as the increment of one GRI application level, regardless of the types of assurance providers. Some researchers argue that types of assurance providers do impact the creditability of the sustainability report. As the types of assurance providers are not provided in the GRI report list, the external assurance provided by different assurance providers is assumed to provide the same value to QSR.

Another assumption in this study is the equal weighting of the areas covered in the sustainability report. There are different aspects covered in the sustainability report, such as environmental, social, and economic aspects. Some companies might perform well in certain areas but not others. Since different industries emphasize different areas, it is difficult to have a reliable measure of the weighting of each area in assessing QSR. In particular, there are 38 industries covered in this study. For this study, different areas covered in the sustainability report are assumed to have equal weighting, and QSR is measured as a whole using the overall GRI application level but not for individual areas. These limitations should be taken into account in future studies.

This study does have some limitations that need to be taken into account in respect of future research. The first one is the exclusion of reporting organizations that do not follow GRI reporting guidelines. In this study, only firms that publish sustainability reports under GRI reporting guidelines are selected as the samples, whereas there are some companies that still adopt other standards and reporting guidelines in their sustainability reports. The second limitation is the availability of financial data. The COMPUSTAT database provides a broad range of financial information over the world, but still, some reporting organizations cannot match directly with financial data in the COMPUSTAT database and have to be excluded from this study. Besides, as BEPS and SR are used for the analysis in this study, those reporting organizations without market data, such as unlisted firms and non-governmental organizations, are also excluded. The third limitation is the absence of information related to the control

variables, such as the age of a company's assets, research, and development costs on CSR. Thus, no reliable measurement for these variables can be found, and they are not included in this study.

Implications are provided for future research on CSR reporting. A new methodology should be created in further study to assess the sustainability report of other organizations that do not follow the GRI reporting guideline. Next, the application level system in G3 has been revised, and a new rating system was launched in May 2013 in the G4 sustainability reporting guideline (GRI 2015). Hence, in future research, the investigation of the impacts of QSR measures under the new rating system in G4 on CFP is suggested. Apart from this, some variables are not considered in this study, like types of assurance providers, stakeholder engagement in sustainability reports, the ownership structure of the organization, corporate visibility, and governance structure, etc. Further investigation should be carried out to test the impacts of these variables on the relationship between QSR and CFP.

References

Introduction

Financial accounting scandals in corporations have sparked fears of fraud. According to the Association of Certified Fraud Examiners, corruption, asset misappropriation, and financial statement fraud are the three types of fraud, according to the Association of Certified Fraud Examiners (ACFE, 2016). According to an ACFE report titled the 2016 Global Fraud Survey, the estimated loss due to fraud worldwide is 5% of company sales, or USD 3.7 trillion (ACFE, 2016). Financial statement fraud had the fewest cases, resulting in the highest average loss of USD 975 thousand, followed by corruption at USD 200 thousand and asset misappropriation at USD 125 thousand. Since top executives (Chairman, President, CEO, CFO, in a congregation, also with company founders) typically commit financial statement fraud, this pattern demonstrates that financial statement fraud is the leading cause of company failure (Tuanakotta, 2013). The 2016 Global Fraud Report describes the fraud detection system that most whistleblowers are carried out by 39.1% of internal auditors, 16.5 percent by external auditors, and just 3.8 percent by external auditors (ACFE, 2016). Based on the above phenomenon, investors may wonder how a third party may detect financial statement fraud, the most costly form of fraud. Why is the External Auditor's financial statement audit can only detect a small percentage of fraud?

Financial statement fraud is also a frequent occurrence in Indonesia, owing to the results of audits conducted by both the Financial statement fraud is also prevalent in Indonesia, as evidenced by recent audit findings by the Public Accounting Firm and the Audit Board of the Republic of Indonesia (BPK). Additionally, a World Bank Report on Accounting and Auditing (Report on Standards and Codes Compliance, 2010) makes observations about the efficiency of Indonesia's public accountants. The ROSC assesses the extent to which public accounting firms of various sizes adhere to various audit standards. Due to limited resources, quality control is typically more difficult to implement in small public accounting firms for various reasons, one of which is that many auditors do not seek to detect fraud (Tuanakotta, 2015). DeAngelo (1981) demonstrated that an audit firm's size (public accounting firm size) affects an auditor's independence in detecting financial statement errors. According to Francis and Yu (2009), large accounting firms have a heightened interest in detecting irregularities in financial statements. The Public Accounting Firm and the Audit Board of the Republic of Indonesia (BPK) in recent years.

In addition, a World Bank Report on Accounting and Auditing (Report on Observance of Standards and Codes, 2010) makes observations on the efficiency of Public Accountants in Indonesia. The ROSC identifies the level of compliance with various audit standards among Public Accounting Firms of various sizes. Due to limited resources, quality control is typically more difficult to enforce in small public accounting firms, one of which is that many auditors do not seek to detect manipulation (Tuanakotta, 2015). DeAngelo (1981) discovered that the size of an audit firm (public accounting firm size) impacts an auditor's independence in uncovering financial statement errors. According to Francis and Yu (2009), major accounting firms have more goals for detecting issues in financial reports.

In 2015, a phenomenon occurred in a revision to government regulations governing the rotation of public accounting firms performing audit services. More precisely, Government Regulation No. 20 / PP / 2015 regarding public accountant practices. This new regulation creates a new phenomenon regarding the rotation period for auditor and public accounting firms, extending auditor tenure from three to five years and public accounting firm's tenure from six to unlimited, provided the Public Accounting Firm has more than two partners. Why is this regulatory change concerning public accounting firm rotation so critical? According to Rick Hayes et al. (2005), an audit tenure characteristic is that the first year of the audit (short tenure) is considered less comprehensive (less in-depth), as it takes time to identify all potential audit risks for the client. As a result, audit quality is diminished. However, if an audit assignment is excessively lengthy (excessive tenure), there is a risk of excessive familiarity (familiarity threat). As a result, there is an ongoing debate about audit tenure, as evidenced (Carcelo and Nagy 2004), who assert that financial statement fraud occurs more frequently during the first three years of the auditor-client relationship and that there is no evidence of long auditor tenure. As a result of the foregoing, the authors wish to conduct additional research into how effectively an external auditor can detect indications of fraud and the effect of audit firm size or the size of a public accounting firm and audit tenure on indications of fraudulent financial statements.

Literature Review

According to the contract's terms, Jensen and Meckling define an agency relationship as "when the principal delegates some decision-making authority to the agent" (Jensen and Meckling, 1976). This agency relationship generates two issues (agency issues), namely: (a) information asymmetry, in which management typically has more information about the entity's actual financial and operating position than the owner; and (b) a conflict of interest due to unequal goals, in which management does not always act in the owner's best interests (Jensen and Meckling, 1976). An audit is a type of supervision that management employs to resolve agency conflicts to take actions that benefit both the individual and the group (Jensen and Meckling, 1976; Watts and Zimmerman, 1986). Agency theory governs the cooperative relationship between management, acting as an agent, and the principal, the business's owner (Jensen & Meckling, 1976). Agency theory asserts that the relationship between management and the principal frequently results in conflict between the two parties due to conflicting interests. The presentation of credible and trustworthy financial reports is one way in which management owes principals. Regardless of the principal's interests, management tends to overstate the company's performance. This is done by management to ensure that the financial statements always appear to the principal in a favorable light. While the company's performance will occasionally be less than ideal, management wishes for its financial reports to be consistently favorable in the principal's eyes. As the business's owner, the principal desires that management consistently perform at a high level to maximize profit. This circumstance forces management to deceive the principal through financial statement manipulation.

Based on the foregoing relationship, it raises allegations of community outrage. Fraudulent financial reporting is an accounting scandal that undermines public trust or the confidence of interested parties; fraudulent financial reporting is inextricably linked to auditor interference due to a series of events. According to proponents of audit rotation, auditor independence can be harmed by long-term relationships with company executives. A closer relationship with management causes the auditor to align his or her interests more closely with management. Financial reporting or manipulation that is fraudulent results in errors in business decision-making. The duration of the auditor's engagement with the client is suspected of causing financial reporting fraud. In the context of a financial statement audit, fraud is defined as an intentional misstatement of financial statements. The ACFE classifies fraud into three categories: fraudulent financial statements, asset misappropriation, and corruption. Financial reporting fraud is the intentional misstatement or omission of amounts or the deliberate disclosure of information to deceive the report's users. Financial reporting fraud is well-known to auditors performing general audits as fraud committed by management in the form of material misstatements, both overstatement and understatement, because earnings management is one type of fraudulent financial reporting.

Fraud is defined in the Fraud Examiners Manual (2014) as "a deliberate misstatement of the truth or a dishonest scheme used to take unfair advantage of another person or group of people". It encompasses all methods of deception, such as surprise, trickery, or cunning. According to ACFE (2016), there are three distinct types of occupational fraud: "(1) asset misappropriation, which involves the theft or misuse of an organization's assets; (2) corruption, in which fraudsters improperly use their influence in a business transaction to obtain a benefit for themselves or another person, in violation of their duty to their employer or the rights of others; and (3) fraudulent statements, which generally involve falsification of an organization's financial statements".

Numerous red flags indicate that a business has engaged in financial statement fraud, including behavioral, situational, organizational, financial, and transactional red flags (Stamler et al., 2014:70). Organizational red flags refer to the control environment's effectiveness in monitoring financial processes, whereas financial & transactional red flags are indicators based on financial reports or accounting data. This study employs financial and transactional red flags as a simpler and more objective method of measurement. According to the ACFE (2016), financial ratio analysis can reveal indications of financial statement fraud. George (2009) and Alwi et al. (2013) also established this. In accordance with the ACFE statement (2016) and the findings of (George 2009; Alwi et al. 2013), this study employs one of the tools used to detect the possibility of fraudulent financial statements using the financial & transactional red flags approach, namely the M-Score from Messod D. Beneish (Beneish, 1999). The purpose of this study is to establish whether the size of the Public Accounting Firm affects the indicators of fraudulent financial statements, (DeAngelo 1981; Francis and Yu 2009; Lisic et al. 2014; Nedal and Ihab assert 2013). Additionally, it will demonstrate whether the suspicion of fraudulent financial statements affects the indicators of fraudulent financial statements (George 2009; Lisic et al. 2014; Carcello and Nagy 2004).

According to (Arens, Elder, and Beasley 2014: 46), CPA firms are classified according to their size as follows: (1) The Big Four International firms, (2) National firms, (3) Regional and Local firms, and (4) Small Local firms, with the distribution determined by total revenue, partner count, professional count, and office count. Meanwhile, Deis and Giroux assert that the size of an audit firm can be determined by the number of clients and the percentage of audit fees collected (Watkins et al., 2004). Meanwhile, Hayes (2014) divides public accounting firms into two categories: Big Four and non-Big Four. The big four public accounting firms participate through their international headquarters, which have more developed technology, procedures, and regulations than small regional public accounting firms.

Farber (2005) demonstrates that businesses that commit fraud frequently avoid hiring the big four external auditors. This finding demonstrates that the big four have a higher audit quality than other external auditors, lowering the risk of a company committing fraud. The big four public accounting firm maintains a positive reputation by providing high-quality audits that inspire public confidence (Nizar, 2017). Becker et al. (1998) quantified audit quality by examining discretionary accruals. This research is motivated by a study indicating that non-Big Six auditors allow more earnings management than big six auditors. According to Zhou and Elder (Antonia, 2008), companies audited by reputable public accounting firms are less likely to commit fraud before the initial public offering than companies audited by the big four public accounting firms. It demonstrates that businesses face a barrier to entry when choosing one of the big four public accounting firms. According to (Lennox & Pittman 2010; Chen 2016), the big four accountants assist businesses in avoiding financial scandals. Weiner (2012) asserts that the size of the auditor firm is indicative of credibility, followed by disclosure of corporate fraud. Similarly, Fimanaya & Syafruddin (2014) asserted that the audit firm's size affects the likelihood of financial statement fraud. A third hypothesis can be drawn from this study based on the explanation: the larger the auditor firm or auditor company, as measured by the Big Four Public Accounting Firms, the lower the indication of financial statement fraud.

H1: Audit Firm Size has a significant effect on the indication of fraudulent financial statements.

According to Johnson et al. (2002), audit tenure is defined as “the number of consecutive years in which the audit firm (auditor) audited the client.” Griffin et al. (2009) define audit tenure as “the duration of an auditor’s work and relationship with clients, which is defined as the duration of an auditor’s work within the scope of the contract.” According to Duton et al. (1994), the longer a person works for an organization or company, the more he becomes a part of the organization or company in the personal category. Public accountants’ familiarity can stifle the skepticism required to examine client financial statements. The next argument in favor of the length of the audit assignment is that the knowledge gained about the client and industry through repeated audits will increase, thereby improving the audit’s quality.

Additionally, (Johnson et al. 2002; Myers et al. 2003) reported that the discretionary accrual rate decreased as the assignment period lengthened. Carcello and Nagy (2004) investigated the association between the tenure of public accounting firms and financial reporting irregularities. Financial reporting fraud was discovered during the engagement’s early years or the auditor’s brief tenure (three years or less). Johnson et al. (2002) found that the absolute value of unexpected accruals (AVUA) was higher in the first year of the auditor assignment (Carcello & Nagy 2004:3). Azizkhani et al. (2006) discovered that tenure is significantly related to ex-ante costs or costs to be faced that are less than equity capital, but only for non-Big four accounting firms. The result is that the longer the commitment to the perceived quality of financial statements is, the greater.

The length of the audit tenure can affect two factors that ultimately affect audit quality: the auditor’s independence and competence (DeAngelo, 1981). According to the independence factor, the longer the audit tenure, the more emotional the relationship with the client becomes, resulting in decreased independence, which is reflected in the auditors’ less objective assumptions (Dinuka & Zulaikha, 2014). Additionally, a lengthy audit engagement period increases the possibility of developing economic ties, with the auditor agreeing to the client’s efforts to manipulate financial statements through accounting techniques (Nasser et al., 2006). From the auditor’s perspective, if the client being audited already has adequate control over the financial statements and management demonstrates integrity and competence, auditors tend to have expectations that the client will retain these characteristics, which exacerbates the auditor’s skeptical attitude diminished (Carcello & Nagy, 2004).

Meanwhile, if viewed from the competency factor, the longer the audit tenure can increase knowledge about a specific industry and client-specific information such as in terms of business processes, accounting systems, and internal controls so that this knowledge can increase the competence of auditors to detect material misstatement in financial statements. Johnson et al., 2002). However, if there is a change of auditors, the specific knowledge about the client will be limited to the new auditor (DeAngelo, 1981). And the process of understanding the specific industry and client companies take at least one year after the change of auditors (Knapp, 1991; Krauss & Zulch, 2013). Therefore, it appears that there are two views regarding the effect of the length of the audit tenure. So, according to the research objectives, it will focus more on the effect of audit tenure on the level of independence, which can then affect the level of audit quality.

H2: Audit Tenure affects Fraudulent Financial Statement

Methodology

The research method used in this research is explanatory research because it is a study that explains the causal relationship between research variables (Cooper and Schandler, 2014). The operationalization of each variable in this study is as follows: Audit firm size (variable X1): The size of the public accounting firm is the size of the public accounting firm, which can be classified based on big four firms and non-big four firms (Hayes et al., 2014: 50). A dummy variable measures this variable. Audit tenure (variable X2): Audit tenure is defined as the number of consecutive years that a public accounting firm has audited clients and the length of time that a public accountant has worked on a contract (Griffin et al., 2010; Carey and Simnett, 2006; Johnson et al., 2002). Fraudulent financial statement (variable Y). The variable indication of financial reporting fraud is measured using 8 Beneish ratios and the M-Score formula (Beneish, 1999). The Beneish ratio is used to detect indications of fraudulent financial reporting that has been tested in several studies afterwards and has been proven to be used as an indicator or a way to detect or detect indications of fraudulent financial reporting (Bourne, 2008; Grove and Basilio, 2008; Alwi et al., 2013; George, 2009).

According to Beneish (1999), the criteria for the M-Score are that if the M-Score value is less than -2.22, it means that the company does not manipulate financial statements (does not carry out fraudulent financial statements). Meanwhile, if the M-Score value is greater than -2.22, this figure shows that the company has manipulated financial statements. In this study, the population is company issuers listed on the Indonesia Stock Exchange in 2015 registered at least 2014. The type of sampling method to be used is the nonprobability sampling method. The technique of nonprobability sampling method used is purposive sampling. Based on the purposive sampling technique, the criteria for the sample to be taken are determined according to the research objectives, namely a sample of manufacturing companies listed on the IDX. Manufacturing criteria are set as specific objectives because, in financial reporting, similar companies will have almost the same transaction accounts so that when entering into the financial ratio formula, it becomes easier and equal. In addition, manufacturing criteria are also the objective of research because fraudulent financial statements in the world and Indonesia are more prevalent in manufacturing companies. The type of statistical analysis tool used is multiple linear regression analysis. To find the performance of the estimated regression model, several assumptions must be fulfilled so that the conclusions of the test results are not biased, including the normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test (only for data containing time series).

Results and Discussion

The statistical description of the results of research regarding the audit firm size or public accounting firm size, audit tenure, and indications of fraudulent financial statements as

measured by financial ratios from a sample of manufacturing companies listed on the IDX as measured by the Beneish Ratio (1999): Sales Growth Index (SGI) indicator, Gross Margin Index (GMI), Asset Quality Index (AQI), Days' Sales Receivable Index (DSRI), Sales, General and Administrative Expenses Index (SGAI), Depreciation Index (DEPI), Leverage Index (LVGI), Total Accrual to Total Assets (TATA) and M-Score. The average Mscore data is -2.5134, which means that the average financial statements of the sample companies are not indicative of fraud, but 37 samples indicate fraud. Even companies reach the highest score of 7.95, which exceeds the minimum threshold for indications of fraud, namely -2.22. In addition to other ratios, as shown in the table below:

Table 1. Statistical Overview of Each Research Variable

	N	Min	Max	Mean	Std Deviation
Y1 (SGI)	140	.40	6.95	1.0442	.59929
Y2 (GMI)	140	-2.74	4.81	.9847	.73813
Y3 (AQI)	140	-26	31.57	1.5691	2.93769
Y4 (DSRI)	140	.19	2.59	1.0150	.36224
Y5 (SGAI)	140	.20	2.66	1.1468	.30096
Y6 (DEPI)	140	.03	5.05	1.1059	.53564
Y7 (LVGI)	140	.25	34.10	1.2530	2.80856
Y8 (TATA)	140	-.82	.25	-.0454	.11578
Y (M-Score)	140	-13.71	7.95	-2.5134	1.67059
X1 (Size)	140	.00	1.00	.3929	.49014
X2 (Tenure)	140	1.00	6.00	4.3429	1.96286
Valid N (listwise)	140				

Source: Data processed 2021

The regression model test results include the assumption test for multiple regression for normality, multicollinearity, and heteroscedasticity. The multiple regression autocorrelation assumption test was not carried out because the multiple regression model data were not time-series. This data analysis and hypothesis testing is intended to provide empirical evidence whether there is an effect of audit firm size or size of the public accounting firm and audit tenure on indications of fraudulent financial statements. The table below presents a summary of the regression model output for each regression model that identifies the magnitude of the effect, the prediction of the variables causing the fraudulent financial statements indication, and the level of significance of the regression model.

Table 2. Summary of Regression Output Identification of Causes of Fraudulent Financial Statements Indications

	SGI	GMI	AQI	DSRI	SGAI	DEPI	LVGI	TATA	M-Score
Constant	1.177	1.099	2.246	0.981	1.136	0.98	0.706	-0.066	-2.02
t – count	9.417	7.123	3.679	12.984	18.116	8.934	1.213	-2.711	-5.823
Audit Firm Size	0.021	-0.033	-0.412	-0.081	-0.078	-0.254	-0.859	0.007	0.056
t – count	0.175	-0.221	-0.701	-1.119	-1.286	-2.409 ^b	-1.534	0.283	0.168
P – value	0.861	0.825	0.484	0.265	0.201	0.017	0.127	0.777	0.867
Audit Tenure	-0.032	-0.023	-0.119	0.015	0.010	0.052	0.204	0.004	-0.118

t – count	- 1.082	-0.629	-0.809	0.840	0.635	1.978 ^c	1.456	0.695	-1.422
P – value	0.281	0.532	0.420	0.402	0.526	0.050	0.148	0.488	0.157
R-Squared	1.0%	0.6%	1.6%	1.0%	1.2%	4.6%	2.1%	0.7%	1.7%
F- count	0.676	0.390	1.147	0.678	0.827	3.296 ^{bc}	1.491	0.508	1.210
P-value	0.511	0.678	0.321	0.509	0.440	0.040	0.229	0.603	0.301
Observed	140	140	140	140	140	140	140	140	140

Two-tailed test: a Significant at the 1% level; b Significant at the 5% level; ° Significant at the 10% level

The partial test results of the effect of Audit Firm Size on the indication of fraudulent financial statements as measured by the indicators Sales Growth Index (SGI), Gross Margin Index (GMI), Asset Quality Index (AQI), Days' Sales Receivable Index (DSRI), Sales, General and Administrative Expenses Index (SGAI), Depreciation Index (DEPI), Leverage Index (LVGI), Total Accrual to Total Assets (TATA) and Messod D Beneish-Score (M-Score), show a negative relationship on the indicators GMI, AQI, DSRI, SGAI, DEPI, and LVGI. Therefore, it means that the big four public accounting firms can report financial statements without indicating fraud. On the other hand, it shows a positive relationship with the SGI, TATA, and M-Score indicators. However, from the nine (9) indicators, from the results of the hypothesis test, it is concluded that only the DEPI indicator has the alternative hypothesis (Ha) accepted by showing a significant effect, meaning that audit firm size has a significant effect on the indication of fraudulent financial statements on the DEPI indicator. Meanwhile, the other eight indicators do not have a significant effect, meaning that the audit firm size variable does not significantly affect the indication of fraudulent financial statements.

This result is contrary to the research results by (DeAngelo 1981; Francis and Yu, 2009; Sawan, 2013), that the Firm Size Audit or auditors at Public Accounting Firm with Big Four criteria are considered more capable of finding reporting fraudulent financial statements or improving quality. Financial reports (DeFond and Zhang, 2013). This means that the financial reports audited by the Big Four public accounting firms should not contain fraud or indications of fraud because large public accounting firms provide more training to achieve audit quality (Francis and Yu, 2009). The partial test results of the effect of audit tenure on the indication of Fraudulent Financial Statements as measured by indicators of Sales Growth Index (SGI), Gross Margin Index (GMI), Asset Quality Index (AQI), Days' Sales Receivable Index (DSRI), Sales, General and Administrative Expenses Index (SGAI), Depreciation Index (DEPI), Leverage Index (LVGI), Total Accrual to Total Assets (TATA) and Messod D Beneish-Score (M-Score), show a positive relationship on the indicators DSRI, SGAI, DEPI, LVGI, and TATA. On the other hand, it shows a negative relationship with the SGI, GMI, AQI, and M-Score indicators. It means that the longer the audit tenure or engagement with one public accounting firm, the more indications of fraudulent financial statements and vice versa with a negative relationship. However, from the nine (9) indicators, from the results of the hypothesis test, it is concluded that only the DEPI indicator has the alternative hypothesis (Ha) accepted by showing a significant effect, meaning that Audit Tenure has a significant effect on the indication of Fraudulent Financial Statements on the DEPI indicator. Meanwhile, the other eight indicators do not have a significant effect, meaning that the Audit Tenure variable does not significantly affect the indication of fraudulent financial statements.

This result is not entirely the same as the research results conducted by George (2009), which only examined five indicators, in which four indicators were significant, and only one indicator was insignificant, namely the DSRI indicator, all in a negative direction. George

(2009) states that the longer the engagement period, the lower the fraud in the financial statements. This is because the auditors are increasingly understanding and competent with the client company's systems and procedures. Meanwhile, research by (Deis and Giroux 1992; Carcello and Nagy 2004, Mgbame 2012) shows that long audit tenure negatively affects the quality of financial reports, which means that there are indications of fraud in the financial statements. In addition, if the engagement period is too long, there is an emotional closeness between the auditor and the client, reducing independence, professional skepticism, and more compromise.

The results of hypothesis testing jointly with Audit Firm Size and Audit Tenure on the nine (9) indicators conclude that only the DEPI indicator has the alternative hypothesis (Ha) accepted by showing a significant effect. It means that Audit Firm Size and Audit Tenure together significantly affect the indication of fraudulent financial statements on the DEPI indicator. Meanwhile, the other 8 indicators have no significant effect. Likewise, the results of the coefficient of determination or R² or the greatest influence can explain the variation of the two variables audit firm size and audit tenure are DEPI indicators, although only 4.6% compared to other indicators, other factors influence the rest. Several researchers have proved the Beneish Ratio Method (Beneish, 1999), one of which is (George 2009; Beneish et al. 2012) stated that these ratios are significant and could indicate fraud in the financial statements. There is an interesting phenomenon from the results of this study, that the indicator that has the most significant effect is DEPI (Depreciation Index), while from the results of previous empirical research by Beneish (1999), the DEPI ratio is an insignificant variable is showing indications of fraud in financial statements, together with LVGI and SGAI are also insignificant. Therefore, George (2009) only uses five ratios from Beneish's (1999) study. Of the five (5) ratios used in George's (2009) study, all of them have a negative effect on audit tenure, and there is one (1) which is not significant, namely DSRI. However, in this study, an anomaly was found that the DEPI indicator is the only one that has a significant effect either partially or collectively. It may be due to the Depreciation Index (DEPI) in the sample companies of this study indicating the possibility of manipulation, indicating that the depreciation rate of assets has been slowed down, there is a possibility that the company has revised up the estimated economic life of the assets or used a new method that increases income (Beneish, 1999).

Conclusion

Either partially or jointly, Audit Firm Size and Audit Tenure have no significant effect on indications of fraudulent financial statements as measured by indicators of Sales Growth Index (SGI), Gross Margin Index (GMI), Asset Quality Index (AQI), Days' Sales Receivable Index (DSRI), Sales, General and Administrative Expenses Index (SGAI), Leverage Index (LVGI), Total Accrual to Total Assets (TATA) and Messod D Beneish-Score (M-Score), but have a significant effect on Fraudulent Financial indications Statements as measured by the Depreciation Index (DEPI) indicator. Likewise, the result of the largest coefficient of determination or R² is on the DEPI indicator, meaning that variations in DEPI changes can be explained by variations in the two variables of Audit Firm Size and Audit Tenure, although only 4.6% influence, the remaining 95.4% is influenced by other factors. It means that partially or jointly, the two independent variables have not significantly influenced the indication of fraud in the company's financial statements, or only 4.6%. It can happen because of many other factors that influence financial reports, so it cannot be detected by looking at financial ratios alone. Several other methods need to be proven as well.

The results of this study have several limitations. First is the complexity of the problem under study, so the possibility of influencing other factors besides audit firm size and tenure on indications of fraudulent financial statements. Other factors that may affect the indications of fraudulent financial statements include audit fees, time budgets, reputation risk, etc. Second,

the observation data used is limited to the type of manufacturing company. Therefore, the regression model resulting from data processing can be different if more observations are made in the next research. Based on the conclusions and limitations of the research presented above, here are suggestions for auditors and public accounting firms in Indonesia and future researchers. First, the auditor of public accountant needs to improve their ability in auditing so that the audit objectives meet audit procedures that comply with international standards and can detect indications of fraud in the financial statements. Second, the public accounting firm must improve the quality of its quality control in collaboration with PPPK and OJK as regulators and IAPI to increase public confidence in users of financial reports. So that in making rules and standards based on good research results. Third, for the next researcher, the results of the regression analysis on the audit firm size and audit tenure variables in this study do not fully support the results of the previous research, so there is still an opportunity for further research to find and find the cause, to add more varied research samples or research methods.

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