

# EARNINGS MANAGEMENT MOTIVES, IDIOSYNCRATIC RISK AND CORPORATE SOCIAL RESPONSIBILITY IN AN EMERGING MARKET

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## Abstract

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This research investigates the impact of the three earnings management methods according to Dechow and Skinner (2000) and Gunny (2005), i.e., accrual earnings management (AEM), real earnings management (REM), and fraudulent accounting (FRA), on idiosyncratic risk. This research also examines the moderating effect of corporate social responsibility (CSR) disclosure on these associations. This research employs balance panel data consisting of 492 observations from 2016 to 2019. This research obtains 123 companies listed under the manufacturing industry of the Indonesia Stock Exchange (IDX) through purposive sampling. To test the hypotheses, this research uses multiple linear regression models. This research finds that all three earnings management methods are positively associated with idiosyncratic risk. Furthermore, CSR disclosure is proven to weaken the effect of accrual earnings management and fraudulent accounting on idiosyncratic risk, but this does not apply to real earnings management. These results are robust after a sensitivity test. This research fills the existing gap within idiosyncratic risk study. Among similar studies, this research is the first to investigate the effect of fraudulent accounting on idiosyncratic risk and the moderating effect of CSR disclosure. This research also raises awareness of the cost of idiosyncratic risk, especially in emerging markets with relatively smaller stock markets, which makes diversification more challenging. It provides insights to market regulators on how investors can benefit from more disclosures.

**Keywords:** Earnings Management, Idiosyncratic Risk, Corporate Social Responsibility Disclosure

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## 1. INTRODUCTION

For centuries, stocks have been a principal instrument for preserving wealth. Every purchase and relinquish of stock is a tactical gambit. However, investigating a company's overall risk beyond its facade can be hard for average investors, particularly the company-specific risk that is intentionally concealed. The company-specific or idiosyncratic risk is an internal risk that can be lowered through portfolio diversification, contrary to the undiversifiable systematic risk or market risk that is directly related to all general market movements. Unlike systematic risk, idiosyncratic risk is endogenous to a particular asset, either individual (e.g., stock of a certain company) or a group of assets (e.g., stocks of a specific sector). Over time, the proportion of systematic and unsystematic risk in an individual stock change, driven by external and internal factors (Abdoh & Varela, 2017).

The modern portfolio theory has led to a general notion among investors to care only about systematic risk as idiosyncratic risk can arguably be eliminated by holding a well-diversified portfolio (Fu, 2021). It further restrained the element of idiosyncratic risk from being priced (Schober, Schaeffler, & Weber, 2014). Conventional asset pricing models and theory suggest that idiosyncratic risk should not be priced as investors can obviate its relevance through diversification (Rajpal & Jain, 2015). Schober et al. (2014) proclaimed that other models, such as the three-factor model (TFM) and the arbitrage pricing theory (APT), have been proposed to estimate systematic, undiversifiable risk exposure, i.e., the degree of covariation between market portfolios and company's equity value.

However, the enormous accounting scandals in the early 2000s (e.g., Enron, WorldCom, and Global Crossing) led to a global concern that perfect risk diversification is nearly impossible. Therefore, idiosyncratic risk should be priced. Schober et al. (2014) argued that no matter how many partially correlated stocks are added to the portfolio, one cannot completely nullify the company-specific risk. The risk of an individual stock is mainly contributed by idiosyncratic risk (Hasan & Habib, 2017a). According to Schober et al. (2014), the idiosyncratic risk becomes costly due to market imperfections, such as less diversified agents and moral hazards or asymmetric information. In the aftermath, more recent studies have found a significant association between stock returns and idiosyncratic risk (Qu, Liu, & He, 2018; Vo, Vo, & Nguyen, 2020), which revealed that investors flocked to discount company-specific risk into the stock price.

As capital market penetration rises in Indonesia, investor protection grows into a more paramount issue. In 2020, the Indonesia Stock Exchange (IDX) recorded a historical growth rate of new retail investors of 48.82%. Most of them are millennials trying to reap future profits from falling securities prices due to the COVID-19 pandemic. Although investors are expected to make rational decisions based on the company's fundamental to avoid "crowd herding", the increasing reliance on financial information may give managers the perfect incentive to engage in earnings manipulation to conceal companies' shortcomings. Considering how

harmful it can be to shareholders' investment, idiosyncratic risk should be mitigated. However, the Indonesian Stock Market possesses its problem. With a relatively smaller stock market compared to NYSE (U.S.A), NASDAQ (U.S.A), Tokyo Stock Exchange (Japan), or other emerging markets such as Shanghai Stock Exchanges (China) and Bombay Stock Exchange (India), diversification can be challenging with less stock available to collect. This condition is exacerbated by poor financial literacy of only 38.03% in 2019 when financial inclusion has already reached 76.19% (OJK, 2020), suggesting that the average investors lack the skill to sufficiently analyze which stock to collect.

The idiosyncratic risk can be as costly as systematic risk, if not more. The semi-strong efficient market hypothesis suggests that stock prices efficiently adjust to all publicly available information (Fama, 1970). It implies that possession and control over information partially allow managers to alter price formation. Manager opportunism to purposefully distort publicly available information has a major contribution in leading the market astray and exposing investors' investment to an endogenous risk. The agency theory suggests that the contractual relationship between agent (managers) and principal (shareholders) is prone to agency problems due to conflict of interest. When managers gain the incentive to put their interest ahead of investors, they are likely to control the company to obtain private benefits. Managers are often benefited from their control and possession of internal information. They may abuse their authoritative power to present a good performance, leading to information asymmetry.

Previous studies depicted two streams of investigation: what affects and effects of idiosyncratic risk. In the early stream, various studies have taken up the challenge of explaining the determinants of idiosyncratic risk. According to Abdoh and Varela (2017), higher product market competition increases idiosyncratic risk relative to systematic volatility. This competition primarily affects company-specific costs and operations rather than the entire industry. Companies with less diversified customers also experience higher idiosyncratic risk due to heavier reliance on few key customers, causing them to be more prone to market disruption. Information asymmetry resulting from aggressive earnings management also puts the company at higher specific risk (Rajpal & Jain, 2015). Due to the increasing opaqueness of accounting information, worsening earnings quality has led investors to trade more on noise than company information, causing stock returns to fluctuate (Rajgopal & Venkatachalam, 2011). When holding a particular stock is more costly to institutional investors, the idiosyncratic risk increases as the stock buy-sell rhythm is at a higher pace.

To reduce idiosyncratic risk, companies should look out to increase managers' competence as an intermediary to improve corporate transparency by disclosing high-quality information, leading to a better reputation and less information asymmetry. Companies with higher financial reporting quality are more likely to have less volatile cash flows, leading to stable valuation and lower idiosyncratic risk (Zhou, Xie, & Li, 2016). Another way is to

strengthen CEOs' executive power through their representation in the board committees to influence corporate strategies and risk to reduce the cognitive bias and conflict in the committee's strategic decision (Tan & Liu, 2016). Companies may also adopt a consistent hedging policy against their exposures to suppress idiosyncratic risk (Chng, Fang, Xiang, & Zhang, 2017) or increase disclosure to include non-financial information through corporate social responsibility (CSR) reporting to reduce information asymmetry (Chen, Hung, & Lee, 2018). Meanwhile, Hasan and Habib (2017a) suggested that social capital also reduces idiosyncratic risk, where companies headquartered in high social capital regions exhibit lower volatility of idiosyncratic return. In another study (Hasan & Habib, 2017b), they also suggested that raising uncertainty over information and cash flow affects idiosyncratic risk depending on the stages of the company life cycle. Idiosyncratic risk is greater in the introduction and decline stages and less in the growth and mature stages when compared to the shake-out stage.

An exploration of the latter stream has led to the notion that idiosyncratic risk affects at least four companies' focal points: stock returns, stock mispricing, cost of capital, and credit rating. First, concerning stock returns, the much-discussed anomaly of idiosyncratic risk suggests that stocks tend to have lower returns when the magnitude of idiosyncratic risk is greater (Ang, Hodrick, Xing, & Zhang, 2009). It contradicts the traditional asset pricing theory that investment with higher risk yields higher returns (Liu, Di Lorio, & De Silva, 2019) to compensate for the excess risks investors are willing to bear because investors are inherently risk-averse. This contradiction is well explained in the research of He and Zhou (2014), where the reference points used by investors have a significant impact on risk-return relations. If investors set their reference point at expected returns, they can view positive (negative) abnormal returns as gains (loses). Thus, stocks with positive (negative) abnormal returns may lead to a positive (negative) risk-return relation (Qu et al., 2018). Investors tend to avoid risk in the profit domain and build tolerance for risk in the loss domain, resulting in positive and negative idiosyncratic risk-stock returns relations, respectively (Qu et al., 2018; Vo et al., 2020).

Second, about mispricing, recent studies suggest that the association between idiosyncratic risk and the expected return of individual stock depends on the pricing of the stock: it is positive among undervalued stocks and negative among overvalued stocks (Zaremba, Czapkiewicz, & Bedowska-Sójka, 2017). Doukas, Kim, and Pantzalis (2010) claimed that higher idiosyncratic risk is attributable to greater mispricing. They argued that idiosyncratic risk would push the stock price away from its fundamentals, causing it to be traded more likely at market value than fair value. Duan, Hu, and McLean (2010) found that idiosyncratic risk limits arbitrage among short sellers because mispricing has made betting costly. Short sellers may benefit only if they bet correctly that the stock they sell is bound to underperform. Aabo, Pantzalis, and Park (2017) discovered that higher idiosyncratic risk contributes to higher mispricing, depicting an escalation in noise trading. It implies that investors' decisions have been distorted or that

information has been made so unreliable that investors choose to count on sentiment.

Third, with the cost of capital, Goyal and Santa-Clara (2003) found that opposing the traditional wisdom, idiosyncratic risk is relevant for asset pricing. Hence, managers may gain incentives to improve their company's quality of reporting to obtain a lower cost of capital (Rajgopal & Venkatachalam, 2011). Kim and Sohn (2013) found a positive association between idiosyncratic risk and the cost of equity capital. Kim and Sohn (2013) argued that this positive association is due to accrual and real earnings management (REM) activity that distort the reported earnings and decrease investors' expectations of future cash flow levels. This finding is in line with previous research, which concluded that disclosure policy and information quality lower the equity cost of capital. However, Cohen (2012) previously claimed that company-specific uncertainty regarding the estimation of future payoffs does not translate into a higher cost of equity capital. Additionally, Schober et al. (2014) found a positive association between idiosyncratic risk and cost of capital as a weighted average of the cost of equity and debt. They stated that more vivid company-specific risks increase the incentive for hedging and the expected cost of hedging and capital.

Fourth, about credit rating, Lin and Shen (2014) found a positive association between idiosyncratic risk and credit rating since companies are evaluated by credit risk rating agencies based on their ability to settle their liabilities and the overall credit risk. They argue that idiosyncratic risk increases the perception of credit rating agencies since it escalates the probability of contract violation. Credit rating agencies affirm the value of rating stability and accuracy by employing financial information generated by the issuers. It creates a perfect incentive for managers to engage in earnings management, especially when lower credit ratings and credit risks often lead to higher debt costs. Earnings management is an intended intrusion in the reporting process to deceive the external users of financial information for some private gain. Managers would manipulate earnings by an accounting method to meet investor or financial analysts' expectations and affect the stock price. Earnings management occurs for various reasons, including manipulating the stock market perceptions, increasing management compensation, avoiding regulatory intervention, and breaching loan covenants.

While idiosyncratic risk is associated with the many interests of financial information users, there are few direct investigations on how earnings management may affect the course of idiosyncratic risk in emerging markets. Previous studies regarding idiosyncratic risk and earnings manipulation in developed markets, including Chang, Wang, Chiu, and Huang (2015), found that idiosyncratic risk is positively related to real or accrual-based earnings manipulation activities. Mitra (2016) found a negative association between idiosyncratic risk and earnings quality. Kitagawa and Okuda (2016) found that high-quality public information reduces idiosyncratic risk. Domingues, Cerqueira, and Brandão (2016) found a positive association between earnings quality and idiosyncratic risk. Cerqueira

and Pereira (2018) found that poor earnings quality is associated with higher company-specific return volatility. Da Silva (2019) found that quality financial reporting helps reduce idiosyncratic crash risk.

Using mixed market samples, Chen, Huang, and Jha (2008) found that return volatility is enhanced by worsening earnings quality and dampened by heavier income smoothing and earnings management. Rajgopal and Venkatachalam (2011) found that deteriorating earnings quality is positively associated with rising return volatility. Chen et al. (2012) found that higher idiosyncratic return volatility is associated with worse information quality. Fan and Yu (2013) found a positive association between abnormal accruals and idiosyncratic risk. Alam, Liu, Liu, and Peng (2015) found that discretionary accruals are positively associated with idiosyncratic risk. Datta, Iskandar-Datta, and Singh (2017) found that idiosyncratic risk is positively associated with accrual-based earnings management.

Similar research includes Lin and Shen (2014) in emerging markets, who found that idiosyncratic risk increases the costs arising from accrual earnings management (AEM). Zhou et al. (2016) found a negative association between idiosyncratic risk and financial reporting quality. Salehi, Tagribi, and Farhangdoust (2018) found that earnings quality is positively associated with stock returns volatility. Wang, Chen, and Liu (2020) found that the quality of accounting information is positively correlated with idiosyncratic risk. Very few were found to use samples from Indonesia-listed companies (e.g., Asri, 2021, Firmansyah and Suhanda, 2021, who found that accrual anomaly escalates idiosyncratic risk).

Research on idiosyncratic risk in emerging markets like Indonesia is indispensable since capital markets in emerging economies have distinct characteristics from developed ones. First, in most emerging markets, Diamonte, Liew, and Stevens (1996) believed that systematic risk strongly influences the price of a security when the market risk and political risk are strong enough to estimate the return on assets. Less economic and political stability in emerging economies than in their developed counterparts may dampen policymakers' ability to regulate the capital market effectively. Second, the opportunity for investors to diversify their shareholdings in emerging markets may be limited because of the smaller market size, so there are fewer stock options to collect (Huang, Wald, & Martell, 2013). Therefore, conducting research using mixed samples and generalizing findings from developed markets to emerging markets can be misleading.

Idiosyncratic risk is closely related to earnings management. Higher idiosyncratic risk is generated from less transparent accounting information. The opaqueness of accounting information may arise from earnings management due to agent-principal conflict of interests. To account for earnings management, this research will employ AEM, REM, and fraudulent accounting (FRA) as independent variables (Dechow & Skinner, 2000; Gunny, 2005). This research suspects that these three manipulation activities may affect idiosyncratic risk since they create information asymmetry between managers and investors (Chen et al., 2012) and distorts investors' decision (Kim &

Sohn, 2013). Thus, the security price no longer reflects all existing information, putting arbitrage at risk. This condition can cause a price bubble that may unpredictably burst in the long run. Therefore, companies that engage in earnings manipulation are perceived as having a higher idiosyncratic risk, mainly due to the opaqueness of the company's future sustainability. One of the central issues in high-risk companies is insolvency and bankruptcy (Schober et al., 2014). Myopia often makes managers trade off the long-term sustainability for a short-term performance outlook.

AEM is a type of earnings management that focuses on management's discretionary accruals within Generally Accepted Accounting Principles (GAAP) (Dechow & Skinner, 2000; Gunny, 2005; Kim & Sohn, 2013). It causes no direct cashflow consequences, for example, by under-provisioning bad debt expenses and delaying asset write-offs (Roychowdhury, 2006). Some earlier studies suggested a positive association between AEM and idiosyncratic risk (Rajgopal & Venkatachalam, 2011; Chen et al., 2012; Alam et al., 2015; Chang et al., 2015; Mitra, 2016; Kitagawa & Okuda, 2016; Zhou et al., 2016; Cerqueira & Pereira, 2018; Da Silva, 2019; Asri, 2021; Firmansyah & Suhanda, 2021). Contrary to this view, Salehi et al. (2018) suggested that the stock return is neither affected by the intensity of discretionary accrual nor disclosure quality. Chen et al. (2008) argued that the idiosyncratic risk is less affected by the intensity of discretionary accrual and more by the volatility of companies' performance; thus, accrual earnings management is utilized to dampen the volatility of returns. Adding to this, Datta et al. (2017) also contended that managers manage earnings to deflate the "noisy" volatility of returns.

REM is undertaken to meet certain earnings thresholds and involves management action that deviates from normal business practices (Roychowdhury, 2006). Unlike AEM, REM affects cash flow and, in some cases, accruals. Roychowdhury (2006) detects real earnings manipulation by examining cash flow from operations (CFO), production costs, and discretionary expenses. There are few studies investigating how REM is associated with idiosyncratic risk (Lin & Shen, 2014; Francis, Hasan, & Li, 2014; Chang et al., 2015), with even fewer conducted using samples from emerging markets (Firmansyah & Suhanda, 2021). Different from Francis et al. (2014), Chang et al. (2015) and Firmansyah and Suhanda (2021), who found a positive association between REM and idiosyncratic risk, Lin and Shen (2014), using samples from Taiwan, suggested the opposite where the use of REM may lower company risk since auditors hardly discover real earnings management.

This research aims to investigate AEM, REM, and FRA to the extent of how they are associated with idiosyncratic risk. Empirical studies that incorporate simultaneous deployment of AEM and REM as determinants of idiosyncratic risk are few in the emerging markets, with almost none found using samples from Indonesia. Previous studies frequently focused on investigating the association between earnings quality and idiosyncratic risk, employing discretionary accruals but not REM (Chen et al., 2012; Alam et al., 2015; Zhou et al., 2016; Domingues et al., 2016; Wang et al., 2020) or studies

that employ REM but not AEM (Francis et al., 2014). Whereas REM affects current period earnings, thus deteriorating the role of earnings as an indicator of future cash flows (Kim & Sohn, 2013). Therefore, this research employs AEM and REM simultaneously in the context of idiosyncratic risk. The importance of this simultaneous test is because AEM and REM are substitutes for each other, and managers trade them based on their relative costs, level of supervision by regulators and auditors, and time available to manage earnings (Zang, 2011). The inconsistencies found among the empirically tested association between AEM, REM, and idiosyncratic risk are even more reasons to revisit this phenomenon.

On the other hand, FRA is another form of earnings management that involves GAAP violation (Dechow & Skinner, 2000; Gunny, 2005). When publicly announced, FRA imposes immense costs on specific companies and financial markets (Beneish, Lee, & Nichols, 2012). Hamilton, Hirsch, Rasso, and Murthy (2019) suggested that managers are less likely to make accounting choices that will cause their company to be identified as high risk. However, the recent economic shutdown triggered by the COVID-19 pandemic has fostered major disruptions in relative demands and organizational capital that increase the likelihood of fraud over the next few years due to the urge to present a good performance and conceal risk. Ibrani et al. (2019) explained that FRA might increase company value in the short term but cause it to plummet in the long term due to the violation of public trust. Companies with higher accounting irregularities or the probability of engaging in FRA experience lower expected returns (Beneish et al., 2012). Meanwhile, companies that have announced their involvement in FRA showed even more diminishing returns (Karajian & Ullah, 2021).

The major difference this research has compared to previous studies lies in incorporating FRA as one of the independent variables and CSR disclosure as moderating variable in idiosyncratic risk study, especially using samples from emerging markets. FRA was rarely examined as a determinant of idiosyncratic risk in previous studies. Thus, the direct association between FRA and idiosyncratic risk is paramount to be established. By doing so, this research attempts to capture that risk is related to the success of achieving performance benchmarks.

CSR disclosure has also never been employed as a moderating variable in idiosyncratic risk studies to the best of our knowledge. Therefore, the second objective of this research is to find evidence regarding the conjecture that CSR disclosure may weaken the association between earnings management and idiosyncratic risk. By doing so, this research may provide a different dimension from previous studies by providing empirical evidence regarding whether companies involved in earnings manipulation may reduce idiosyncratic risk by carrying out CSR disclosures. The growing demand for CSR disclosure suggests that outside stakeholders consider non-financial information when assessing company's overall performance. CSR disclosure allows the outside stakeholder to employ knowledge absent from financial information.

In Indonesia, public companies' obligation to disclose corporate social responsibility arises with enacting the decree of the Chairman of the Capital

Market and Financial Institution Supervisory Agency (Bapepam-LK) No. KEP-134/BL/2006. However, the mandatory disclosures are still limited to the description of activities and costs incurred as an integral part of the annual report. In later development, the enactment of KEP-431/BL/2012 (to replace KEP-134/BL/2006) further clarified that the discussion on corporate social responsibility should include policies, types of programs, and costs incurred in regards to the: 1) environment; 2) employment, health, and safety practices; 3) social and community development; and 4) product responsibility. Public companies can also undertake separate reporting for CSR disclosure (e.g., CSR report, sustainability report).

The most recent regulation is the Financial Services Authority (OJK) Regulation No. 29/POJK.04/2016 emphasizes the inclusion of environmental responsibility to complement the existing CSR disclosure. Unlike previous regulations, there is no minimum requirement for disclosure. Many detailed disclosure items, measurements, and other quality parameters remain unstandardized. Public companies are allowed to adopt the most suitable standards for the company. According to Wuttichindanon (2017), some of these standards can be retrieved from the Securities and Exchange Commission (SEC), the United Nations Global Compact (UNGC), the Organization for Economic Cooperation and Development (OECD), the International Organization for Standardization (ISO), and the Global Reporting Initiative (GRI).

Various theories such as legitimacy, stakeholder, and resource-based view have reasoned the inclusion of CSR disclosure in the association between earnings management and idiosyncratic risk. The legitimacy theory views CSR disclosure as a tool to manage public perception (Cho, Roberts, & Patten, 2010) and gain legitimacy of conduct so that the company can be less vulnerable to both internal and external shocks. The stakeholder theory views CSR disclosure as means to address stakeholders' demand for more transparency and accountability (Brown, 2009; Spence, 2009), leading to the improvement of the company-stakeholder relationship. Meanwhile, from the theoretical lens of the resource-based view, CSR disclosure can be used to present the competitive advantage of a company through tangible and intangible assets, including employees' capabilities, skills, culture, and reputation, as these are difficult to copy or substitute (Mahmood et al., 2020). However, in the context of investor protection that this research proposes, the stakeholder theory sheds more light on wider stakeholders' control of the company through disclosing financial and non-financial information (Rupley, Brown, & Marshall, 2017). The stakeholder theory views CSR disclosure as means to address stakeholders' demand for more transparency and accountability (Brown, 2009; Spence, 2009). According to Scholtens and Kang (2012), CSR disclosure increases investor protection and decreases manager opportunism to engage in earnings management.

The *stakeholder theory* demonstrates that the company is responsible to wider stakeholders by carrying out social disclosure. Corporate CSR should go beyond maximizing profits for the benefit of shareholders and for the interests of broader

stakeholders, including all parties who have a relationship or claim to the company. CSR is a company's representation as a responsible, conservative and sustainable entity. Environmental corporate social responsibility (ECSR) helps obtain a favorable market reaction and enhances a company's reputation. Su, Swanson, Chinchanchokchai, Hsu, and Chen (2016) examined companies in emerging markets and found that those participating in CSR activities exhibited increased revenue, operating performance, and better reputations.

Previous research has simultaneously found that CSR disclosure is negatively associated with idiosyncratic risk (Jo & Na, 2012; Kim, Li, & Li, 2014; Hockerts, 2015; Chen et al., 2018; Kong, Pan, Sun, & Taghizadeh-Hesary, 2020; Tzouvanas, Kizys, Chatziantoniou, & Sagitova, 2020). This negative relation is possibly derived from CSR disclosure's insurance-like protection, improving risk management, increasing information transparency, providing market appeal to customers, or easing access to financial markets (Jo & Na, 2012). In a competitive market, CSR disclosure may also elevate companies to be perceived as having higher performance (Hockerts, 2015). Kim et al. (2014) claimed that CSR disclosure might improve corporate governance, as managers operating in a strong CSR-oriented corporate culture show a lower tendency to conceal bad news, leading to lower stock price crash risk. CSR disclosure may decrease information asymmetry and improve the relationship with stakeholders, allowing the re-examination of uncertainties and re-alignment of business activities to minimize unfavorable events (Chen et al., 2018). In line with that, Kong et al. (2020) also explained that CSR disclosure might effectively reduce information asymmetry and promote investors' consistent understanding of the stock price, thus reducing companies' idiosyncratic risk. Meanwhile, Tzouvanaz et al. (2020) added that CSR disclosure might mitigate future costs (e.g., litigation cost, supply chain disturbance, operation disruption) by bringing environmental and social concerns into business decisions, making the company more attractive to investors' perspective.

To control for other company-specific characteristics and to increase the robustness of the research model, this research employs several control variables derived from the company performance, which include company size (*SIZE*), financial leverage (*LEV*), profitability (*ROA*), capital assets intensity (*CAPITAL*), asset turnover (*AT*), asset growth (*A\_GROWTH*), sales growth (*S\_GROWTH*), cash flow volatility (*CFOVOL*), liquidity (*CURRENT*), cost of goods sold (*COGS*), and derived from the stock performance which includes momentum (*MOM*), market risk (*BETA*), shares turnover ratio (*TURN*), price-earnings ratio (*PER*). These control variables are chosen based on their significant effect and their ability to better explain the idiosyncratic risk dynamics.

*SIZE* depicts a company's ability to manage idiosyncratic risk relative to its wealth. Alam et al. (2015), Tzouvanaz et al. (2020), Wang et al. (2020), and Kong et al. (2020) found a negative association between company size and idiosyncratic risk. Larger companies are likely to follow analysts, experience more intense scrutiny, be audited by reputable

firms, and possess more resources to manage idiosyncratic risk. *LEV* depicts whether or not the company is experiencing certain financial distress. Cerqueira and Pereira (2018), Chen et al. (2018), Tzouvanaz et al. (2020), and Wang et al. (2020) found a positive association between a company's level of debt and idiosyncratic risk. High leverage implies that stakeholders bear a high amount of cash flow risk and that the company is more prone to financial distress. Therefore, volatility of the stock return increases. *ROA* takes into account the company's profitability. Kitagawa and Okuda (2016), Datta et al. (2017), Chen et al. (2018), and Tzouvanaz et al. (2020) found a negative association between a company's ability to generate profit and idiosyncratic risk. Growing profitability reduces future cash flow variations and uncertainty, thus increasing investors' willingness to invest.

*CAPITAL* captures the company's need for financing and scrutiny from other capital providers. Cohen (2012) found a negative association between *CAPITAL* and idiosyncratic risk in an earlier study. More capital-intense companies will improve their information quality due to their need for financing and increased scrutiny. *AT* depicts how effectively companies in using their asset to generate sales. Alam et al. (2015) found a negative association between *AT* and idiosyncratic risk. Higher *AT* implies better selling performance and more efficient utilization of assets, thus sending good news to investors. *A\_GROWTH* capture investors' reaction to changes in total asset. In an earlier study, Song (2015) found that *A\_GROWTH* is positively associated with idiosyncratic risk. Companies experiencing rapid asset growth by raising external financing and making capital investments and acquisitions subsequently have poor operating performance and disappointing stock returns due to over-investments by corporate managers and an excessive-extrapolation bias by investors when they value stocks based on companies' past growth.

*S\_GROWTH* captures investors' reactions toward a sudden drop or raise in operating performance. Rajgopal and Venkatachalam (2011) and Cohen (2012) found that *S\_GROWTH* is positively associated with idiosyncratic risk. Higher sales growth may indicate deteriorating earnings quality driven by the company's need to secure future opportunities. *CFOVOL* captures investors' responses toward volatility of cash flow. Rajgopal and Venkatachalam (2011), Mitra (2016), Kitagawa and Okuda (2016), Datta et al. (2017), Cerqueira and Pereira (2018), and Da Silva (2019) found a positive association between *CFOVOL* and idiosyncratic risk. As current cash flow becomes more volatile, expected future cash flow becomes more uncertain, indicating companies' shortcomings in managing their aggregate risk. *CURRENT* consider investors' response toward the companies' liquidity as depicted by their ability to settle short-term obligations. Aiyabei, Tobias, and Macharia (2019) found a negative association between a company's liquidity and idiosyncratic risk. More liquid companies experience fewer financial constraints and should use their resources to improve performance. *COGS* represent the proportion of production cost incurred by the company for every dollar of sales. In an earlier study, Gunny (2005) suggested that *COGS* is negatively associated with company risk. An excessive reduction of *COGS*

lowers the company's future performance due to investors' suspicion of manipulation.

*MOM* captures arbitrageurs' behavior in response to the stock price movement within a certain period. Qu et al. (2018), Vo et al. (2020), and Ali, Hasan, and Ostermark (2020) found a positive association between the stock returns momentum and idiosyncratic risk. As momentum deviates further from zero, the stock volatility increases due to market adjustment. *BETA* captures the possibility of losses due to external factors that affect the overall performance of investments in the financial markets. Lin and Shen (2014), Wang et al. (2020), and Ali et al. (2020) found a positive association between market risk and idiosyncratic risk. The market and idiosyncratic risks interact and create a timely adjustment to the stock price. Thus, higher idiosyncratic risk implies the company's lack of ability to adjust to external shock quickly. *TURN* takes into account the crowd herding behavior of investors. Chen et al. (2018) and Wang et al. (2020) found a positive association between *TURN* and idiosyncratic risk. Stocks with higher trading turnover experience higher price volatility due to a consecutive act of buying and vice versa. *PER* captures the keep-changing market valuation of a stock. Liu et al. (2014) and Firmansyah, Sihombing, and Kusumastuti. (2020a) found a negative association between *PER* and idiosyncratic risk. Investors' willingness to pay an extra price for a particular stock indicates that the stock is less risky to hold.

The contribution of this research is threefold. First, this research is a pioneer in simultaneously employing AEM, REM, FRA, and CSR disclosure in an idiosyncratic risk study. Therefore, this research contributes to filling the existing gap in the literature, especially regarding emerging markets. Second, this research raises awareness among stakeholders such as investors, analysts, regulators, and policy makers of the detrimental impact of earnings management and the importance of investors' protection. Third, this research also sheds more light on idiosyncratic risk significance in investors' portfolios since it is too costly to ignore. The distinct characteristics of the capital market in emerging economies have called for more research on idiosyncratic risk. How managers may "manage" idiosyncratic risk should be a topic of high significance since such risk is associated with the many interests of financial information users.

This research is organized as follows: Section 2 elaborates on the theoretical framework and hypotheses development; Section 3 describes the data, sample, and methodology employed; Section 4 contains results and descriptive statistics analysis; Section 5 provides discussions on the hypotheses testing results; Section 6 concludes this research and outlines the practical implications of our findings.

## 2. THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

### 2.1. Market efficiency theory

An efficient market, in essence, is an ideal condition where the stock price reflects all available information in the market. Thus, the trading mechanism will drive stock prices to shift continuously towards a new equilibrium. In this

ideal market, information is treated like commodities that mean the same to investors. This theory is based on the notion that, on average, competition will cause the full effects of new information on intrinsic values to be reflected "instantaneously" in actual prices.

In an efficient market, supposedly, stock prices move in a random pattern since information is constantly renewed. Thus, it is very difficult or even nearly impossible for investors to obtain abnormal returns consistently through arbitrage in the securities market, causing the actual returns to differ from the expected returns. In this condition, information is treated as a highly-priced commodity by investors. Thus, average investors demand that publicly available information have a high degree of reliability and relevance through audit and supervision by the board and regulators, albeit abnormal returns are more likely for investors possessing a competitive advantage from insider information.

One important notion is that market efficiency theory does not claim that stock prices are always "correct", but it says that stock prices are not mispriced in a "systematic" or predictable way. This implies that, even when the market is truly efficient, stock prices may go far from reflecting the company's fundamentals if publicly traded information is poor. The weak form of the market suggests that prices fully reflect the information implicit in the historical cycle of past prices. The semi-strong form suggests that prices reflect all relevant publicly available information. In contrast, the strong form suggests that information known to any participant is reflected in market prices.

Another important construct of this theory is the rational behavior of investors. For all available information to form the intrinsic value of shares, investors as users of information must always be rational and unbiased. Rational investors can quickly and accurately assess and optimize risk/reward outcomes and constantly seek profit opportunities. It is the very efforts of such investors to make money that led to market efficiency. However, when information asymmetry occurs, the stock price no longer reflects all relevant information, causing it to move further away from its fundamentals and be mispriced. Among other information available to the public, accounting information possesses both explanatory and predictive features toward the company's current and future conditions through stock value, returns, and risk.

The distortion of accounting information allows price deviation to occur. According to Doukas et al. (2010), persistent price deviations from fundamental values would imply arbitrage risk, suggesting that expected rates of return may depend not only on fundamental risk, as captured by a standard asset pricing model, but also on asset mispricing that varies with idiosyncratic risk. Savvy investors tend to detect this kind of anomaly and remain rational. In practice, though, many investors often make irrational decisions driven by emotions (fear and greed), so biased behavior often appears, such as herding (behavior following other investors), overconfidence, loss aversion, and familiarity. Thus, the trading of the stock is based more on noise rather than company-specific information. The company's real performance's opacity has led to stock price volatility and increased company-specific risk.

## 2.2. Agency theory

Agency relationships are contracts between agents and principals. The incentives, monitoring devices, bonding, and other forms of social control undertaken to minimize agency costs compose some elements of the contract (Shapiro, 2005). This contract is dyadic, where both agents and principals are entitled to certain rights and bound to certain obligations reciprocally. The principal is the owner of economic resources, while the agent is the party who agrees to assume duties under the principal's interest (Jensen & Meckling, 1976). In a company, investors (principal) are obliged to transfer some of their wealth to the agent for a sum of profit from their investment, which constitutes managers' (agents) obligation to maximize investors' wealth in return for certain compensation. The optimal relationship or "Pareto-optimality" of the agent-principal contract occurs when neither party can enhance their wealth at the expense of the other. However, when the agent-principal conflict of interest occurs, agents as the real entity who runs the company are often benefited by more possession of inside information than the principal. Thus, agency cost may occur to ensure "Pareto-optimality" by narrowing the agent-principal interest gap or ensuring that the agent puts forth the agreed-upon effort opposite to shirking.

The agency cost is a coping mechanism against the agency problem. Agency problem occurs when agents are motivated to go against the principal interest to obtain private benefits. According to Shapiro (2005), these benefits can be monetary or as a form of self-protection from risk (e.g., to avoid being viewed as incompetent). They fueled the agent's opportunism that put both shareholders' investment and the company at risk. Opportunism may lead managers to engage in detrimental practices, such as performance manipulation, embezzlement, and fraud. Thus, the agency problem implies greater internal risk within a company. Agents as self-determined individuals engage in self-caused autonomous action in response to basic psychological needs and autonomous motivation and contextual and environmental challenges. However, owning resources should naturally put the principal in power. In reality, when principals seek out agents for their expert knowledge, when principals are one-shutters and agents repeat players when principals are unexpectedly foisted into a new role with no time or life experience to formulate preferences, let alone a contract or monitoring strategy, the asymmetry of power shifts from the principal to the agent (Shapiro, 2005).

There are two important propositions regarding agency cost added to this theory by Eisenhardt (1989). First, when the contract between the principal and agent is outcome-based, the agent is more likely to behave in the principal's interest. This proposition was made based on Jensen and Meckling's (1976) explanation of how increasing managers' ownership decreases managers' opportunism. Second, when the principal has information to verify agent behavior, the agent is more likely to behave in the principal's interest.

There are two types of agents, the risk-averse and the risk-tolerant, contributing to differences in agency problems and agency cost. The rationale for

the risk-averse agent is that they can not diversify their employment, unlike principals who can diversify their investment (Eisenhardt, 1989). This agent tends to be more reluctant to engage in a risky project that may jeopardize the company's outcomes. However, this over-carefulness often costs companies a more dynamic growth from risky yet higher returns projects, none like what the investors intended. Therefore, agency cost occurs to drive these managers out of their comfort zone. Meanwhile, the risk-tolerant or risk-seeking agents are more appealed to high-risk-high-returns projects. However, they sometimes seek to maximize their self-interest ahead of the principal. Therefore, agency cost occurs to monitor and re-align the self-interest of such an agent (e.g., increase performance-based compensation).

Agent and principal should not only be interpreted as a solitary role since an agent can also act as a principal and vice versa. As a nexus of contract (Jensen & Meckling, 1976), the company may employ a CEO as an agent of investors and a principal inside the corporation. Shapiro (2005) viewed that companies are comprised of multiple principals with differences in demands and multiple agents that respond differently to incentives and risk. He added that the existence of multiple principals and agents sometimes increases the asymmetry of information and the difficulties in monitoring, albeit also helping to correct the imbalances. For example, in several company frauds in the past, a systematic financial crime may occur because multiple agents corroborate the scheme. In contrast, it also takes multiple agents to put the company back on track.

## 2.3. Stakeholder theory

Stakeholder theory initially arose to challenge the dominion of shareholders' interest on the company-stakeholder relationship. This theory re-affirms how important it is for companies to maintain relationships with stakeholders other than shareholders. The very expression "stakeholder" has become so widespread today that many pundits have forgotten that it first arose in the USA as a liberal reaction to the priority being bestowed upon financial value led by the figure of the shareholder.

In contrast, stakeholder theory suggests that managers of companies have obligations to some groups of stakeholders. Stakeholders may include suppliers, customers, stockholders, employees, communities, political groups, governments, media, etc. Stakeholder theory was originally constructed on the premise that if a company wants to be effective, it has to manage the relationship that can affect or be affected by achieving its purposes (Freeman, 1984). Three dimensions of viewing stakeholder theory. First, instrumental stakeholder theory assumes that if managers want to maximize the objective function of their company, they must take stakeholder interests into account. Second, descriptive stakeholder theory is about how managers, companies, and stakeholders interact. Third, normative stakeholder theory seeks to prescribe how managers and companies should satisfy the demands of their stakeholders.



Freeman (2015) suggests that companies analyze their business on three coherent levels to bring stakeholder theory into practice. First, the rational level concerns where the company, as a whole business, fits into the entire environment. At this level, the company needs to accurately map what role it plays in the overall context of the business environment, identify any parties with stake, and describe the nature of the relationship between the company and these parties. Second, the process level concerns how the company relates to its environment as standard operating procedures and routine management processes. In this context, standard operating procedures represent the organizational processes to fit with the external environment to manage stakeholder relationships. Third, the transaction level concerns how the company executes actual transactions, deals, or contracts with individuals who have a stake. The nature of the behavior of organizational members and the nature of the goods and services being exchanged are key ingredients in successful organizational transactions with stakeholders. Freeman (2015) added that successful transactions with stakeholders are built on understanding the legitimacy of the stakeholder and having processes to address their concerns routinely. The stakeholder theory emphasizes the win-win relationship between the company and its stakeholders for the long-term sustainability of both sides.

The stakeholder theory views CSR disclosure as means to address stakeholders' demand for more transparency and accountability (Brown, 2009; Spence, 2009), leading to the improvement of the company-stakeholder relationship. The stakeholder theory emphasizes wider stakeholders' control of the company through disclosing financial and non-financial information (Rupley et al., 2017). CSR disclosure reduces asymmetric information and signals that companies emphasize their social and environmental practices (Tzouvanas et al., 2020). More effective communication due to lower information asymmetry further restricts the potential for managerial opportunism and builds stakeholder trust (Pérez, 2015). It can also help prevent companies from engaging in damaging and costly practices that contribute to social conflict, litigation costs, labor strikes, and reputational costs. Koh, Qian, and Wang (2014) found that companies engaging in CSR disclosure are less likely to face lawsuits. It can also help to improve governance quality within the company. Schuler and Cording (2006) claimed that CSR engagement helps companies appeal more to customers, increasing sales. Guenster, Bauer, Derwall, and Koedijk (2011) confirmed that good CSR performance attracts investments. Not only does the fulfillment of CSR exert positive effects on operating and financial performance, but it further lowers operational costs, creates new business models, increases management efficiency, and increases research and development (R&D) budgets as well as opportunities for growth in the future (Chen et al., 2018).

## 2.4. Hypothesis development

Based on the market efficiency theory, stock prices should reflect all market and company-specific information. Profit engineering causes information

asymmetry between corporate managers and investors. It causes stock prices to reflect noise more than company-specific information, indicating higher idiosyncratic risk (Cerqueira & Pereira, 2018). The stock price loses its relevance as an indicator of its fundamentals. Thus, companies that are proven to be involved in discretionary accruals are perceived to have a higher idiosyncratic risk because they are willing to go the extra mile, bearing its relative cost, to conceal the company-specific risk.

Idiosyncratic risk refers to individual stock volatility arising from specific shocks, referring to company-specific uncertainty. Uncertainty may occur when investors experience difficulties assessing the real condition of a company due to the poor quality of its financial information. Accrual-based earnings management is one of the most common methods used by managers to alter financial information for private benefit. It employs discretionary accruals by exploiting managers' misuse of GAAP judgment, leading to poor quality of reported earnings. The intensity of discretionary accruals is often employed to measure earnings quality. The higher intensity of discretionary accruals lowers earnings quality and deteriorates the information environment (Cerqueira & Pereira, 2018). Chen et al. (2012) also found that managerial discretion, such as discretionary accruals and pre-managed earnings, significantly increases return volatility. Alam et al. (2015) added that discretionary accruals lower earnings quality and increase stock return volatility. In this regard, the financial report is losing its relevance and raises uncertainty. Cerqueira and Pereira (2018) explained that the negative association between earnings quality and company-specific risk occurs because information uncertainty has led investors to trade based on noise more than the company-specific information. Poor earnings quality has been proven to encourage an increase in idiosyncratic risk since the accounting information presented by the company is no longer relevant for estimating expected return from future cash flow and the company's sustainability. One of the central issues in high-risk companies is insolvency and bankruptcy (Schober et al., 2014).

The agency theory suggests that the existence of an agent-principal conflict of interest creates agency cost. Investors' reliance on financial information, either to assess investment performance or to determine appropriate compensation for managers' performance, has become the perfect incentive for managers to engage in earnings management activities, leading to higher company-specific risk. Compensations, as measured by performance or in the form of stock options, have been shown to increase the motivation of managers to manipulate corporate accounting information, as in the case of Enron. Bergstresser and Philippon (2006) presented evidence that high accruals are employed in companies where CEOs' compensation is tied to the value of stock and option holdings.

Compared to REM, AEM is less time invested in implementation since it only involves discretionary accounting under GAAP. AEM can be undertaken at the end of the year when it becomes clearer that targets will not be met. Managers employ discretionary accruals to shift earnings over time. The distinct harm that AEM may do to both

company and investors is that last year's manipulations are brought to the next years due to the continuum characteristics of financial reports. Therefore, AEM contributes to a long-term risk of earnings manipulation (e.g., "big bath" restructuring charges and "cookie jar" reserves). Thus, the hypothesis in this study is as follows:

*H1: Accrual earnings management is positively associated with idiosyncratic risk.*

Stock prices should reflect all relevant market and company-specific information in an efficient market. However, like AEM, REM activity makes stock prices reflect noise more than company-specific information, leading to higher idiosyncratic risk (Cerqueira & Pereira, 2018). The excessive use of REM raises market suspicion and leads to a timely downward price adjustment before the build-up of crash pressure (Francis et al., 2014). Investors may consider the redundancy of the cash flow information reported in their investment decisions. When investors start to worry about a company's actual cash flow in estimating their expected return, they can discount this uncertainty to the stock price leading to higher volatility.

Idiosyncratic risk arose from company-specific complexities, including management policy on the company-specific issue such as finance and operation strategy. It implies that if an earnings management can alter the course of operation strategy, it may affect idiosyncratic risk. Unlike AEM, REM changes the company's underlying operations (Gunny, 2005). It affects cash flow and, in some cases, accruals. It includes all manipulation of real activities (e.g., sales, production, financing, and investment activities) throughout the accounting period to distort reported earnings, including altering the scale and timing of real activities in such a way that a specific earnings target can be met (Kim & Sohn, 2013). Therefore, REM distorts the fundamental of the business, leading to company-specific operational risk.

For investors, the main concern regarding REM practice is that it is more difficult to understand and easier to conceal as a reasonable operating strategy instead of being detected as an earnings management by boards, auditors, and regulators (Kim & Sohn, 2013). Moreover, REM activities are undertaken during the year, and after the fiscal year-end, managers fine-tune their accrual accounts based on the outcomes of real activities manipulation (Zang, 2011). Therefore, the sequential nature of REM and AEM can be designed to reduce performance volatility throughout the year, masking the cut-off of the scheme that is important to differentiate REM from the reasonable business strategy. REM's nature has made it harder for the board and internal audit committee to carry out financial supervision, thereby increasing the potential for management's misuse of its assets. This leads investors to perceive that companies engaging in REM conduct worse governance than appeared, increasing the company-specific risk.

Several previous studies have found that companies engaging in REM experience more idiosyncratic risk (Francis et al., 2014; Chang et al., 2015) because distortions in operations and financial statements make investors question the management intentions and performance of the company. The agent should work in the principal's interests, but should agents gain the incentive to put

their interests ahead of principals, they are willing to jeopardize the long-term sustainability for the short-term performance outlook. For example, the principals desire sustainable long-term growth. At the same time, agents motivated by greed want to maximize their performance-based compensation unrightfully or avoid being viewed as incompetent when the company shows volatile results. REM put the company at risk by allocating the company's future resources for present good performance instead of long-term sustainable operation. In undertaking REM, managers usually avoid losses by engaging in overproduction to reduce the cost of goods sold (COGS), offer price discounts to boost sales temporarily, and aggressively reduce discretionary expenditures to improve margins. Therefore, investors perceive companies engaging in REM as having less cash flow than reported, potentially increasing the company-specific risk such as illiquidity and bankruptcy. Thus, the hypothesis in this study is as follows:

*H2: Real earnings management is positively associated with idiosyncratic risk.*

Previous scandals have shown that several companies engaging in FRA have seen their stocks price plummet in a short period (e.g., Enron, WorldCom, and Toshiba). It indicates that FRA is heavily subject to public scrutiny and causes volatility in the stock price. The scandal has altered the supply and demand of that particular stock in the capital market, causing it to move to a new equilibrium reflecting all available information in the market. Companies with higher accounting irregularities or the probability of engaging in FRA experience lower expected returns (Beneish et al., 2012). Meanwhile, companies that have announced their involvement in FRA showed even more diminishing returns (Karajian & Ullah, 2021).

Idiosyncratic risk is the volatility of stock returns beyond systematic risk, reflecting the unique risk of companies (Kong et al., 2020). Therefore, a company's specific risk, such as FRA, should also contribute to higher idiosyncratic risk. FRA is another form of earnings management that involves accounting choices that violate GAAP, such as revenue recognition before criteria are met, recognition of fictitious sales, inflating inventory by recording fictitious inventory, and backdating sales invoices (Dechow & Skinner, 2000; Gunny, 2005). FRA is an abusive earnings management (Dechow & Skinner, 2000), implying the extraordinary degree of violation of GAAP and investors' trust.

Based on agency theory, the relationship between the principal and agent is a contractual relationship that binds both parties with certain rights and obligations. In a company, investors (principal) are obliged to transfer some of their wealth to the agent for a sum of profit from their investment, which constitutes managers' (agents) obligation to maximize investors' wealth in return for certain compensation. In that context, fraudulent accounting is a tool for managers (agents) to meet the expectation of investors (principals). However, investors perceived the managers' decision to engage in fraudulent accounting as a reflection of their incompetence, which may lower the expected return from their investment, making the stock less appealing, especially to risk-averse investors. According to Schober et al. (2014), the higher

idiosyncratic risk may result from asymmetric information concerning the agent's performance, when volatile results could be misinterpreted as a lack of effort or incompetence.

Hamilton et al. (2019) suggested that managers are less likely to make accounting choices that will cause their company to be identified as high risk since the trust of outside stakeholders, especially investors, also relies on the company's ability to appear ethical, conservative, and trustworthy in their accounting practices. This implies that managers understand the cost of violating investors' trust by conducting FRA. FRA is very expensive to fail due to public scrutiny, litigation cost (federal fines, legal fees, etc.) and reputational cost that may never recover. Thus, why do managers turn to FRA when other earnings management such as AEM and REM are available. FRA provides wider accounting choices and more flexibility than AEM because it may conjure non-existing transactions arbitrarily. At the same time, REM is probably too expensive to undertake by a company already cash and resource-constrained. Thus, FRA is probably employed when the severity of the company-specific problem or the magnitude of managers' ambition is no longer coverable by AEM and REM.

According to Beneish (1999), earnings manipulation is more likely to occur when companies' prospects are poor, present performances are far from targets, and managers have higher incentives to engage in earnings management. Thus, investors may turn away from presuming that the company conceals greater risk and start to discount the risk into the stock price. The rationale is that companies engaging in FRA might conceal risk even greater than the cost of such a scheme ever comes to the surface. This notion quickly escalates the holding cost of particular stock issued by a company that is potentially or has been proven to engage in FRA. The act of investors who collectively give up their shareholdings in a short period contributes to the sudden decline of stock price and increasing volatility.

*H3: Fraudulent accounting is positively associated with idiosyncratic risk.*

The stakeholder theory views CSR disclosure as means to address stakeholders' demand for more transparency and accountability (Brown, 2009; Spence, 2009), leading to the improvement of the company-stakeholder relationship. When communication between the company and outside stakeholders improves, information asymmetry declines as more information flows beyond accounting information. The stakeholder theory also suggests wider scrutiny from various stakeholders to prevent companies from engaging in detrimental practices and reduce manager opportunism.

The most notable relation between AEM and idiosyncratic risk is poor earnings quality and mispricing, which may increase stock price volatility sequentially. Poorer earnings quality increases company-specific risk due to the opaqueness of financial reports that should have provided important information to be considered by investors in their investment decisions. As accounting information gets more distorted, it loses relevance and drives investors to trade based on noise more than company information. Noise trading is among the reasons why a stock can be mispriced far away

from its fundamentals, leading to higher idiosyncratic risk (Cerqueira & Pereira, 2018).

Asymmetric information arises when the agent-principal conflict of interest occurs. Investors' reliance on financial information, either to assess investment performance or to determine appropriate compensation for managers' performance, has become the perfect incentive for managers to engage in accrual earnings management activities, leading to higher company-specific risk. Compensations, as measured by performance or in the form of stock options, have been shown to increase the motivation of managers to manipulate corporate accounting information, as in the case of Enron. Bergstresser and Philippon (2006) presented evidence that high accruals are employed in companies where CEOs' compensation is tied to the value of stock and option holdings.

To control and monitor managers' discretions, wider scrutiny from various stakeholders can be involved through CSR disclosure. It contributes to aligning managers' ethics with the social expectation of stakeholders (Agudelo, Jóhannsdóttir, & Davidsdóttir, 2019) and emphasizes accountability and transparency beyond financial reports (Deegan, 2014). Companies may demonstrate ethical commitment through philanthropic contributions and channel their resources and expertise to benefit society by employing minorities, caring for the environment, and reducing waste. Thus, companies that undertake CSR disclosure and are more socially responsible would be less inclined to manage earnings. CSR disclosure reduces asymmetric information and signals that companies emphasize their social and environmental practices (Tzouvanas et al., 2020). More effective communication due to lower information asymmetry further restricts the potential for managerial opportunism and builds stakeholder trust (Pérez, 2015). It can also help prevent companies from engaging in damaging and costly practices that contribute to social conflict, litigation, labor strikes, and reputational costs. Koh et al. (2014) found that CSR disclosure can help a company reduce the probability of facing lawsuits. It can also help to improve governance quality within the company. More socially and environmentally responsible companies are more efficient, enjoy increased visibility, reduce operational costs, and develop strong bonds with ethical investors, employees, consumers, and government (Jones, 1995). Therefore, a positive impression is more likely to emit from companies that disclose their CSR than those that do not. Guenster et al. (2011) confirmed that investors prefer to invest in companies with good CSR performance.

In his study, Tzouvanas et al. (2020) found that CSR disclosure heterogeneously reduces idiosyncratic risk, emphasizing asymmetric information being more costly than more disclosure. Kong et al. (2020) claimed that CSR disclosure significantly reduces idiosyncratic risk since increasing investment information transparency alleviates information asymmetry. Meanwhile, Kim et al. (2014) suggested that CSR performance lowers future crash risk. If the stock price reflects all available information, then the information contained within CSR disclosure would have been reflected as well. *Ceteris paribus*, companies that

exert more good news should've been able to maintain their stock price better than those that do not. A sudden drop in stock price is less likely for companies perceived to be socially responsible, commit to a high standard of transparency, and engage in less bad news hoarding.

*H4: Corporate social responsibility disclosure weakens the positive association between accrual earnings management and idiosyncratic risk.*

The stakeholder theory emphasizes wider stakeholders' control of the company through disclosing financial and non-financial information (Rupley et al., 2017). This wider control helps to improve governance, prevents companies from engaging in detrimental practices, and reduces manager opportunism. Companies that can manage the interests of their stakeholders well are less likely to engage in costly conflict, thus, more likely to sustain long-term operations. As CSR disclosure reflects, companies that are more responsible and caring can appeal to the customer and the market. It contributes to elevating revenue performance.

The most notable relation between REM and idiosyncratic risk is governance issues and expected future cashflow uncertainty. The excessive use of REM raises market suspicion and leads to a timely downward price adjustment before the build-up of crash pressure (Francis et al., 2014). REM has raised the question of the manager's intention and the quality of governance within the company since REM, in nature, is harder to detect than AEM. The use of REM also creates uncertainty on how much cash flow can be expected from the company's operation as opposed to the reported figures because REM changes the company's underlying operation. As these issues arise, investors may discount the uncertainty in the stock price, leading to increased volatility.

A company is a nexus of a contract between principal and agent (Jensen & Meckling, 1976), who assume duties under the principal's interest. However, should agents gain the incentive to put their interest ahead of principals, they are willing to jeopardize the long-term sustainability for the short-term performance outlook. For example, the principals desire sustainable long-term growth. At the same time, agents motivated by greed want to maximize their performance-based compensation unrightfully or avoid being viewed as incompetent when the company shows volatile results. REM put the company at risk by allocating the company's future resources for present good performance. If business operations are to sustain, all available resources need to be allocated long-term instead of myopically short-term.

Companies may increase their corporate value through CSR-oriented corporate governance policies and management and operational strategies (Chen & Lee, 2017). CSR disclosure contributes to aligning managers' ethics with the social expectation of stakeholders (Agudelo et al., 2019) and emphasizes accountability and transparency beyond financial reports (Deegan, 2014). Lower information asymmetry helps build stakeholder trust by refraining the potential of managerial opportunism (Pérez, 2015). Exercising CSR helps bridge better interaction between the company and wider stakeholders, allowing it to re-align its operating strategies, increasing profits and capital expenses.

Hockerts (2015) further explained that if a company integrates its business activities with a complete CSR-oriented strategy, it may reconstruct stronger relationships with stakeholders, increasing profitability and lowering operating risks. The role of CSR in reducing the build-up stock price crash pressure is even more paramount under weak governance mechanisms, such as monitoring by boards or institutional investors (Kim et al., 2014).

Previous studies have repeatedly suggested that companies experienced increased revenue performance and value through CSR reinforcement. Schuler and Cording (2006) stated that a company could appeal more to consumers through CSR engagement, improving revenue performance. Additionally, Guenster et al. (2011) confirmed that companies with better CSR performance are more appealing for investments. Su et al. (2016) found that, in emerging markets, companies participating in CSR activities emitted better reputations and exhibited increased revenue and operating performance. Therefore, it seems that not only does the fulfillment of CSR exert positive effects on operating and financial performance, but it further increases management efficiency, lowers operational costs, creates new business models, increases R&D budgets as well as opportunities for future growth (Chen et al., 2018). Jo and Na (2012) further confirmed that CSR participation could lower company risk and strengthen risk management.

If the stock price reflects all available information, then the information contained within CSR disclosure would have been reflected as well. *Ceteris paribus*, companies that exert more good news should've been able to maintain their stock price better than those that do not. REM threatened operation sustainability, while CSR disclosure promotes sustainability. CSR disclosure is a means to manage the interest and concerns of all its key stakeholders to ensure all integral parts of the business can be maintained properly, including customers (market), suppliers (supply chain), shareholders (finance), and employees (labor). Therefore, companies committed to CSR should be less prone to engage in REM since it contradicts each other. CSR disclosure also signals to the capital market that the company is committed to sustainable business practice instead of a myopia performance, thus, reducing investor perception of company-specific risk.

*H5: Corporate social responsibility disclosure weakens the positive association between real earnings management and idiosyncratic risk.*

The stakeholder theory emphasizes wider stakeholders' control of the company through disclosing financial and non-financial information (Rupley et al., 2017). This wider control helps to improve governance, prevents companies from engaging in detrimental practices, and reduces manager opportunism. The stakeholder theory views CSR disclosure as means to address stakeholders' demand for more transparency and accountability (Brown, 2009; Spence, 2009), leading to less information asymmetry. Due to lower information asymmetry, more effective communication further refrains the potential for managerial opportunism builds stakeholder trust (Pérez, 2015), and aligns managers' ethics with stakeholder social expectations (Agudelo et al., 2019).

The most notable relation between FRA and idiosyncratic risk is investors' trust and perception of greater company risk. FRA may result in high litigation costs (federal fines, legal fees, etc.), reputational costs, insolvency, and even bankruptcy due to abusive violation of public trust. It causes misrepresentation of accounting information by violating GAAP. It is derived from managers' opportunism, motivated by several factors, such as greed and principals' high demand for company performance. In that context, FRA is a tool for managers (agents) to deceive and meet the expectation of investors (principals), especially to avoid being viewed as incompetent when the company shows volatile results. However, investors perceive managers' decision to engage in FRA as a reflection of their incompetence and opportunism, which may lower the expected return and put the company at risk. Schober et al. (2014) claimed that higher idiosyncratic risk might result from asymmetric information concerning the agent's performance when volatile results could be misinterpreted as a lack of effort or incompetence.

To control and monitor managers' discretions, the stakeholder theory suggests that CSR disclosure can be employed to intensify scrutiny from various stakeholders. CSR disclosure allows the outside stakeholder to employ knowledge absent from financial information to assess the company's overall risk and performance, such as fair business practices, human rights, labor standards, community and society, and anti-corruption (Wuttichindanon, 2017). Companies increasingly rely on CSR reports addressing stakeholders' increasing demands for transparency and accountability and information relating to a variety of risks and opportunities not evident from traditional reports (KPMG, 2008). Increased transparency and accountability also help prevent companies from engaging in damaging and costly practices that contribute to high litigation costs and reputational costs. Koh et al. (2014) found that CSR disclosure can help a company reduce the probability of facing lawsuits. More information disclosure also helps to increase investor protection and decrease manager opportunism to engage in earnings management (Scholtens & Kang, 2012). Hence, CSR participation can strengthen risk management and lower company risk (Jo & Na, 2012).

CSR disclosure contributes to aligning managers' ethics with the social expectations of stakeholders (Agudelo et al., 2019). Effective communication reduces asymmetric information, which further restricts the potential for managerial opportunism and builds stakeholder trust Pérez (2015). CSR disclosure also signals that companies emphasize their social and environmental practices (Tzouvanas et al., 2020). According to Zhang, Shan, and Chan (2020), this emphasis help protects corporate reputation by dispelling customer

concerns about environmental practices, lowering the likelihood of government regulation and compliance costs, and decreasing information asymmetry and uncertainty in the overall information environment. Even when FRA comes to public knowledge and financial restatement occurs, CSR disclosure alleviates reputational damage and plays an insurance-like or value protection role during crisis periods.

If the stock price reflects all available information, then the information contained within CSR disclosure would have been reflected as well. *Ceteris paribus*, companies that exert more good news should've been able to maintain their stock price better than those that do not. There are several ways to prevent FRA, but frictionless communication between key stakeholders remains crucial to detecting management's hidden agenda. CSR disclosure promotes transparency and accountability. Thus, companies establish a communication line to obtain information about potential fraud and deploy a coordinated approach to investigation and corrective action to promptly address fraud. Companies may also exploit and communicate their fraud detection excellence as leverage to gain investors' trust and favor.

*H6: Corporate social responsibility disclosure weakens the positive association between fraudulent accounting and idiosyncratic risk.*

### 3. DATA, SAMPLE, AND METHODOLOGY

This research employs secondary data obtained from the Indonesian Stock Exchange website ([www.idx.co.id](http://www.idx.co.id)) to estimate earnings management and CSR disclosure and [www.finance.yahoo.com](http://www.finance.yahoo.com) to estimate idiosyncratic risk. The population of data includes all manufacturing companies listed on the Indonesian Stock Exchange (IDX) covering the period of 2016-2019. However, to estimate idiosyncratic risk, accrual earnings management, real earnings management, and fraudulent accounting, the financial data of the fiscal year 2015 is also used. The fiscal year 2016 is chosen as the initial data sampling point following the Global Reporting Initiatives standards (GRI standards), published by the Global Sustainability Standard Board (GSSB). Meanwhile, the fiscal year 2019 was chosen as the endpoint of data sampling due to Indonesia's adoption of IFRS 15 in 2020 regarding revenue recognition that may lower the comparability of revenue components accrued in 2020 and prior years, as well as potentially configure the characteristics of earnings management from 2020 onwards compared to prior years due to several new constraints in earnings recognition. This research obtained 123 sample companies through purposive sampling, as shown in Table 1.

**Table 1.** Purposive sampling result

<i>Predetermined criteria</i>	<i>The amount</i>
All manufacturing companies are listed on the Indonesian Stock Exchange (IDX) as of July 31, 2021	195
Less: Companies listed after December 31, 2014	(59)
Companies with incomplete data (financial report & historical stock price) from 2015-2019	(6)
Companies with stocks that remain dormant for at least one whole year	(7)
Number of qualified companies	123
Number of observed years (2016-2019)	4
Number of observations	492

### 3.1. Dependent variable

In this research, the dependent variable is the idiosyncratic risk (*IR*), which will be estimated using Fama and French's (1993) three-factor model (*IR\_FF3*) in the main regression test (Wang et al., 2020; Vo et al., 2020) and the market model (*IR\_MM*) in the sensitivity test (Cerqueira & Pereira, 2018), to compare the robustness of both models based on the significance of their statistical results. The two models are chosen because they are fundamentally different. Thus, they may depict different results (Lin & Shen, 2014). The market model explains the empirical relationship between security and market returns and hypothesizes a linear association between the returns on individual securities and the market index. However, like CAPM, the market model cannot explain all the returns for a portfolio consisting of various stocks.

The Fama-French's (1993) three-factor model is among the earliest model to differ from the market model or CAPM (Fama & French, 1993). It considers price anomalies by incorporating several pre-determined factors that drive expected returns: sensitivity to the market, sensitivity to size, and sensitivity to value stocks, as measured by the book-to-market ratio. Any additional average expected return may be attributed to unpriced or unsystematic risk. In later development, the Fama-French's (1993) three-factor model lays the fundamentals for Carhart's four-factor model and Fama-French's (2015) five-factor model. However, the fourth factor of Carhart's model (*momentum factor*) is arguably based more on behavioral finance arguments, whereas the market risk, size, and value factor are more rooted in the efficient market hypothesis. They are especially considering that Carhart's study is in conjunction with mutual fund performance.

Meanwhile, the two additional factors in Fama-French's (2015) five-factor model (RMW (robust minus weak) and CMA (conservative minus

aggressive)) are less robust. Thus, they may lower the robustness of the overall model when they interact with the other three factors. According to Fama and French (2008), the asset growth (CMA) and profitability (RMW) anomalies are less robust. There is an asset growth anomaly in average returns on microcaps and small stocks, but it is absent for big stocks. Higher profitability tends to be associated with abnormally high returns among profitable companies, but there is little evidence that unprofitable companies have unusually low returns.

Following Firmansyah et al. (2020), the first step in employing the Fama-French's (1993) three-factor model is to create a company category based on market capitalization  $t-1$  (size factor) for the current year, hereinafter referred to as SMB factor (small minus big). The highest 50 percent are classified as big companies, and the remaining 50 percent are classified as small companies. The second step is to create a company category based on book-to-market equity  $t-1$  (value factor), hereinafter referred to as the HML factor (high minus low). The largest 1/3 is classified as high-value companies, the middle 1/3 as medium-value companies, and the least 1/3 as low-value companies. For each year  $t$ , companies are ranked and sorted into portfolios based on the size of their market capitalization (SMB) and book-to-market-equity ratio (HML) as of year-end  $t-1$ . The monthly returns of the size factor portfolio are calculated by subtracting the monthly returns of the big companies portfolio from the small companies portfolio. The monthly returns of the value factor are calculated by subtracting the monthly returns of the low-value companies' portfolios from the high-value companies' portfolios. To arrive at SMB and HML portfolios, companies with incomplete monthly stock price information and negative equity are excluded, as in Liu et al. (2014). To estimate idiosyncratic risk, the following regression equation is employed:

$$R_{i,t} - R_{ft} = \beta_0 + \beta_1(R_{mt} - R_{ft}) + \beta_2SMB_t + \beta_3HML_t + \varepsilon_{i,t} \quad (1)$$

where  $R_{i,t}$  is the company's monthly stock return,  $R_{ft}$  is risk-free using monthly yields on 10-year government bonds,  $R_{mt}$  is the market's monthly return, *SMB* is the difference between the monthly return of small-size companies portfolio and the large-size companies portfolio, *HML* is the difference between the monthly return of high-value companies portfolio and the low-value companies portfolio, and  $\varepsilon_{i,t}$  is the residual of the equation.

The market model is the regression of the returns on the stock against the returns on the market. The annualized idiosyncratic risk is estimated as the standard deviation of the monthly residual from the regression equation below. According to Kaplan (2013), the standard deviation of daily, weekly, monthly, or quarterly stock return data can be annualized by multiplying it by the square root of the number of days, weeks, months, and quarters period so that it can transform into an estimate of annual volatility ("How to calculate annualized standard deviation", n.d.). Therefore, to

obtain annual idiosyncratic risk, this research multiplies the standard deviation of the monthly residuals generated from the following equation with  $\sqrt{12}$ .

$$R_{i,t} = \beta_0 + \beta_1R_{mt} + \varepsilon_{i,t} \quad (2)$$

where,  $R_{i,t}$  is the company's monthly stock return,  $R_{mt}$  is the monthly stock return from the Composite Stock Price Index (CSPI), and  $\varepsilon_{i,t}$  is the residual of the equation.

### 3.2. Independent variables

#### 3.2.1. Accrual earnings management (AEM)

The intensity of discretionary accrual measures AEM activity. To estimate discretionary accruals, this research employs the cross-sectional version of the Jones model, as modified by Kothari, Leone, and Wasley (2005), otherwise known as *performance-matched discretionary accruals*, as follows:

$$TA_{i,t} = a_0 + a_1 \frac{1}{Assets_{i,t-1}} + a_2 \Delta Sales_{i,t} + a_3 PPE_{i,t} + a_4 ROA_{i,t} + \varepsilon_{i,t} \quad (3)$$

where,  $TA_{i,t}$  is total accrual (the difference between net income and cash flow from the operation) scaled by lagged total assets;  $Assets_{i,t-1}$  is lagged total assets;  $\Delta Sales_{i,t}$  are sales changes net of the change in accounts receivables scaled by lagged total assets;  $PPE_{i,t}$  is net property, plant and equipment scaled by lagged total assets;  $ROA_{i,t}$  is net income divided by lagged total assets, and  $\varepsilon_{i,t}$  is the residual of the equation.

### 3.2.2. Real earnings management (REM)

REM activity is estimated using a model developed by Dechow, Kothari, and Watts (1998). This model has been implemented previously by Roychowdhury (2006), Cohen and Zarowin (2010), Zang (2011), and Chang et al. (2015). To employ this model, first, this research estimates the normal level of CFO, production costs, and discretionary expenses. Normal CFO is expressed as a linear sales function and change in sales. To estimate a normal CFO, the following cross-sectional regression is run for each company and year:

$$\frac{CFO_{i,t}}{Assets_{i,t-1}} = k_1 \frac{1}{Assets_{i,t-1}} + k_2 \frac{Sales_{i,t}}{Assets_{i,t-1}} + k_3 \frac{\Delta Sales_{i,t}}{Assets_{i,t-1}} + \varepsilon_{i,t} \quad (4)$$

where,  $CFO_{i,t}$  is cash flow from operating activities;  $Assets_{i,t-1}$  is lagged total assets;  $Sales_{i,t}$  is annual total sales;  $\Delta Sales_{i,t}$  is the change in sales, and  $\varepsilon_{i,t}$  is the residual of the equation.

To estimate normal production cost, this research runs the following cross-sectional regression for each company and year:

$$\frac{Prod_{i,t}}{Assets_{i,t-1}} = k_1 \frac{1}{Assets_{i,t-1}} + k_2 \frac{Sales_{i,t}}{Assets_{i,t-1}} + k_3 \frac{\Delta Sales_{i,t}}{Assets_{i,t-1}} + k_4 \frac{\Delta Sales_{i,t-1}}{Assets_{i,t-1}} + \varepsilon_{i,t} \quad (5)$$

where,  $Prod_{i,t}$  is normal production cost;  $Assets_{i,t-1}$  is lagged total assets,  $Sales_{i,t}$  is annual total sales;  $\Delta Sales_{i,t}$  is the change in sales;  $\Delta Sales_{i,t-1}$  is lagged change in sales, and  $\varepsilon_{i,t}$  is the residual of the equation.

The normal level of discretionary expenses is expressed as a function of lagged sales. To estimate normal discretionary expenses, this research runs the following cross-sectional regression for each company and year:

$$\frac{DiscExp_{i,t}}{Assets_{i,t-1}} = k_1 \frac{1}{Assets_{i,t-1}} + k_2 \frac{Sales_{i,t-1}}{Assets_{i,t-1}} + \varepsilon_{i,t} \quad (6)$$

where  $DiscExp_{i,t}$  is total discretionary expenses (advertising costs, R&D costs, and selling, general and administrative (SGA) costs);  $Assets_{i,t-1}$  is lagged total assets;  $Sales_{i,t-1}$  is lagged total sales, and  $\varepsilon_{i,t}$  is the residual of the equation.

To capture the aggregate effect of REM, this research combines the three individual measures of REM as in Cohen et al. (2008) and computes one comprehensive metric as follows:

$$REM\_PROXY = (-1 \times Ab\_CFO) + Ab\_Prod + (-1 \times Ab\_DiscExp) \quad (7)$$

Abnormal discretionary expenses and abnormal cash flows from operations are multiplied by negative ones, respectively (thus, a higher amount indicates an increasing likelihood that companies cut discretionary expenses and engage in sales manipulations to manage reported earnings upwards) and added to abnormal production costs. As this aggregate measure increases, companies are more likely to engage in real earnings management activities.

### 3.2.3. Fraudulent accounting (FRA)

FRA is estimated using Beneish's (1999) M-score model. This model used financial statement data to construct variables that, according to Beneish (1999), are designed to capture either the financial statement distortions resulting from manipulation or precondition that might prompt companies to engage in such activity. The construction of this model is as follows:

$$AI = -4.840 + (0.920 \times DSRI) + (0.528 \times GMI) + (0.404 \times AQI) + (0.892 \times SGI) + (0.115 \times DEPI) - (0.172 \times SGAI) - (0.327 \times LVGI) + (4.679 \times TATA) \quad (8)$$

where  $AI$  is accounting irregularities index,  $DSRI$  is days sales receivables index,  $GMI$  is gross margin index,  $AQI$  is asset quality index,  $SGI$  is sales growth index,  $DEPI$  is depreciation index,  $SGAI$  is selling general and administrative expense index,  $LVGI$  is leverage index, and  $TATA$  is total accruals to total assets.

According to Timofte, Socoliuc, Grosu, and Coca (2021), if the M-score value ( $AI$ ) is greater than -2.22, the company is most likely to manipulate financial statements. In contrast, if the M-score value is less than -2.22, it suggests that the company is less likely to manipulate its financial records.

### 3.3. Moderating variable

The moderating variable incorporated in this research is corporate social responsibility disclosure (CSR disclosure), measured using disclosure parameters derived from the GRI standards. In particular, this research employs the GRI standards-2016, consistent with the initial point of observation. The GRI standards-2016 contains 77 specific disclosure categorized into economics, environment, and social topics.

**Table 2.** Predetermined scoring scale of CSR disclosure

Scale	Description
0	No disclosure: absence of discussion on the issue
1	Narrow coverage: few details or briefly stated
2	Descriptive: Proven impact of the company or its policies
3	Quantitative: the impact of the company or its policies was well elaborated in monetary terms or actual physical quantities, and the performance measuring technique is presented.
4	Truly extraordinary: Consistent disclosure of positive and negative CSR activities through the website and printed report, with comparison against best practice.

In the first step, using the content analysis method, this research gathers relevant information on all CSR activities disclosures undertaken by each sample company from the annual and sustainability reports. Then, to measure the quality of CSR disclosure, according to Lee (2015), this research employs a predetermined scale in Table 2 (see above) to score each CSR activity disclosed.

This research then estimates the aggregate score for each sample company by accumulating

Model 1:

$$IR\_FF3_{i,t} = \beta_0 + \beta_1 ABS\_DA_{i,t} + \beta_2 REM\_PROXY_{i,t} + \beta_3 AI_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 ROA_{i,t} + \beta_7 MOM_{i,t} + \beta_8 BETA_{i,t} + \beta_9 TURN_{i,t} + \beta_{10} PER_{i,t} + \beta_{11} CAPITAL_{i,t} + \beta_{12} AT_{i,t} + \beta_{13} A\_GROWTH_{i,t} + \beta_{14} S\_GROWTH_{i,t} + \beta_{15} CFOVOL_{i,t} + \beta_{16} CURRENT_{i,t} + \beta_{17} COGS_{i,t} + \varepsilon_{i,t} \quad (10)$$

Meanwhile, to test *H4*, *H5*, and *H6*, this research incorporates a moderating variable into the

Model 2:

$$IR\_FF3_{i,t} = \beta_0 + \beta_1 ABS\_DA_{i,t} + \beta_2 REM\_PROXY_{i,t} + \beta_3 AI_{i,t} + \beta_4 CSRI_{i,t} + \beta_5 ABS\_DA_{i,t} * CSRI_{i,t} + \beta_6 REM\_PROXY_{i,t} * CSRI_{i,t} + \beta_7 AI_{i,t} * CSRI_{i,t} + \beta_8 SIZE_{i,t} + \beta_9 LEV_{i,t} + \beta_{10} ROA_{i,t} + \beta_{11} MOM_{i,t} + \beta_{12} BETA_{i,t} + \beta_{13} TURN_{i,t} + \beta_{14} PER_{i,t} + \beta_{15} CAPITAL_{i,t} + \beta_{16} AT_{i,t} + \beta_{17} A\_GROWTH_{i,t} + \beta_{18} S\_GROWTH_{i,t} + \beta_{19} CFOVOL_{i,t} + \beta_{20} CURRENT_{i,t} + \beta_{21} COGS_{i,t} + \varepsilon_{i,t} \quad (11)$$

To test the robustness of the main model, this research undertakes a sensitivity test by substituting the Fama-French's (1993) three-factor model with

Model 3:

$$IR\_MM_{i,t} = \beta_0 + \beta_1 ABS\_DA_{i,t} + \beta_2 REM\_PROXY_{i,t} + \beta_3 AI_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 ROA_{i,t} + \beta_7 MOM_{i,t} + \beta_8 BETA_{i,t} + \beta_9 TURN_{i,t} + \beta_{10} PER_{i,t} + \beta_{11} CAPITAL_{i,t} + \beta_{12} AT_{i,t} + \beta_{13} A\_GROWTH_{i,t} + \beta_{14} S\_GROWTH_{i,t} + \beta_{15} CFOVOL_{i,t} + \beta_{16} CURRENT_{i,t} + \beta_{17} COGS_{i,t} + \varepsilon_{i,t} \quad (12)$$

Meanwhile, to test *H4*, *H5*, and *H6* in the sensitivity test, this research employs

the score from each CSR activity. To arrive at the corporate social responsibility disclosure index (*CSRI*), the following model is employed:

$$CSRI_{i,t} = \frac{\sum n_{i,t}}{k_{i,t}} \quad (9)$$

where, *CSRI<sub>i,t</sub>* is CSR disclosure index,  $\sum n_{i,t}$  is an aggregate score of disclosure, and *k<sub>i,t</sub>* is the total item of disclosure under GRI standards-2016.

### 3.4. Control variables

This research employs several control variables to restrain the experimental conditions from the influence of other independent variables that are not employed in the study, but may affect the dependent variable, otherwise known as extraneous variables. Thus, control variables may improve the robustness of the research model. This research employs several variables derived from company performance (*SIZE*, *LEV*, *ROA*, *CAPITAL*, *AT*, *A\_GROWTH*, *S\_GROWTH*, *CFOVOL*, *CURRENT*, *COGS*) and stock performance (*MOM*, *BETA*, *TURN*, *PER*).

### 3.5. Research model

The data analysis in this research uses multiple linear regression models for panel data. In the main model, this research employs the Fama-French's (1993) three-factor model to estimate the idiosyncratic risk (*IR\_FF3*). To test *H1*, *H2*, and *H3*, this research regresses the dependent variable against all the independent variables and control variables using the following model:

regression model as follows:

the market model in estimating the idiosyncratic risk. The following model is employed to test *H1*, *H2*, and *H3* in the sensitivity test:



Model 4:

$$IR\_MM_{i,t} = \beta_0 + \beta_1 ABS\_DA_{i,t} + \beta_2 REM\_PROXY_{i,t} + \beta_3 AI_{i,t} + \beta_4 CSRI_{i,t} + \beta_5 ABS\_DA_{i,t} * CSRI_{i,t} + \beta_6 REM\_PROXY_{i,t} * CSRI_{i,t} + \beta_7 AI_{i,t} * CSRI_{i,t} + \beta_8 SIZE_{i,t} + \beta_9 LEV_{i,t} + \beta_{10} ROA_{i,t} + \beta_{11} MOM_{i,t} + \beta_{12} BETA_{i,t} + \beta_{13} TURN_{i,t} + \beta_{14} PER_{i,t} + \beta_{15} CAPITAL_{i,t} + \beta_{16} AT_{i,t} + \beta_{17} A\_GROWTH_{i,t} + \beta_{18} S\_GROWTH_{i,t} + \beta_{19} CFOVOL_{i,t} + \beta_{20} CURRENT_{i,t} + \beta_{21} COGS_{i,t} + \varepsilon_{i,t} \quad (11)$$

where, *ceteris paribus*,  $IR\_MM_{i,t}$  is the measure of idiosyncratic risk using the market model for the company  $i$  in year  $t$  (see Appendix for variable descriptions).

## 4. ANALYSIS AND RESULTS

### 4.1. Descriptive statistics

Table 3 demonstrates the descriptive statistics of variables. As shown in Table 3, the fluctuation of stock price and the stock market from 2016 to 2019 depicts the average degree of company-specific risk in Indonesia's manufacturing companies to be around 34.7% ( $IR\_FF3$ ) and 39.4% ( $IR\_MM$ ), with the market model generates slightly higher estimates than the Fama-French's (1993) three-factor model. The minimum value is recorded at 0.0243 ( $IR\_FF3$ ) and 0.0190 ( $IR\_MM$ ), confirming that none of Indonesia's manufacturing companies is free of company-specific risk. This research employs the absolute value of the discretionary accruals ( $ABS\_DA$ ) in the analysis. The movement of discretionary accruals ( $DA$ ) becomes directly proportional to the degree of the company's earnings manipulations through an accrual basis. The absolute value also captures accrual reversals following earnings management (Cohen et al., 2008). The estimated value of  $ABS\_DA$  has a mean of 0.0581, which shows that, on average, throughout the observed years, the reported accruals of Indonesia's manufacturing companies contain discretionary accruals of around 5.8% of their lagged total assets. The positive median of 0.0406 suggests that Indonesia's manufacturing companies are more likely to engage in aggressive AEM than conservative AEM. The minimum  $ABS\_DA$  is 0.0215% of lagged

total assets, confirming that almost none of Indonesia's manufacturing companies is free of certain AEM.

Table 3 also shows that the estimated average value of  $REM\_PROXY$  in Indonesia's manufacturing company is nearly zero due to positive and negative  $REM$  that depicts aggressive and conservative use of  $REM$ , respectively. The positive median of 0.0801 describes that about half of Indonesia's manufacturing companies have managed their earnings through aggressive manipulation of real activities. The estimated value of  $AI$  has a mean of -1.8432 (above -2.22) which shows that, on average, throughout the observed years, the indication of  $FRA$  is found among Indonesia's manufacturing companies. However, the negative median of -2.4084 (below -2.22) suggests that less than half of Indonesia's manufacturing companies possess certain indicators of  $FRA$ .  $CSRI$  has an average value (mean) of 0.460801, which shows that, on average, Indonesia's manufacturing companies engage in a certain degree of  $CSR$  disclosure. The median of 0.3636 (below average) shows that about half of the sample companies' disclosure degree (quality and amount) is below average. The highest score of  $CSRI$  is 2.6234 (maximum score is 4), indicating that the best  $CSR$  disclosure among Indonesia's manufacturing companies has been able to fulfill around 65.5% of all parameter items and quality of disclosures. The lowest score is 0.0779, suggesting that the poorest only fulfill around 1.95%. The steep difference between the maximum and minimum score of  $CSRI$  means a significant gap in  $CSR$  disclosure among Indonesia's manufacturing companies. It is attributable to the fact that  $CSR$  disclosure is poorly regulated and remains unstandardized in Indonesia.

Table 3. Variable descriptive statistics

Variable	N	Mean	Median	Std. dev.	Max.	Min.
$IR\_FF3$	492	0.3466	0.2642	0.3183	3.2919	0.0243
$IR\_MM$	492	0.3940	0.2985	0.3643	3.5775	0.0190
$ABS\_DA$	492	0.0581	0.0406	0.0879	1.2976	0.00022
$REM\_PROXY$	492	$1.85 * 10^{-16}$	0.0801	0.3490	0.9372	-1.6515
$AI$	492	-1.8432	-2.4084	6.6925	133.47	-13.970
$CSRI$	492	0.4608	0.3636	0.3745	2.6234	0.0779
$SIZE$	492	28.652	28.4809	1.5937	33.4945	25.2156
$LEV$	492	3.3302	0.7598	11.0459	120.5391	0.0023
$ROA$	492	0.0469	0.0328	0.0980	0.9210	-0.2549
$MOM$	492	0.2091	0.0824	0.6659	5.5941	-1.5670
$BETA$	492	0.5658	0.4614	2.2002	17.9771	-12.4548
$TURN$	492	0.0118	0.0018	0.0294	0.2533	0.0000
$PER$	492	18.1469	10.731	92.2867	739.6818	-835.7143
$CAPITAL$	492	0.4359	0.4262	0.2270	1.5832	0.0117
$AT$	492	1.0613	0.9436	0.7923	8.7490	0.0003
$A\_GROWTH$	492	0.1052	0.0565	0.4699	8.8502	-0.4617
$S\_GROWTH$	492	0.0765	0.0528	0.2981	3.7663	-0.9868
$CFOVOL$	492	0.0533	0.0356	0.0851	0.8819	0.0009
$CURRENT$	492	2.2845	1.5986	2.0270	21.7045	0.1065
$COGS$	492	0.9130	0.9219	0.1561	2.1923	0.0972

## 4.2. Hypothesis test result

Table 4 and Table 5 depict the multiple linear regression test result. As shown in Table 4 and Table 5, the adjusted R-squared values suggest that the variables employed in Model 1, Model 2, Model 3, and Model 4 can explain 83.6%, 83.3%, 85.6%, and

85.3% of variations in the dependent variable respectively. By comparing the adjusted R-squared value between Model 1 and Model 3 as well as Model 2 and 4, this research concludes that *IR\_MM* is better explained by the variables employed than *IR\_FF3*.

**Table 4.** Regression test result of the main model (dependent variable: *IR\_FF3*)

Variables	Exp. sign	Model 1			Model 2		
		Coef.	t-stat	p-value (one tailed)	Coef.	t-stat	p-value (one tailed)
<i>ABS_DA</i>	+	0.175	2.350	0.010***	0.462	3.868	0.000***
<i>REM_PROXY</i>	+	0.194	5.615	0.000***	0.174	3.880	0.000***
<i>AI</i>	+	0.004	4.377	0.000***	0.012	3.130	0.001***
<i>CSRI</i>	-				-0.019	-0.416	0.339
<i>ABS_DA * CSRI</i>	-				-0.721	-4.047	0.000***
<i>REM_PROXY * CSRI</i>	-				0.015	0.290	0.386
<i>AI * CSRI</i>	-				-0.035	-2.290	0.011**
<i>SIZE</i>	-	0.191	6.787	0.000***	0.225	7.355	0.000***
<i>LEV</i>	+	-0.005	-3.252	0.001***	-0.004	-2.395	0.009***
<i>ROA</i>	-	-0.028	-0.436	0.331	0.006	0.072	0.471
<i>MOM</i>	+	0.257	27.27	0.000***	0.264	26.30	0.000***
<i>BETA</i>	+	0.019	6.403	0.000***	0.019	6.664	0.000***
<i>TURN</i>	+	0.678	2.536	0.006***	0.788	2.654	0.004***
<i>PER</i>	-	0.0003	4.954	0.000***	0.0002	2.783	0.003***
<i>CAPITAL</i>	-	-0.053	-0.894	0.186	-0.053	-0.840	0.201
<i>AT</i>	-	0.155	4.783	0.000***	0.150	4.560	0.000***
<i>A_GROWTH</i>	+	0.043	1.481	0.070*	0.060	1.859	0.032**
<i>S_GROWTH</i>	+	0.181	2.860	0.002***	0.062	0.780	0.218
<i>CFOVOL</i>	+	0.251	1.789	0.037**	0.336	2.338	0.010***
<i>CURRENT</i>	-	-0.003	-0.755	0.225	-0.004	-0.900	0.184
<i>COGS</i>	-	-0.422	-3.304	0.001***	-0.118	-0.653	0.257
Cons.		-4.981	-6.070	0.000	-6.215	-6.955	0.000
R-squared			0.882186			0.881315	
Adj. R-squared			0.835663			0.832546	
Prob (F-statistics)			0.000000			0.000000	

Note: \*\*\*, \*\*, \* indicates significance level at 1%, 5%, and 10%.

**Table 5.** Regression test result of the sensitivity test (dependent variable: *IR\_MM*)

Variables	Exp. sign	Model 3			Model 4		
		Coef.	t-stat	p-value (one tailed)	Coef.	t-stat	p-value (one tailed)
<i>ABS_DA</i>	+	0.128	1.736	0.042**	0.487	4.664	0.000***
<i>REM_PROXY</i>	+	0.159	4.122	0.000***	0.182	3.807	0.000***
<i>AI</i>	+	0.005	4.164	0.000***	0.013	3.415	0.000***
<i>CSRI</i>	-				-0.024	-0.580	0.281
<i>ABS_DA * CSRI</i>	-				-0.948	-5.959	0.000***
<i>REM_PROXY * CSRI</i>	-				-0.007	-0.144	0.443
<i>AI * CSRI</i>	-				-0.034	-2.257	0.012**
<i>SIZE</i>	-	0.186	5.427	0.000***	0.206	5.464	0.000***
<i>LEV</i>	+	-0.005	-3.835	0.001***	-0.006	-3.618	0.001***
<i>ROA</i>	-	-0.114	-1.682	0.047**	-0.040	-0.390	0.348
<i>MOM</i>	+	0.301	28.09	0.000***	0.299	26.51	0.000***
<i>BETA</i>	+	0.027	7.892	0.000***	0.027	7.931	0.000***
<i>TURN</i>	+	1.478	3.901	0.000***	1.583	4.160	0.000***
<i>PER</i>	-	0.0001	2.412	0.008***	0.0001	1.831	0.034**
<i>CAPITAL</i>	-	-0.039	-0.536	0.296	-0.049	-0.648	0.259
<i>AT</i>	-	0.176	3.957	0.000***	0.178	3.982	0.000***
<i>A_GROWTH</i>	+	0.037	1.085	0.139	0.057	1.565	0.059*
<i>S_GROWTH</i>	+	0.069	0.885	0.188	0.021	0.239	0.406
<i>CFOVOL</i>	+	0.301	2.182	0.015**	0.411	3.032	0.001***
<i>CURRENT</i>	-	-0.004	-0.859	0.196	-0.004	-0.917	0.180
<i>COGS</i>	-	-0.210	-1.236	0.109	-0.068	-0.344	0.366
Cons.		-5.016	-5.046	0.000	-5.716	-5.206	0.000
R-squared			0.896874			0.895757	
Adj. R-squared			0.856151			0.852922	
Prob (F-statistics)			0.000000			0.000000	

Note: \*\*\*, \*\*, \* indicates significance level at 1%, 5%, and 10%.

## 5. DISCUSSION

### 5.1. The impact of accrual earnings management (AEM) on idiosyncratic risk

As shown in Table 4, AEM (as proxied by *ABS\_DA*) is positively associated with idiosyncratic risk. The coefficient and one-tailed p-value of *ABS\_DA* is 0.175 and 0.01, respectively, in Model 1, which suggests a 1% significance level. This result is robust after a sensitivity test, as depicted in Table 5. The coefficient and one-tailed p-value of *ABS\_DA* is 0.128 and 0.042, respectively, in Model 3, which suggests a 5% significance level. Therefore, *H1* is accepted in both models. This result indicates that AEM is priced in the market-determined risk as an accounting measure of risk. Investors consider the uncertainty arising from the use of AEM and start to discount it into the stock price. It confirms earlier findings of Kitagawa and Okuda (2016), Zhou et al. (2016), Cerqueira and Pereira (2018), Da Silva (2019), and Asri (2021). However, to a certain extent, this finding contradicts Salehi et al. (2018), who suggested that the stock return is neither affected by the intensity of discretionary accrual nor the quality of disclosure.

Discretionary accruals increase information asymmetry, giving investors the incentives to trade more on noise than a fundamental basis due to the increasing uncertainty of information (Cerqueira & Pereira, 2018). The shifts from company information to noise indicate an escalating concern over the company's internal risk, causing the stock price to float more on the volatile sentiment and speculation than the real performance. It makes investors bear higher holding costs and more vulnerable to crowd herding, contributing to escalating stock price volatility. Less significant managerial ownership implies managers are more susceptible to opportunism and shirk their duties since they are not as invested in the company's value as public investors. The distinct harm that AEM may do to both company and investors is that last year's manipulations are brought to the next years due to the continuum characteristics of financial reports. Therefore, AEM contributes to a long-term risk of earnings manipulation (e.g., "big bath" restructuring charges and "cookie jar" reserves).

The positive association between AEM and idiosyncratic risk is widely found in both developed markets such as the U.S.A (Chang et al., 2015), Japan (Kitagawa & Okuda, 2016), the U.K (Cerqueira & Pereira, 2018) and developing market such as China (Zhou et al., 2016; Wang et al., 2020), and Iran (Salehi et al., 2018). Today, the adoption of more singular accounting standards and similar approaches to investment analysis due to the convergence of the world stock market has allowed Indonesian Stock Market to assimilate this positive association. The gradual adoption of IFRS in 2012 and the stock market liberalization since 1992 prove that this convergence has long reached Indonesia. The adoption of principle-based accounting standards and the significant gap between regulations and compliance in Indonesia has also led investors to perceive that investing in an emerging market like Indonesia is much riskier. Principle-based accounting standard has traded off conservatism for flexibility that unfortunately leaves

more room for leniency, which to a certain extent benefit the use of AEM. The emerging market also displays lower compliance to regulations than developed markets, where company-level compliance and application can be far below the country-level corporate governance and investor protection regulations (Iatridis, 2012).

### 5.2. The impact of real earnings management (REM) on idiosyncratic risk

As shown in Table 4, REM (as proxied by *REM\_PROXY*) is positively associated with idiosyncratic risk. The coefficient and one-tailed p-value of *REM\_PROXY* is 0.194 and 0.00, respectively, in Model 1, suggesting a 1% significance level. This result is robust after a sensitivity test, as depicted in Table 5. The coefficient and one-tailed p-value of *REM\_PROXY* is 0.159 and 0.00, respectively, in Model 3, which also suggests a 1% significance level. Therefore, *H2* is accepted in both models. This result indicates that REM as an accounting measure of risk is also priced in the market-determined risk. Investors consider the uncertainty arising from REM use and start to discount it into the stock price. It confirms earlier findings of Francis et al. (2014), Chang et al. (2015), and Firmansyah and Suhanda (2021). However, this finding contradicts Lin and Shen (2014) to a certain extent. They contended that REM might lower idiosyncratic risk since it allows companies to manage earnings and avoid detection simultaneously.

For investors, the main concern regarding REM practice is that it is more difficult to understand and easier to conceal as a reasonable operating strategy instead of being detected as an earnings management by boards, auditors, and regulators (Kim & Sohn, 2013). Moreover, REM activities are undertaken during the year, and after the fiscal year-end, managers fine-tune their accrual accounts based on the outcomes of real activities manipulation (Zang, 2011). Therefore, the sequential nature of REM and AEM can be designed to reduce performance volatility throughout the year, masking the cut-off of the scheme that is important to differentiate REM from the reasonable business strategy. REM's nature has made it harder for the board and internal audit committee to carry out financial supervision, thereby increasing the potential for management's misuse of its assets. This leads investors to perceive that companies engaging in REM conduct worse governance than appeared.

The less detectable characteristic of REM prevents the investor from making gradual price adjustment through piecemeal diversification of risk when the buildup abnormalities are not yet too much, as opposed to an imminent adjustment when the buildup abnormalities are too great, leading to a stock price crash. REM put the company at risk by allocating the company's future resources for present favorable performance instead of long-term sustainable operation. Unlike AEM, the complexity of undertaking REM activities has led to a wider involvement of the company's various divisions from production, finance and accounting, sales and marketing, warehouse and inventories, etc. The agency theory suggests that the agency problem

may involve multiple agents (Shapiro, 2005). Therefore, higher REM intensity raises a major cross-divisions governance issue and is exacerbated by lower scrutiny from boards, auditors, and regulators.

In undertaking REM, managers usually try to avoid losses by offering price discounts to temporarily boost sales, engaging in overproduction to reduce the cost of goods sold (COGS), and aggressively reducing discretionary expenditures to improve margins. Therefore, investors perceive companies engaging in REM as having fewer actual cash flows than reported, potentially increasing the company-specific risk such as illiquidity and bankruptcy (Schober et al., 2014). When investors expect a positive reversal of harmful events, reversing the detrimental effect of REM can be difficult.

### 5.3. The impact of fraudulent accounting (FRA) on idiosyncratic risk

As shown in Table 4, FRA (as proxied by *AI*) is positively associated with idiosyncratic risk. The coefficient and one-tailed p-value of *AI* is 0.004 and 0.00, respectively, in Model 1, which suggests a 1% significance level. This result is robust after a sensitivity test, as depicted in Table 5. The coefficient and one-tailed p-value of *AI* are 0.005 and 0.00 in Model 3, suggesting a 1% significance level. Therefore, *H3* is accepted in both models. This result suggests that FRA as an accounting measure of risk is also priced in the market-determined risk. Investors make a dramatic adjustment to the detection of FRA indicators. According to Beneish et al. (2012), companies with higher accounting irregularities or probability of engaging in FRA experience downturn expected returns. Ibrani, Faisal, and Handayani (2019) added that FRA might increase company value in the short term but cause it to plummet in the long term due to the violation of public trust. Karajian and Ullah (2021) argue that companies that have announced their involvement in FRA showed even more diminishing returns.

Managers undertake FRA because it provides wider accounting choices and more flexibility than AEM. FRA allows managers to conjure non-existing transactions arbitrarily, while REM is probably too expensive to be undertaken by a company that is already cash and resource-constrained. Thus, FRA is probably employed when the severity of the company-specific problem or the magnitude of managers' ambition is no longer coverable by AEM and REM. Investors perceived the managers' decision to engage in fraudulent accounting as a reflection of their incompetence, which may lower their investment's expected return, making the stock less appealing, especially to the risk-averse investor.

From a legal construct point of view, Indonesia adopts civil law as opposed to common law with few adjustments that allow a judge in court or Constitutional Court occasionally interprets and create a law to fill in the gap between law and society or amend the law to respond citizens' interest. However, civil law is more rigid and avoids interpreting and creating new rules than common law. It affects the adaptability and flexibility of civil law to keep up with the rapidly changing issue in

the stock market, where civil law may be less adaptable and flexible as opposed to common law. Compared to civil law, the common law legal system exerts a stricter accounting standard and protects shareholder and creditor rights by implementing various contract systems. Thus, in Indonesia, less assurance of protection from regulators may increase uncertainties among shareholders, which cause them to react drastically to any indication of FRA. The effect of FRA is likely to be stronger when there is a greater gap between the ideal and existing regulations and between the existing regulations and level of compliance.

FRA violates not only GAAP but investors' trust as well. Public trust is fundamental to the stock market, where improving public trust increases participation in the stock market. It becomes a major issue when investors get less assurance from the existing law in developing markets like Indonesia due to lower legal protection of property rights. Meanwhile, FRA's agency problem demonstrates the poor professionalism of managers who run the companies. The significant gap between regulation and compliance in emerging markets may also undo the contractual trust between investors and investment managers (Iatridis, 2012). Unlike debtholders, equity investors are less equipped by a law-binding covenant to secure a fixed amount of their returns. Based on their best estimate, equity investors entrust their investment to the company's future performance. Meanwhile, FRA activity jeopardizes the company's future due to poor actual performance and governance, high litigation costs (federal fines, legal fees, etc.), and reputational costs that may never recover. FRA activities may demolish investors' trust and reduce their participation in the stock market.

### 5.4. The impact of corporate social responsibility disclosure (CSR disclosure) on the association between accrual earnings management (AEM) and idiosyncratic risk

As shown in Table 4, CSR disclosure weakens the positive association between AEM and idiosyncratic risk. The coefficient and one-tailed p-value of *ABS\_DA \* CSRI* are -0.721 and 0.00 in Model 2, suggesting a 1% significance level. This result is robust after a sensitivity test, as depicted in Table 5. The coefficient and one-tailed p-value of *ABS\_DA\*CSRI* is -0.948 and 0.00 in Model 4, suggesting a 1% significance level. Therefore, *H4* is accepted in both models. This result tends to incline to earlier findings of Kim et al. (2014), who found that CSR performance lowers future stock crash risk, Pérez (2015), who found that CSR disclosure lower information asymmetry, thus further restricts the potential for managerial opportunism and builds stakeholder trust and Tzouvanas et al. (2020) who found that environmental disclosure dampens idiosyncratic risk.

When communication between the company and outside stakeholders improves, information asymmetry declines as more information flows beyond accounting information. CSR disclosure reduces asymmetric information and signals that companies emphasize their social and environmental practices (Tzouvanas et al., 2020). If the stock price reflects all available information,

then the information contained within CSR disclosure would have been reflected as well. *Ceteris paribus*, companies that exert more good news should've been able to maintain their stock price better than those that do not. A sudden drop in stock price is less likely for companies perceived to be socially responsible, commit to a high standard of transparency, and engage in less bad news hoarding (Kim et al., 2014). CSR disclosure helps to build and maintain investors' favor.

The stakeholder theory also suggests wider scrutiny from various stakeholders to prevent companies from engaging in detrimental practices and reduce manager opportunism. It helps prevent companies from engaging in damaging and costly practices that contribute to social conflict, litigation costs, labor strikes, and reputational costs. Koh et al. (2014) found that CSR disclosure can help a company reduce the probability of facing lawsuits. It can also help to improve governance quality within the company. More socially and environmentally responsible companies are more efficient, enjoy increased visibility, reduce operational costs, and develop strong bonds with ethical investors, employees, consumers, and government (Jones, 1995). Therefore, a positive impression is more likely to emit from companies that disclose their CSR than those that do not. Guenster et al. (2011) confirmed that investors prefer to invest in companies with good CSR performance. CSR disclosure helps to dispel several concerns over the use of discretionary accruals.

When companies become more aware of the moderating effect of CSR disclosure against the effect of AEM, they may purposefully disclose the better quality information and exert more good news to reduce market suspicion or save companies' reputations when restatement finally occurs (Zhang et al., 2020). Compared to REM, AEM is more detectable and an object of scrutiny by boards and auditors. Therefore, the probability of stock volatility arising from AEM can be higher than REM. In this case, savvy managers intentionally conditioned CSR disclosure to mask AEM or give insurance-like protection against the risk of detection.

The convergence of the world stock market allows diverse foreign investors from jurisdictions with higher social and environmental awareness to be involved in the domestic stock market and consider the information contained in CSR disclosures before incorporating stocks in the Indonesian stock exchange into their portfolios. As one of the main stakeholders, the demand from overseas investors for more disclosures and more sound business practices motivates local companies to improve the quality of their CSR disclosures. When managers can extract the benefit of CSR disclosure, the quality of the disclosures improves to contain important information for decision making. Companies that operate in emerging markets and increase the level and the quality of disclosure would be valued more positively than companies that operate in developed markets, where the requirements for disclosure are standardized and stricter. It would apply especially to companies with a greater need for external financing and positive market valuations, which would have to persuade capital providers about their future financial prospects and prudent governance procedures.

### 5.5. The impact of corporate social responsibility disclosure (CSR disclosure) on the association between real earnings management (REM) and idiosyncratic risk

As shown in Table 4, CSR disclosure has no moderating effect on the positive association between REM and idiosyncratic risk. The coefficient and one-tailed p-value of  $REM\_PROXY * CSRI$  is 0.015 and 0.386, respectively, in Model 2, which is above the highest  $\alpha$ -value of 10%. This result is robust after a sensitivity test, as depicted in Table 5. The coefficient and one-tailed p-value of  $REM\_PROXY * CSRI$  is -0.007 and 0.443, respectively, in Model 4, which is also more than the highest  $\alpha$ -value of 10%. Therefore,  $H5$  is overruled in both models. This result tends to decline the claims of Kim et al. (2014), Pérez (2015), and Tzouvanas et al. (2020) in the case of REM. This research finding suggests that, in the case of REM, more disclosure of information from management has not necessarily improved the company-stakeholder relationship.

Being more complicated and harder to detect, the real magnitude of REM is harder to estimate than AEM. It raises investors' major concern over the company's governance. The complexity of undertaking REM activities has led to a wider involvement of the company's various divisions from production, finance and accounting, sales and marketing, warehouse and inventories, etc. The agency theory suggests that the agency problem may involve multiple agents (Shapiro, 2005). Therefore, higher REM intensity raises a major cross-divisional governance issue exacerbated by lower scrutiny from boards, auditors, and regulators. As a result, another management's generated information, such as CSR disclosure, is least likely to sway investors' perception so that the effect of REM on idiosyncratic risk can be lowered.

When managers become more aware that CSR disclosure can hardly moderate the effect of REM on investors' decisions, they may intentionally withhold certain information related to REM from disclosure. Particularly because market suspicion of REM is enough to lead to a timely downward price adjustment (Francis et al., 2014), in this case, any disclosures that lead to the notions of the magnitude of REM (even if it is initially intended to dispel investors' concerns against REM) can be significantly detrimental and counter-productive for the company. AEM and FRA, on the other hand, are easier to detect. Thus, the company needs insurance-like protection against detection. Since the effect of AEM and FRA on idiosyncratic risk can be moderated by CSR disclosure, as this research suggests, therefore, it is productive to give particular emphasis on topics related to AEM and FRA, to enhance the moderating effect of CSR disclosure to mitigate investors' suspicion, or to save companies' reputation when restatement finally occurs (Zhang et al., 2020). Savvy managers intentionally conditioned CSR disclosure to mask REM or give insurance-like protection against the risk of detection of AEM and FRA.

Compared to AEM and FRA, REM is more difficult for average investors to understand. Investors will likely require more information from every related item of CSR disclosure (e.g., the risk mitigation, supply chain policy, consumption of

materials, etc.) to connect the puzzle and get the assurance they need to lowers the effect of REM. Indonesia's CSR disclosure is still more symbolic than actually containing substantive information. It causes CSR disclosure to fail to lower the information asymmetry between investors and managers in the case of REM, hence causing the effect of REM to hold. Not only endogenous to Indonesia, Bhatia and Makkar (2019) found that developing countries (Brazil, Russia, India, China, and South Africa) tend to have lower CSR disclosure compared to developed countries (the U.S.A and the U.K). The quality of CSR disclosure in Indonesia probably has not allowed a moderating effect on the positive association between REM and idiosyncratic risk.

In Indonesia and probably most developing economies, the gap between information quality and users' understandability has raised an issue of poor financial literacy. In a 2019 survey, Indonesia Financial Services Authority (OJK) reported that financial inclusion reaches 76.19%, while financial literacy is only 38.03% (OJK, 2020). This result suggested that almost half of users of financial products/services in Indonesia cannot employ adequate knowledge about finance. It also indicates that many investors involved in the capital market are struggling to understand and utilize the information produced by the companies. It is also likely to contribute to the absence of the moderating effect of CSR disclosure on complicated REM. Financial literacy enhances how investors understand financial statements and corporate disclosures to reduce stock price synchronicity (Liu & Zhang, 2017). Investors with poor financial literacy tend to make irrational decisions, implying the absence of proper analysis. The inability to comprehend and employ the information contained in CSR disclosure is likely to nullify the effect of that information because investors fail to take that information into account.

### 5.6. The impact of corporate social responsibility disclosure (CSR disclosure) on the association between fraudulent accounting (FRA) and idiosyncratic risk

As shown in Table 4, CSR disclosure weakens the positive association between FRA and idiosyncratic risk. The coefficient and one-tailed p-value of  $AI * CSRI$  are -0.035 and 0.011, respectively, in Model 2, suggesting a 5% significance level. This result is robust after a sensitivity test, as depicted in Table 5. The coefficient and one-tailed p-value of  $AI * CSRI$  are -0.034 and 0.012, respectively, in Model 4, suggesting a 5% significance level. Therefore,  $H6$  is accepted in both models. This result tends to incline to Scholtens and Kang (2012), Jo and Na (2012), Kim et al. (2014), and Tzouvanas et al. (2020). This result suggests that better CSR disclosure help dispel several concerns over the indication of FRA.

Frictionless communication between all key stakeholders remains crucial to detecting management's hidden agenda. CSR disclosure promotes transparency and accountability. Thus, companies establish a communication line to obtain information about potential fraud and deploy a coordinated approach to investigation and

corrective action to promptly address fraud. Companies may also exploit and communicate their fraud detection excellence as leverage to gain investors' trust and favor. Disclosing CSR performance help lower future stock crash risk (Kim et al., 2014). More effective communication and less information asymmetry allow investors to gradually adjust to irregularities detectable to them through piecemeal diversification of risk instead of discounting the already build up irregularities all at once, causing a sudden drop in stock performance.

CSR disclosure allows the outside stakeholder to employ knowledge absent from financial information to assess the company's overall risk and performance, such as fair business practices, human rights, labor standards, community and society, and anti-corruption (Wuttichindanon, 2017). Companies increasingly rely on CSR reports addressing stakeholders' increasing demands for transparency and accountability and information relating to a variety of risks and opportunities not evident from traditional reports (KPMG, 2008). Increased transparency and accountability also help prevent companies from engaging in damaging and costly practices that contribute to high litigation costs and reputational costs. Koh et al. (2014) found that CSR disclosure can help a company reduce the probability of facing lawsuits. More information disclosure also helps to increase investor protection and decrease manager opportunism to engage in earnings management (Scholtens & Kang, 2012). Hence, CSR participation can strengthen risk management and lower company risk (Jo & Na, 2012). Wider scrutiny from various stakeholders helps to brake on managers' transgression.

In an emerging market like Indonesia, weaker regulation and lower protection for investors have caused the quality of reported financial performance to become a major issue. The emerging market also displays lower compliance to regulations than developed markets, where company-level compliance and application can be far below the country-level corporate governance and investor protection regulations (Iatridis, 2012). However, this condition also allows companies in an emerging market to benefit from more disclosures. Companies that operate in emerging markets and increase the level and the quality of disclosure would be valued more positively than companies that operate in developed markets, where the requirements for disclosure are standardized and stricter. Companies' effort to reduce information asymmetry is also highly valued by investors, whereas companies with sound corporate governance in emerging markets tend to display higher market valuation and profitability. Especially in emerging markets, investors would be willing to pay more for companies that use effective corporate governance structures and provide valid accounting disclosures. Therefore, increasing voluntary disclosures are valued as more extraordinary without standardized obligation.

## 6. CONCLUSION

This research employs multiple linear regression to test each hypothesis and finds that higher intensity of AEM, REM and FRA escalate companies' idiosyncratic risk. The positive association between

AEM and idiosyncratic risk is attributable to the deteriorating earnings quality that raises investors' major concern over expected returns and whether the company is a going concern. As a response, investors may start to discount these uncertainties in the stock price. The positive association between REM and idiosyncratic risk is attributable to the manipulation of real activities that are hardly found by auditors and regulators and exacerbated as REM is exposed to fewer regulatory restrictions. It has raised investors' major concern over the quality of governance and expected future cash flows. Meanwhile, investors fail to make a gradual adjustment toward risk due to their ignorance, leading to a stock price crash. The positive association between FRA and idiosyncratic risk, on the other hand, is attributable to the violation of public trust through an excessive and abusive earnings management practice that raises investors' major concern over the company's sustainability due to poor governance, high litigation cost, unrecoverable reputation cost, and all other related costs. The collective act of investors giving up their shareholdings in a short period of time contributes to the sudden decline of stock price and increasing volatility.

This research demonstrates that managers may lower the effect of AEM and FRA on idiosyncratic risk by undertaking a proper CSR disclosure. However, this does not seem to apply to REM. Proper CSR disclosure may help increase transparency and accountability and lower information asymmetry between managers and investors in the case of AEM or allow more intense scrutiny from various stakeholders and provide insurance-like value protection in the case of FRA. However, in the case of REM, the major cross-divisions governance issue exacerbated by REM being harder to detect by

boards, auditors, and regulators works to nullify the effect of another management's generated information such as CSR disclosure that is supposed to be able to sway investors' perception on certain company's specific risks.

This research fills the existing gap within idiosyncratic risk study. The major difference this research has compared to previous studies lies in incorporating FRA as one of the independent variables and CSR disclosure as moderating variable in idiosyncratic risk study, especially using samples from emerging markets. By doing so, this research captured that risk is related to the success of achieving performance benchmarks and fulfilling the economy, environment, and social expectations of stakeholders, even in the emerging market. This research also raises awareness of the cost of idiosyncratic risk, especially in emerging markets with relatively smaller stock markets, making diversification more challenging. This research also provides insights to market regulators on how investors can benefit from more disclosures. Thus, emerging market regulators should ensure that CSR disclosure contains substantial information for decision-making through compulsory reporting standardization. Furthermore, this research offers investors several methods to estimate how much financial statement has deviated from normal, both in accounting and real activities manipulations.

The scope of this research is limited to the emerging market. Due to the lack of data from official rating institutions, this research conducts an independent scoring of CSR disclosure that might be prone to subjectivity. Future research should investigate the association between earnings management & idiosyncratic risk pre- and post-pandemic and whether the moderating effect of CSR disclosure holds during both of those periods.

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## APPENDIX

Table A.1. Variable descriptions

<i>Variable name</i>	<i>Descriptions</i>
<i>IR_FF3</i>	Idiosyncratic risk as measured by the Fama-French's (1993) three-factor model.
<i>IR_MM</i>	Idiosyncratic risk as measured by the market model.
<i>AEM</i>	Accrual earnings management ( <i>AEM</i> ) is estimated using the cross-sectional version of the Jones model, as modified by Kothari et al. (2005), otherwise known as performance-matched discretionary accruals.
<i>REM</i>	Real earnings management ( <i>REM</i> ) is estimated using a model developed by Roychowdhury (2006).
<i>FRA</i>	Fraudulent accounting ( <i>FRA</i> ) is estimated using the Beneish (1999) M-score model.
<i>CSRI</i>	Corporate social responsibility disclosure index ( <i>CSRI</i> ) is calculated as the aggregate score of disclosure (measured using the predetermined scale as in Lee (2015)) scaled by the total item of disclosure under GRI standards-2016.
<i>SIZE</i>	Company size ( <i>SIZE</i> ) is calculated as the natural logarithm of the total asset ( <i>t</i> ).
<i>LEV</i>	Financial leverage ( <i>LEV</i> ) is calculated as total debt ( <i>t</i> ) scaled by market capitalization ( <i>t</i> ).
<i>ROA</i>	Return on asset ( <i>ROA</i> ) is calculated as net income ( <i>t</i> ) scaled by the total asset ( <i>t</i> ).
<i>MOM</i>	Momentum ( <i>MOM</i> ) is calculated as the cumulative returns from month <i>t-12</i> to month <i>t-1</i> (1-month lag is to remove any effect of short-term reversal).
<i>BETA</i>	Market risk ( <i>BETA</i> ) is calculated using the capital asset pricing model (CAPM).
<i>TURN</i>	The trading turnover ratio ( <i>TURN</i> ) is calculated as the company's trading volume in month <i>t</i> scaled by the number of outstanding shares ( <i>t</i> ).
<i>PER</i>	Price-earnings ratio ( <i>PER</i> ) is calculated as stock price per share ( <i>t</i> ) scaled by earnings per share ( <i>t</i> ).
<i>CAPITAL</i>	The company's capital ( <i>CAPITAL</i> ) is calculated as net plant, property and equipment ( <i>t</i> ) scaled by total assets ( <i>t-1</i> ).
<i>AT</i>	Asset turnover ratio ( <i>AT</i> ) is calculated as net sales ( <i>t</i> ) scaled by average total assets ( <i>t</i> ).
<i>A_GROWTH</i>	Asset growth ( <i>A_GROWTH</i> ) is calculated as the difference between total assets in year <i>t</i> and <i>t-1</i> scaled by total assets of year <i>t-1</i> .
<i>S_GROWTH</i>	Sales growth ( <i>S_GROWTH</i> ) is calculated as the difference between net sales in year <i>t</i> and <i>t-1</i> scaled by net sales of year <i>t-1</i> .
<i>CFOVOL</i>	The volatility of cash flow from operating activities ( <i>CFOVOL</i> ) is calculated as the standard deviation of cash flows from operation between year <i>t-1</i> and <i>t-2</i> scaled by total assets ( <i>t</i> ).
<i>CURRENT</i>	The current ratio ( <i>CURRENT</i> ) is calculated as current assets ( <i>t</i> ) scaled by current liabilities ( <i>t</i> ).
<i>COGS</i>	Cost of goods sold ( <i>COGS</i> ) is calculated as the cost of goods sold ( <i>t</i> ) scaled by total sales ( <i>t-1</i> ).