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by Iman Harymawan

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Busy CEOs and financial reporting quality: evidence from Indonesia

Iman Harymawan, Mohammad Nasih and Nadia Klarita Rahayu
Faculty of Economics and Business, Universitas Airlangga, Surabaya, Indonesia
Khairul Anuar Kamarudin
Faculty of Business, University of Wollongong in Dubai, Dubai, United Arab Emirates, and
Wan Adibah Wan Ismail
Faculty of Accountancy, Universiti Teknologi Mara, Merbok, Malaysia

Abstract

Purpose – This study aims to examine the relationship between CEO busyness and financial reporting quality in a country which implements a two-tier board system.

Design/methodology/approach – This study includes firms listed on the Indonesian Stock Exchange during the 2010–2018 period. This study employs an ordinary least squares regression, the propensity score matching procedure, and a Heckman two-stage regression in testing the hypothesis.

Findings – This study finds that firms with busy directors have a higher financial reporting quality, and these results are robust to a battery or sensitivity analysis. The additional analyses also find that a busy CEO is negatively associated with the firm's financial reporting quality with decreasing income.

Practical implications – This paper provides implications for policy-makers in the emerging market on devising policies on CEOs' appointments, especially when involving multiple directorships. Despite the general belief on the detrimental workload effects of busy directors, this study offers evidence supporting the opposite effect.

Originality/value – As many previous studies focused on the effect of director busyness on firm's performance, this study focusses on the effect of CEO busyness on financial reporting quality. To the best of our knowledge, this study is the first to investigate this issue in an emerging market.

Keywords Busy CEO, Financial reporting quality, Governance, Multiple directorships

Paper type Research paper

1. Introduction

Multiple directorships, especially those involving CEOs, have increased scrutiny from academics and regulators (Ferris *et al.*, 2003). Empirical studies document conflicting results on the impact of busy directors on firm performance. Many researchers have argued that multiple directorships would increase the workload for the directors, reduce the time and attention that they can devote to each firm and cause poor management oversight, thereby supporting the busy hypothesis of detrimental workload effects (Ahn *et al.*, 2010; Core *et al.*, 1999; Jiraporn *et al.*, 2008). In contrast, the proponents of multiple directors propose the resource dependency theory and reputation hypothesis to support the effects of the beneficial connection in improving firm value and performance and signal the quality director (Ferris *et al.*, 2003; Field *et al.*, 2013). For instance, busy board members appear to be associated with better firm performance, corporate social responsibility and business opportunities (Beji *et al.*, 2021; Harymawan *et al.*, 2019).

The efficient contracting perspective predicts that, at least in the short term, CEOs will be less inclined to adopt measures that result in poor financial reporting quality for two reasons. First, credible CEOs will do themselves a disservice if they make accounting decisions that result in poor

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reporting quality. Furthermore, to prevent greater costs, respected CEOs are believed to have more knowledge than non-respected CEOs (Lafond, 2008). As per the efficient contracting hypothesis, enterprises led by well-known CEOs are expected to have higher profit quality. Second, managers may have a major economic impact on the expected characteristics of earnings management (Bamber *et al.*, 2010). Furthermore, CEOs with greater social network ties than other board members require higher-quality financial reporting, as shown by lower earnings management, potential restatements and internal flaws (Bhandari *et al.*, 2018). Francis *et al.* (2008), however, found data that contradicts the idea of efficient contracts.

Despite this controversy, we find that most studies are concentrated in the USA and developed markets, and primarily focused on independent directors. It is essential to evaluate this issue differently, considering the country's differences in culture and regulatory requirements (Aggarwal *et al.*, 2009; Ferris *et al.*, 2003). Most Asians are known to have introverted personalities compared to western countries. McCrae (2004) found that this personality is caused by tradition, conservatism and obedience. There are cultural differences, but Indonesia also has a different council system from western countries. Compared to the majority of western countries that use a one-tier board system, Indonesia uses a two-tier board system. This two-tier board system allows firms in Indonesia to have separate management and supervisory functions.

Our study aims to examine the relationship between CEOs with multiple directorships (hereafter busy CEOs) and financial reporting quality in an emerging market, that is, Indonesia. Indonesia provides a unique setting to examine this issue because Indonesia uses a two-tier board system. Several other countries also have the same board system as Indonesia: Germany, Austria, Poland, Denmark, Finland, Netherlands, Norway and Switzerland. One of the best representatives of the two-tier model is Germany because 50% of the members are outside (Aluchna, 2013). We provide different insights related to the two-tier setting with these differences. In addition, Indonesia also has a long history of political connections. These political connections can provide information regarding the level of transparency of firms, whether they hide some information to cover the benefits they get from their connections or whether they release it to increase their income (Leuz and Oberholzer-Gee, 2006).

Research related to financial reporting quality has been done previously (Bhuiyan *et al.*, 2020; Gerayli *et al.*, 2021; Shuraki *et al.*, 2020). However, an archival study examining the effect of a busy CEO on financial reporting quality provides minimal and mixed findings, resulting in a complex and incomplete understanding of the impact of having an active CEO. We allow arguments for both sides. First, as busy CEOs who serve on several board positions have limited time, they cannot adequately monitor the company and might neglect their responsibilities in certain instances. Second, as CEOs play an essential role in the quality of a company's financial reporting, reduced CEOs' management oversight exacerbates agency costs, increases litigation risk and leads to poor financial reporting quality.

Interestingly, our study employs an Indonesian sample that uses a two-tier board governance system compared to most countries that use a one-tier board system. The two-tier board governance system leads to the establishment of the boards of directors and commissioners. Compared to the one-tier board system, the general meeting of shareholders appoints a member from the board of directors to the president director or CEO, who has an equal position to all boards of directors. Further, the regulatory body of Indonesia's Financial Services Authority limits concurrent positions for directors. Members of the board of directors may hold several positions as members of the board of directors for at most one issuer or other public company and as members of the board of commissioners for at most three issuers or other public firms. Additionally, directors may hold a position as committee members for at most five committees as an issuer or as part of a public company, as members of the board of directors or as members of the board of commissioners. In Indonesia, busy CEOs have existed in public company governance practices. Previous research on busy CEOs shows that more than 50% of CEOs of public firms listed on the Indonesia Stock Exchange

are busy CEOs (Ratri *et al.*, 2021). This provides strong evidence that most CEOs in public firms in Indonesia hold at least two positions simultaneously.

In this study, we use a sample of Indonesian-listed firms from 2010 to 2018. We perform ordinary least squares regression with industry- and year-fixed effects. We also conduct extensive tests to examine the potential endogeneity of a busy CEO concerning financial reporting quality. We find robust evidence of a positive link between busy CEOs and financial reporting quality, even after employing the two-stage regression model. Our results contradict the busyness proposition that multiple directorships increase the CEOs' workload and divert their attention. Instead, our results imply that busy CEOs are competent, dedicated and highly experienced, thus enhancing the firm monitoring mechanism and leading to high-quality financial reporting. Our study corroborates the evidence supporting the resource dependency theory and reputation hypothesis.

To ensure the robustness of our results, we perform a battery of tests. We analyze the effect of the busy CEO on financial reporting quality by dividing the sample based on income increasing and income decreasing. We find that a busy CEO is negatively associated with the firm's financial reporting quality, particularly income decreasing strategy.

Our results contribute to the literature in several ways. First, this study adds to our understanding of the impact of CEO busyness in a developing economy, particularly in Indonesia, which follows a two-tier board governance system. Prior studies on board busyness have been limited to countries that use one-tier board systems that mainly employ samples from the USA (Ferris *et al.*, 2003; Fich and Shivdasani, 2006; Field *et al.*, 2013). Our findings add evidence to the issue of whether the findings from the US sample hold globally, especially with variances in corporate governance methods (Aggarwal *et al.*, 2009), legal requirements (La Porta *et al.*, 1998) and culture (Hofstede, 1983). Second, our findings provide new insights into the influence of busy directors on the financial reporting quality of the firm. The empirical results are mixed, and corporate governance theory does not provide clear insights into whether busy board members improve the quality of corporate financial reporting. Our research adds to the debate over whether busier boards represent better directors or distracted directors by providing new evidence from a previously unstudied set of firms. Finally, this study provides empirical evidence that is important to board design and regulatory settings. Our findings imply that being a busy director could not be perceived as a bad thing for a company, particularly in a two-tier governance system. When recruiting new CEOs, businesses must understand the new' CEO's outside obligations and the ability to focus on their job.

The remainder of this paper is organized as follows. Section 2 discusses the existing literature and develops the hypotheses. Section 3 examines the research design and sample selection procedures. The results are reported in Section 4, and Section 5 offers conclusions and explains the work's limitations.

2. Literature review

2.1 Two-tier board system in Indonesia

Governance practices in Indonesia differ from those in other countries that use a one-tier board system. Under a one-tier board system, the board of directors provides managerial and supervisory responsibilities. The one-tier board normally comprises the CEO, executive director, chairman or president director and independent directors. Furthermore, some boards have their chairman serving as CEO, while others have separate chairman and CEO responsibilities. In a one-tier board arrangement, the CEO is a member of the company's top management and is in charge of day-to-day operations, while the board of directors does not have direct authority over these activities. As the board appoints the CEO, the board's chairman has greater standing than the CEO in circumstances where the CEO and chairman

positions are separated. This is different in the context of Indonesia's two-tier board governance system.

Firms in Indonesia follow a two-tier board governance system that comprises boards of directors and boards of commissioners. As defined by Indonesia's Financial Services Authority, the board of directors is the authorized body solely accountable for the operation of a public business. Meanwhile, the board of commissioners is responsible for general and specific monitoring, as well as providing advice to the board of directors, in accordance with the articles of association.

The general meeting of shareholders elects and dismisses boards of directors. A public company's board of directors must consist of at least two members. Subsequently, a general meeting of shareholders appoints one member from the board of directors as the president director or CEO. As a senior member or group representative, the CEO is responsible for coordinating the board of directors' actions. Additionally, the CEO is responsible for building a constructive environment that encourages discussion and decision-making and ensuring that all members of the board of directors are qualified to contribute to the organization's mission. Proposals for the general meeting of shareholders for the appointment, removal and replacement of members of the board of directors must consider the recommendations of the board of commissioners or the nominating committee.

Indonesia has created regulations with many conditions for concurrent positions on the board of directors. They can also serve on the boards of directors with no more than three issuers or public businesses. The directors may also serve on no more than five committees within the issuer or public corporation, as well as be members of the board of directors or commissioners. Moreover, as previously stated, numerous posts can only be held if they do not clash with other laws and regulations.

2.2 Hypotheses development

The review of board busyness literature reveals mixed evidence on the debate over the benefits and costs of multiple directorships, particularly the detrimental workload effects (Gray and Nowland, 2018; Méndez *et al.*, 2016) and the effects of the beneficial connection (Lee and Lee, 2014; Sarkar and Sarkar, 2009; Xia *et al.*, 2019). The busyness hypothesis and agency theory could explain the detrimental workload effects, while the effects of the beneficial connection were proposed based on resource dependency theory and the reputation hypothesis. Disentangling these effects on firm performance has been proven to be complicated. Some studies report a favorable effect of busy directors on the firm (Larcker *et al.*, 2013; Perry and Peyer, 2005), while others report the opposite effect (Falato *et al.*, 2014; Fich and Shivdasani, 2007; Jiraporn *et al.*, 2009b). Some studies found no relationship between busy directors and firm performance (Ferris *et al.*, 2003; Kiel and Nicholson, 2006).

2.2.1 The detrimental workload effects. A group of scholars has supported the notion of the detrimental effect of board busyness on firms (Cashman *et al.*, 2012; Jiraporn *et al.*, 2008; Lin *et al.*, 2014; Liu and Paul, 2015). For the busyness hypothesis, multiple directorships would reduce directors' time and attention to any individual board (Ferris *et al.*, 2003). Additionally, as a result of having finite time and energy, busy directors tend to overcommit in fulfilling their monitoring tasks, resulting in unfavorable performance (Ahn *et al.*, 2010; Fama and Jensen, 1983; Fich and Shivdasani, 2006; Jiraporn *et al.*, 2009b). Further, directors might shift the time and energy spent on their home firm to the outside board firm (Conyon and Read, 2006).

From the agency theory's perspective, managers' personal goals and objectives typically diverge from shareholders' (Jensen and Meckling, 1976). Joining other boards would maximize their perquisites, such as perks and compensation, increased prestige, internal or external promotions and entrenchment at the home firm (Khan and Mauldin, 2021). The

empirical evidence shows negative abnormal returns following the executive's appointment to an outside board, implying investor concerns that executives would neglect their duties (Rosenstein and Wyatt, 1994). Adding more responsibility to the already packed' director's schedule would lead to high opportunity costs for busy executives (Perry and Peyer, 2005).

Extensive empirical evidence supports the busyness hypothesis and agency theory argument on the detrimental effect of board busyness on firms. Several studies have found that board busyness has adverse effects on firm performance (Cashman *et al.*, 2012; Devos *et al.*, 2009; Liu and Paul, 2015) and firm value (Ahn *et al.*, 2010; Falato *et al.*, 2014; Fich and Shivdasani, 2006; Jiraporn *et al.*, 2008). Busy directors are also associated with high agency problems. For example, busy directors serve fewer board committees (Jiraporn *et al.*, 2009b), have a high absence rate of board meetings (Jiraporn *et al.*, 2009a) and have a greater likelihood of financial statement fraud (Beasley, 1996), and poor governance and monitoring (Falato *et al.*, 2014). Moreover, firms with busy directors tend to pay high CEO compensation (Core *et al.*, 1999), grant a deep diversification discount (Jiraporn *et al.*, 2008) and are exposed to high risk (Cooper and Uzun, 2012).

2.2.2 The beneficial connections effects. Furthermore, competing arguments are developed based on resource dependency theory and the reputation hypothesis that busy directors benefit firms. The resource dependency view perceives that busy directors have a comprehensive network of contacts and have a remarkable ability to tap into rich networks and access resources, which can be favorable to firms (Arioğlu and Kaya, 2015; Pfeffer and Salancik, 1978). Busy directors also possess more experience and skills, especially in offering advice, counsel and insights from various perspectives (Adams *et al.*, 2010; Field *et al.*, 2013). Ferris *et al.* (2017) also argue that the social capital of networked directors leads to greater transparency, stricter contract enforcement and more efficient managerial decision-making.

In addition, the reputation hypothesis argues that multiple directorships are a consequence or a signal of director reputation, quality and skill to the external labor market of directors (Fama and Jensen, 1983; Sarkar and Sarkar, 2009). Busy directors' appointment also signals firm legitimacy (Pfeffer and Salancik, 1978). Certo (2003) argued that busy directors, who are prestigious, have greater perceived legitimacy, as they are more capable of ensuring firm performance and survival. Busy directors also provide firms with critical human and social capital. The human capital of busy directors includes an important firm or industry experience or information about a firm's industry, customers or suppliers. Their social capital helps the firm update its current external environment assessment (Certo, 2003) and recruit managerial talent (Rosenstein *et al.*, 1993). As busy directors confer greater access to resources through their superior human and social capital, improved perceptions of corporate legitimacy and effective advising and oversight, their service on corporate boards is highly desired. Regardless of their nation of incorporation or site of major operations, all firms desire directors who bring networking opportunities, legitimacy and advising/monitoring skills and, therefore, seek out experienced directors.

Outside directorship supports the knowledge transfer argument that busy directors would improve the home firm's strategic investments, capital management and overall performance (Khan and Mauldin, 2021). Outside directorship exposes directors to strategic policymaking by another firm, such that executives can learn from other directors to identify and develop high-quality decisions for their firms (Burt, 2000; Granovetter, 1973). In addition to gaining experience and problem-solving knowledge via multiple directorships, prior research has also found that directors seek advice from outside contacts, ultimately improving firm performance (McDonald *et al.*, 2008a, b).

Consistent with the above arguments, prior studies find that board busyness is positively associated with firm performance (Brickley *et al.*, 1999; Farrell and Whidbee, 2000; Gilson, 1990; Harford, 2003; Kaplan and Reishus, 1990; Yermack, 2004). Other studies found that

director busyness helps enhance firm value (Ferris *et al.*, 2003), lowers the cost of debt (Chakravarty and Rutherford, 2017) and alleviates agency problems (Perry and Peyer, 2005). Cook and Wang (2011) find that busy directors have the superior ability and outperform those with only one directorship in terms of trade behaviors. In a merger context, busy directors are important sources of knowledge that enhance acquisition performance. For instance, an acquirer with busy directors exhibits higher returns, while target firms with busy directors record high merger premium bids (Cotter *et al.*, 1997). At the country level, Lee and Lee (2014) show that multiple directorships are beneficial, especially in countries with weaker corporate governance.

The above conflicting evidence on the effect of busy directors on firm outcomes is mainly from US firms or other developing countries, such as Italy (Di Pietra *et al.*, 2008), Germany (Andres *et al.*, 2013) and Australia (Méndez *et al.*, 2015). Nevertheless, evidence from emerging markets is limited, for instance, in Colombia (Pombo *et al.*, 2011) and India (Sarkar and Sarkar, 2009). We conjecture that the effects of multiple directorships differ across countries owing to cultural norms and legal or regulatory differences (Hofstede, 1983). Hence, it is desirable to examine CEO busyness in a unique setting. We extend prior studies by focusing on the effect of busy CEOs on financial reporting quality, which is the output of firm governance and monitoring functions. To our knowledge, our study is the first to investigate whether CEO busyness affects financial reporting quality, proxied by discretionary accruals. We posit that the effect of CEO busyness on financial reporting quality is rooted precisely in the role of multiple directorships in influencing firm governance and monitoring in reconciliation between detrimental workload and beneficial connection effects. Building upon the aforementioned arguments and evidence, we test the following hypothesis:

HI. There is a relationship between a busy CEO and a firm's financial reporting quality.

3. Research design

3.1 Data and sample

Our sample covers all Indonesian-listed firms from 2010 to 2018. We collect the data from various sources: financial and accounting data from the Orbis database, CEO busyness from the Bloomberg database and data on corporate governance from the company's annual report accessed through the Indonesian Stock Exchange website. The list of all variables, definitions and data sources is reported in Table 1.

We excluded financial institutions (SIC codes between 6600 and 6999) due to the different nature of this industry, similar to the approach used in prior research (Francis and Wang, 2008; Kamarudin *et al.*, 2020). We also delete missing or incomplete observations and winsorized all continuous variables at the 1 and 99% levels to mitigate the influence of outliers. The procedure leaves us with a sample of 1,934 firm-year observations.

3.2 Measurements

Financial reporting reflects the responsibilities of a business entity to its resources, thus providing a basis for evaluating managerial roles and economic decisions (Gerayli *et al.*, 2021). For financial reporting quality, we first estimate the absolute value of residuals from Jones (1991), the modified model based on Dechow *et al.* (2015) and the modified model based on Larcker and Richardson (2004) [1]. The absolute value of discretionary accruals effects of increasing income and decreasing earnings management decisions (Warfield *et al.*, 1995). We determine AQ1, AQ2 and AQ3 by multiplying the negative one with the absolute value of

Variables	Definition	Source
Dependent variable		
AQ1	The absolute value of residual from the Jones model multiplied by negative one	ORBIS
AQ2	The absolute value of residual from the modified Jones model multiplied by negative one	ORBIS
AQ3	The absolute value of residual from the Larker model multiplied by negative one	ORBIS
Independent variable		
BUSY	A dummy variable that takes value 1 if the CEO holds three or more other directorships and 0 otherwise	Bloomberg
Control variables		
BDSIZE	The natural logarithm of the total members on the board of directors and board of commissioners	Annual report
INDCOM	The ratio of independent commissioners in the firm to the total number of commissioners	Annual report
RMC	A dummy variable that takes value 1 if the firm has established a risk management committee and 0 otherwise	Annual report
TENURE	A dummy variable that takes value 1 if the CEO has served the firm for more than 5 years and 0 otherwise	Bloomberg
FSIZE	The natural logarithm of the total assets at the end of the year	ORBIS
LEV	The ratio of total debt to total assets	ORBIS
LISTAGE	The natural logarithm of the number of years since the firm was listing on the Indonesia Stock Exchange (IDX)	ORBIS
GROWTH	The difference between total assets and lag total assets divided by lag total assets	ORBIS
ROA	The ratio of net income to total assets	ORBIS
CASH	The ratio of cash and cash equivalent to total assets	ORBIS
INVREC	The ratio of total inventory and receivable to total assets	ORBIS
BIG4	A dummy variable that takes value 1 if the firm is audited by one of the Big 4 and 0 otherwise	Annual report
Additional variables		
CEOAGE	A dummy variable that takes value 1 if the CEO's age is more than 60 years and 0 otherwise	Bloomberg
AUDFEE	The natural logarithm of the total audit fees paid to the auditor	Annual report
AUDFEEDUM	A dummy variable that takes value 1 if total audit fees paid to the auditor is above median and 0 otherwise	Annual report
COMMDUM	A dummy variable that takes value 1 if the ratio of independent commissioners in the firm to the total number of commissioners above median and 0 otherwise	Annual report

Table 1.
Variable definition

residuals from Jones (1991), the modified model based on Dechow *et al.* (2015) and the modified model based on Larcker and Richardson (2004), respectively. Following Iyengar *et al.* (2010), we multiply the absolute value of accruals by a negative one so that smaller values, values closer to zero represent a higher quality of earnings and larger accruals (values further away from zero) are indicative of a lower quality of earnings. For additional analysis, we use unadjusted values for discretionary accruals. For the independent variable, CEO busyness, following Fich and Shivdasani (2006), Core *et al.* (1999), Ferris *et al.* (2003), Pathan *et al.* (2019) and Harymawan *et al.* (2019), we define *BUSY* as a dummy variable that takes a value of one if the CEO holds three or more other directorships and zero otherwise.

3.3 Regression model

We regress equation (1) below to investigate the effect of busy CEOs on financial reporting quality. Multivariate regressions are presented below.

$$\begin{aligned}|DACC|_{i,t} = {} & \beta_0 + \beta_1 BUSY_{i,t} + \beta_2 BDSIZE_{i,t} + \beta_3 INDCOM_{i,t} + \beta_4 RMC_{i,t} \\ & + \beta_5 TENURE_{i,t} + \beta_6 FSIZE_{i,t} + \beta_7 LEV_{i,t} + \beta_8 GROWTH_{i,t} \\ & + \beta_9 ROA_{i,t} + \beta_{10} CASH_{i,t} + \beta_{11} INVREC_{i,t} + \beta_{12} BIG4_{i,t} \\ & + \theta_{1-n} Year\ effects + \delta_{1-n} Industry\ effects + \varepsilon\end{aligned} \quad (1)$$

where $|DACC|$ are earnings quality measures based on negative one multiplied by the absolute value of residuals from Jones (1991) model, the modified Jones model by Dechow *et al.* (2015) and the modified Jones model by Larcker and Richardson (2004), *BUSY* is a dummy variable that takes value 1 if the CEO serves in more than three firms, 0 otherwise; *BDSIZE* is the natural logarithm for the number of board members compared to the board of commissioners in the company; *INDCOM* is the percentage of independent commissioners in the company; *RMC* is a dummy variable that takes value 1 if there is a risk management committee within the company and 0 otherwise; *TENURE* is a dummy variable that is 1 if the CEO who has served for more than five years in the company and 0 otherwise; *FSIZE* is the natural logarithm of the total assets at the end of the year; *LEV* is the ratio of total debt divided to total assets; *GROWTH* is the difference between total assets and lag total assets divided by the lag total assets; *ROA* is the ratio of net income to total assets; *CASH* is the ratio of cash and cash equivalent to total assets; *INVREC* is the ratio of total inventory and receivable to total assets; *BIG4* is a dummy variable that takes value 1 if the firm was audited by any of the Big4 audit firms and 0 otherwise; *Year effects* and *Industry effects* are controls for year and industry effects, respectively; and other variables are as previously defined.

A brief explanation of the control variables used in the regression analysis follows. We control for several board characteristics that are likely to affect firm governance. Consistent with the work of Fich and Shivdasani (2006), we control for board size (*BDSIZE*), board independence (*INDCOM*), the existence of risk and management committees (*RMC*) and CEO tenure (*TENURE*). Previous studies, such as those by Warfield *et al.* (1995), Dechow *et al.* (2015), DeFond and Jiambalvo (1994) and Klein (2002), found that a firm's size is negatively associated with earnings management. This is evident from the results of the analysis. We also include *FSIZE* to control for the differences in the accrual behaviors of managers of large and small firms (Dechow and Dichev, 2002; Van Tendeloo and Vanstraelen, 2005). *LEV* controls risk (Burgstahler and Dichev, 1997), where firm LEV is positively associated with discretionary accruals, as DeFond and Jiambalvo (1994) find that firms manage earnings before debt covenant violations. *GROWTH* captures the possible difference in accruals' behavior between firms with high and low. We also control for *ROA* because profitable firms have higher accrual quality (Wan Ismail *et al.*, 2015). We expect a negative coefficient of *BIG4*, consistent with the argument that high-quality auditors constrain earnings management (Becker *et al.*, 1998). We also include cash holdings (*CASH*) and inventory and receivable intensity (*INVREC*) to control differential discretionary accruals in a firm with large cash holdings and high inventory and receivable intensity. Finally, we control for industry and year effects.

4. Results and discussion

4.1 Descriptive statistics

Table 2 presents the distribution of busy CEOs by industry. The statistics revealed that 718 out of 1,934 were categorized as busy CEOs. The highest number of busy CEOs is from the construction industry (161), followed by transportation, communications and utilities (158), while the construction industry has the lowest proportion. The health, legal, educational and

Panel A: sample distribution based on the Jones model

Industry	Busy N	Busy %	Non-busy N	Non-busy %	Total N	Total %
(SIC 0) Agriculture, Forestry and Fisheries	31	34.07	60	65.93	91	100
(SIC 1) Mining	116	42.80	155	57.20	271	100
(SIC 2) Construction Industries	161	29.65	382	70.35	543	100
(SIC 3) Manufacturing	112	36.84	192	63.16	304	100
(SIC 4) Transportation, Communications and Utilities	158	44.51	197	55.49	355	100
(SIC 5) Wholesale and Retail Trade	52	32.30	109	67.70	161	100
(SIC 7) Service Industries	71	41.04	102	58.96	173	100
(SIC 8) Health, Legal, and Educational Services and Consulting	17	47.22	19	52.78	36	100
Total	718	37.13	1,216	62.87	1,934	100

Panel B. Descriptive statistics based on Jones model

Variable	Obs	Mean	Std. Dev	Min	Max
AQ1	1,934	−0.037	0.026	−0.145	−0.001
AQ2	1,929	−0.035	0.021	−0.118	−0.001
AQ3	1,771	−0.038	0.026	−0.162	−0.001
BUSY	1,934	0.371	0.483	0.000	1.000
BDSIZE	1,934	2.157	0.338	1.386	2.944
INDCOM	1,934	0.368	0.140	0.000	0.750
RMC	1,934	0.159	0.366	0.000	1.000
TENURE	1,934	0.516	0.500	0.000	1.000
FSIZE	1,934	28.657	1.621	23.161	32.043
LEV	1,934	0.562	0.343	0.040	3.241
GROWTH	1,934	0.163	0.401	−0.439	5.623
ROA	1,934	0.028	0.091	−0.351	0.373
CASH	1,934	0.082	0.089	0.001	0.543
INVREC	1,934	0.250	0.192	0.007	0.810
BIG4	1,934	0.388	0.487	0.000	1.000
CEOAGE	1,934	0.246	0.431	0.000	1.000
AUDFEE	719	20.640	1.234	17.910	24.334
AUDFEEDUM	719	0.537	0.499	0.000	1.000
COMMDUM	1,934	0.849	0.359	0.000	1.000

Table 2.
Sample distribution and descriptive statistics

consulting services recorded a higher percentage (47.22%), while the construction industry had the lowest proportion (29.65%).

Table 2 reports the descriptive statistics for all variables. The mean values for *AQ1*, *AQ2* and *AQ3* are −0.037, −0.035 and −0.038, respectively. *BUSY* has a mean value of 0.371, indicating that 37.1% of the sample has a busy CEO. The mean values for *RMC* and *TENURE* are 0.159 and 0.516, respectively, indicating that 15.9% of the sample has established a risk management committee, and 51.6% of the firms were led by CEOs who have served for more than five years in the company. The mean values for the governance variables *BDSIZE* and *INDCOM* are 2.157 and 36.766, respectively. For other control variables *FSIZE*, *LEV*, *GROWTH*, *ROA*, *CASH* and *INVREC* are 28.657, 0.562, 0.163, 2.759, 0.082 and 0.250, respectively. The mean values for *BIG4* and *CEOAGE* are 0.388 and 0.246, respectively, showing that the Big4 audit firms audited 38.8% of the sample, and 24.6% was led by CEOs older than 60 years old.

We also performed correlation tests on the variables tabulated in Table 3. The results show a high correlation among financial reporting proxies, in which the correlation between AQ3 and AQ1 was 0.971, while the correlation between AQ2 and AQ1 was 0.9. In addition, the results show a significant correlation between *BUSY* and *AQ1*, consistent with our prediction

Table 3.
Pearson correlation

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
[1] *AQ1*	1.000								
[2] *AQ2*	0.937*** (0.000)	1.000							
[3] *AQ3*	0.972*** (0.000)	0.917*** (0.000)	1.000						
[4] *BUSY*	−0.040* (0.059)	−0.035 (0.100)	−0.029 (0.197)	1.000					
[5] *BDSIZE*	−0.047** (0.034)	−0.030 (0.173)	−0.051** (0.027)	0.042** (0.016)	1.000				
[6] *INDCOM3*	0.001 (0.972)	0.031 (0.169)	−0.020 (0.397)	−0.013 (0.458)	0.027 (0.130)	1.000			
[7] *RMC*	−0.001 (0.963)	0.007 (0.745)	−0.015 (0.502)	−0.028* (0.092)	0.263*** (0.000)	−0.025 (0.155)	1.000		
[8] *TENURE*	−0.063*** (0.003)	−0.032 (0.144)	−0.043* (0.058)	0.131*** (0.000)	0.053*** (0.003)	0.069*** (0.000)	−0.060*** (0.000)	1.000	
[9] *FIRMSIZE*	0.002 (0.909)	0.038* (0.080)	−0.015 (0.500)	−0.113*** (0.000)	0.634*** (0.000)	0.079*** (0.000)	0.346*** (0.000)	−0.051*** (0.001)	1.000
[10] *LEVERAGE*	0.083*** (0.000)	0.072*** (0.001)	0.080*** (0.000)	0.055*** (0.001)	−0.077*** (0.000)	0.051*** (0.004)	0.017 (0.314)	0.002 (0.879)	−0.115*** (0.000)
[11] *GROWTH*	0.227*** (0.000)	0.146*** (0.000)	0.255*** (0.000)	0.074*** (0.000)	−0.028 (0.111)	−0.024 (0.180)	−0.043** (0.011)	−0.032* (0.056)	−0.039** (0.018)
[12] *ROA*	−0.078*** (0.000)	−0.090*** (0.000)	−0.076*** (0.001)	−0.022 (0.166)	0.226*** (0.000)	−0.075*** (0.000)	0.074*** (0.000)	0.009 (0.596)	0.129*** (0.000)
[13] *CASHTA*	−0.044** (0.041)	−0.053** (0.015)	−0.037 (0.103)	−0.028* (0.085)	0.147*** (0.000)	−0.021 (0.235)	0.067*** (0.000)	−0.038** (0.018)	0.004 (0.799)
[14] *INVREC*	−0.095*** (0.000)	−0.098*** (0.000)	−0.056** (0.015)	−0.028* (0.093)	−0.070*** (0.000)	−0.038** (0.038)	−0.086*** (0.000)	0.103*** (0.000)	−0.230*** (0.000)
[15] *BIG4*	0.015 (0.480)	0.014 (0.535)	−0.000 (0.987)	−0.014 (0.410)	0.414*** (0.000)	0.029 (0.104)	0.230*** (0.000)	−0.013 (0.444)	0.422*** (0.000)
[16] *CEOAGE*	0.002 (0.913)	0.019 (0.373)	0.006 (0.801)	−0.042*** (0.009)	0.060*** (0.001)	0.019 (0.282)	−0.029* (0.084)	0.129*** (0.000)	0.077*** (0.000)
[17] AUDFEE	−0.065* (0.072)	−0.059 (0.108)	−0.067* (0.072)	0.167*** (0.000)	0.506*** (0.000)	−0.023 (0.443)	0.344*** (0.000)	−0.116*** (0.000)	0.694*** (0.000)
[18] *AUDFEEDUM*	−0.015 (0.471)	−0.039* (0.070)	−0.013 (0.553)	0.149*** (0.000)	0.036** (0.043)	0.007 (0.710)	−0.028* (0.092)	−0.050*** (0.002)	−0.015 (0.335)
[19] *COMMDUM*	−0.004 (0.868)	0.022 (0.308)	−0.027 (0.226)	0.087*** (0.000)	−0.026 (0.132)	0.715*** (0.000)	−0.034** (0.039)	0.100*** (0.000)	−0.032** (0.045)

	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]
[10] *LEVERAGE*	1.000								
[11] *GROWTH*	−0.040** (0.017)	1.000							
[12] *ROA*	−0.319*** (0.000)	0.076*** (0.000)	1.000						
[13] *CASHTA*	−0.206*** (0.000)	0.064*** (0.000)	0.322*** (0.000)	1.000					
[14] *INVREC*	0.048*** (0.005)	−0.021 (0.231)	0.165*** (0.000)	−0.084*** (0.000)	1.000				
[15] *BIG4*	−0.081*** (0.000)	−0.028 (0.111)	0.217*** (0.000)	0.123*** (0.000)	0.024 (0.184)	1.000			
[16] *CEOAGE*	−0.020 (0.214)	−0.078*** (0.000)	−0.050*** (0.002)	−0.052*** (0.001)	−0.009 (0.605)	−0.030* (0.084)	1.000		
[17] *AUDFEE*	0.068** (0.021)	−0.051* (0.087)	0.191*** (0.000)	0.117*** (0.000)	−0.233*** (0.000)	0.546*** (0.000)	−0.107*** (0.000)	1.000	
[18] *AUDFEEDUM*	0.067*** (0.000)	0.030* (0.071)	0.041*** (0.010)	0.033** (0.042)	−0.036** (0.033)	0.139*** (0.000)	−0.089*** (0.000)	0.777*** (0.000)	1.000
[19] *COMMDUM*	0.014 (0.393)	0.016 (0.344)	−0.045*** (0.005)	−0.011 (0.478)	0.052*** (0.002)	0.014 (0.400)	−0.006 (0.695)	−0.094*** (0.001)	−0.014 (0.397)

Note(s): *, ** and *** represent significance at $p < 0.10$, <0.05 and <0.01, respectively. *t*-values are reported in the parentheses. See Table 1 for the variable definitions

that there is a relationship between busy directors and a firm's financial reporting quality. We also find that AQ1 was positively associated with *TENURE*, *ROA* and *INVREC*, but negatively associated with *LEV and GROWTH*. Overall, we find that the correlations among the independent variables are relatively low, indicating that multicollinearity is unlikely to be an issue in multivariate regression analyses [2].

4.2 Main results

Table 4 presents the regression estimates for the three proxies for financial reporting quality. The results in columns (1), (2) and (3), the estimation of AQ1, AQ2 and AQ3, respectively, show positive and significant coefficients for *BUSY*, suggesting that busy CEOs result in high-quality financial reports.

This result contradicts the busyness proposition that increasing the CEOs' workload would reduce the CEO's available time and attention, leading to low-quality financial reporting. Our results support the argument that busy CEOs would bring benefits, as evidenced by producing better-quality financial reports, supporting prior research (e.g. Beasley, 1996; Cotter *et al.*, 1997; Ferris *et al.*, 2003). Our finding is consistent with earlier findings that firms with busy CEOs exhibit positive signals for quality directors (Ferris *et al.*, 2003; Field *et al.*, 2013), which is associated with high firm performance, corporate social responsibility and more business opportunities (Beji *et al.*, 2021; Harymawan *et al.*, 2019). A plausible explanation is that busy CEOs tend to overcommit and focus on surface issues such as firm compliance (Abebe *et al.*, 2020) and are less likely to commit fraud (Beasley, 1996).

For the control variables, we find that financial reporting quality is positively associated with *RMC*, *FSIZE and CASH*, but negatively associated with *LEV*, *GROWTH* and *BIG4*. In the equation, we control for several board characteristics that are likely to affect a firm's governance. Consistent with the work of Fich and Shivdasani (2006), we control for *BDSIZE*, *INDCOM* and *TENURE*, but we do not find any significant relationship between them. Previous studies, such as those by Warfield *et al.* (1995), Dechow *et al.* (2015), DeFond and

Variable	AQ1 (1)	AQ2 (2)	AQ3 (3)
CONSTANT	−0.069*** (−4.836)	−0.060*** (−5.264)	−0.071*** (−4.670)
BUSY	0.003** (2.453)	0.002* (1.787)	0.002** (1.999)
BDSIZE	−0.000 (−0.005)	−0.000 (−0.186)	0.000 (0.016)
INDCOM	0.002 (0.522)	−0.000 (−0.121)	0.006 (1.133)
RMC	0.002* (1.680)	0.002* (1.682)	0.003** (2.217)
TENURE	0.002 (1.625)	0.001 (1.287)	0.001 (0.916)
FSIZE	0.001** (2.101)	0.001** (2.037)	0.001* (1.748)
LEV	−0.004** (−2.111)	−0.003* (−1.885)	−0.004** (−2.182)
GROWTH	−0.018*** (−7.717)	−0.011*** (−5.808)	−0.019*** (−7.472)
ROA	0.014 (1.600)	0.009 (1.364)	0.017* (1.843)
CASH	0.017** (2.033)	0.011* (1.716)	0.010 (1.196)
INVREC	0.004 (0.876)	0.004 (1.158)	−0.001 (−0.244)
BIG4	−0.005*** (−3.982)	−0.004*** (−3.613)	−0.004*** (−3.385)
Industry effects	Included	Included	Included
Year effects	Included	Included	Included
Adj. R^2	0.196	0.269	0.208
F-stat	13.675	23.593	13.100
N	1934	1929	1771

Note(s): *, ** and *** represent significance at $p < 0.10$, <0.05 and <0.01, respectively. *t*-values are reported in the parentheses. See Table 1 for the variable definitions

Table 4.
CEO busyness and financial reporting quality

Jiambalvo (1994) and Klein (2002), found that *FSIZE* is negatively associated with earnings management, which is contradictory to our results.

4.3 Endogeneity issue

In the main analysis presented before, possible unobserved variables can affect CEO busyness and financial reporting quality. Unobserved variables are known as variables that are not included in the main regression model but may have a relationship with the dependent variable. Therefore, it may be not only a CEO's busyness related to financial reporting quality. Consequently, we use Heckman's two-stage regression to solve this problem.

4.3.1 Heckman's two-stage regression. In the first stage, we estimate equation (2), a probit regression to explain the determinants of busy CEOs. We include *CEOAGE* as an instrumental variable. People's age can affect their decision-making abilities, risk-taking behavior, career problems and economic incentives. Compared with younger people, older people have more experience making decisions when faced with complex and ambiguous tasks (Worthy *et al.*, 2011). Therefore, older CEOs are trusted to hold more positions. The estimated parameters from the Probit regression are used to calculate the inverse Mills ratio (*MILLS*), which is then included as an additional explanatory variable in the second-stage OLS regression model. The first-stage probit regression is estimated as follows:

$$\begin{aligned} BUSY_{i,t} = {} & \beta_0 + \beta_1 CEOAGE_{i,t} + \beta_2 BDSIZE_{i,t} + \beta_3 INDCOM_{i,t} + \beta_4 RMC_{i,t} + \beta_5 TENURE_{i,t} \\ & + \beta_6 FSIZE_{i,t} + \beta_7 LEV_{i,t} + \beta_8 GROWTH_{i,t} + \beta_9 ROA_{i,t} + \beta_{10} CASH_{i,t} \\ & + \beta_{11} INVREC_{i,t} + \beta_{12} BIG4_{i,t} + \theta_{1-n} Year\ effects + \delta_{1-n} Industry\ effects + \varepsilon \end{aligned} \quad (2)$$

where CEOAGE is a dummy variable that takes a value of one if the CEO is older than or equal to 60 years old and zero otherwise, and all variables are as previously defined. Table 5 reports the results of the Heckman's two-stage regression. We include all control variables, and we also use both industry- and year-fixed effects. Based on the results presented in column (1) of Table 5, the CEO is positively related to all measures of financial reporting quality that we propose. These results indicate that CEOs who are older would produce better financial reports owing to their increased experience.

Panel B of Table 5 shows the results of the second-stage regression. The results reveal that the coefficients for *BUSY* are positively significant, providing support for our main results. Based on these results, we can confirm a positive relationship between CEO busyness and financial reporting quality, even after addressing endogeneity issues.

We also use *AVERAGEBUSY* as an instrumental variable. We predict that firms tend to hire CEOs with a level of activity equivalent to the busyness of CEOs in peer firms.

$$\begin{aligned} BUSY_{i,t} = {} & \beta_0 + \beta_1 AVERAGEBUSY_{i,t} + \beta_2 BDSIZE_{i,t} + \beta_3 INDCOM_{i,t} + \beta_4 RMC_{i,t} \\ & + \beta_5 TENURE_{i,t} + \beta_6 FSIZE_{i,t} + \beta_7 LEV_{i,t} + \beta_8 GROWTH_{i,t} + \beta_9 ROA_{i,t} \\ & + \beta_{10} CASH_{i,t} + \beta_{11} INVREC_{i,t} + \beta_{12} BIG4_{i,t} + \theta_{1-n} Year\ effects \\ & + \delta_{1-n} Industry\ effects + \varepsilon \end{aligned} \quad (3)$$

where *AVERAGEBUSY* is the average of Busy CEO in the same industry and year. We include all control variables, and we also use both industry- and year-fixed effects. Based on the results presented in column (1) of Table 6, the *AVERAGEBUSY* is positively related to all measures of financial reporting quality that we propose.

Table 5.
CEO busyness and financial reporting quality – Heckman model (instrument var: CEOAGE)

First-stage		Second-stage			
	BUSY		AQ1	AQ2	AQ3
Variable	(1)	Variable	(2)	(3)	(4)
CONSTANT	−1.918*** (−2.578)	CONSTANT	−0.126*** (−4.313)	−0.091*** (−3.841)	−0.134*** (−4.134)
CEOAGE	0.144** (2.002)	BUSY	0.003** (2.511)	0.002* (1.825)	0.002** (2.020)
BDSIZE	0.185 (1.464)	BDSIZE	0.004 (1.435)	0.002 (0.905)	0.006* (1.760)
INDCOM	−0.006*** (−2.643)	INDCOM	−0.009 (−1.403)	−0.007 (−1.310)	−0.008 (−1.132)
RMC	−0.043 (−0.464)	RMC	0.001 (0.865)	0.001 (1.044)	0.001 (0.705)
TENURE	0.133** (2.115)	TENURE	0.005*** (2.679)	0.003** (1.964)	0.005** (2.329)
FSIZE	0.032 (1.089)	FSIZE	0.002*** (2.830)	0.001** (2.455)	0.002** (2.411)
LEV	0.031 (0.322)	LEV	−0.003* (−1.660)	−0.002 (−1.527)	−0.005** (−2.197)
GROWTH	0.090 (1.201)	GROWTH	−0.016*** (−6.660)	−0.010*** (−4.995)	−0.017*** (−6.388)
ROA	−0.001 (−0.163)	ROA	0.012 (1.466)	0.009 (1.334)	0.009 (0.973)
CASH	−0.134 (−0.332)	CASH	0.013 (1.565)	0.009 (1.305)	0.005 (0.596)
INVREC	0.269 (1.375)	INVREC	0.009* (1.734)	0.007* (1.702)	0.005 (0.849)
BIG4	0.077 (1.078)	BIG4	−0.004** (−2.474)	−0.003** (−2.520)	−0.002 (−1.237)
		MILLS	0.027** (2.286)	0.015 (1.587)	0.031** (2.258)
Industry effects	Included	Industry effects	Included	Included	Included
Year effects	Included	Year effects	Included	Included	Included
Pseudo R^2	0.043	Adj. R^2	0.198	0.270	0.210
Wald χ^2	110.88	*F*-stat	13.312	22.792	12.942
N	1934	*N*	1934	1929	1771

Note(s): *, ** and *** represent significance at $p < 0.10$, <0.05 and <0.01, respectively. *t*-values are reported in the parentheses. See Table 1 for the variable definitions

Table 6. CEO busyness and financial reporting quality – Heckman model (instrument var: AVERAGEBUSY)

First-stage		Second-stage			
Variable	BUSY (1)	Variable	AQ1 (2)	AQ2 (3)	AQ3 (4)
CONSTANT	−2.871*** (−3.800)	*CONSTANT*	−0.089*** (−4.963)	−0.075*** (−5.137)	−0.088*** (−4.770)
AVERAGEBUSY	2.571*** (4.610)	*BUSY*	0.003*** (2.590)	0.002* (1.915)	0.003** (2.121)
BDSIZE	0.185 (1.474)	*BDSIZE*	0.001 (0.578)	0.001 (0.422)	0.002 (0.647)
INDCOM	−0.557** (−2.446)	*INDCOM*	−0.002 (−0.318)	−0.003 (−0.858)	0.002 (0.346)
RMC	−0.063 (−0.688)	*RMC*	0.002 (1.411)	0.002 (1.395)	0.003* (1.840)
TENURE	0.156** (2.493)	*TENURE*	0.003** (2.155)	0.002* (1.811)	0.002 (1.480)
FSIZE	0.034 (1.177)	*FSIZE*	0.001** (2.458)	0.001** (2.380)	0.001** (1.984)
LEV	0.039 (0.404)	*LEV*	−0.004* (−1.950)	−0.003* (−1.712)	−0.004** (−2.189)
GROWTH	0.078 (1.029)	*GROWTH*	−0.017*** (−7.331)	−0.010*** (−5.482)	−0.019*** (−7.210)
ROA	0.006 (0.015)	*ROA*	0.013 (1.551)	0.009 (1.347)	0.015 (1.618)
CASH	−0.189 (−0.470)	*CASH*	0.016* (1.884)	0.010 (1.542)	0.009 (1.043)
INVREC	0.259 (1.321)	*INVREC*	0.006 (1.214)	0.005 (1.483)	0.000 (0.067)
BIG4	0.069 (0.959)	*BIG4*	−0.005*** (−3.442)	−0.003*** (−3.106)	−0.004*** (−2.779)
		MILLS	0.009 (1.624)	0.007 (1.479)	0.008 (1.403)
Industry effects	Included	Industry effects	Included	Included	Included
Year effects	Included	Year effects	Included	Included	Included
Pseudo R^2	0.049	Adj. R^2	0.198	0.270	0.209
Wald χ^2	117.57	*F*-stat	13.410	22.768	12.707
N	1,934	*N*	1,934	1,929	1,771

Note(s): *, ** and *** represent significance at $p < 0.10$, <0.05 and < 0.01, respectively. *t*-values are reported in the parentheses. See Table 1 for the variable definitions

Panel B of Table 6 shows the results of the second-stage regression. The results also reveal that the coefficients for *BUSY* are positively significant, providing support for our main results. Based on these results, we obtain the consistent result where CEO busyness is positively related to financial reporting quality.

4.3.2 Propensity score matching. We use propensity score matching (PSM) for potential problems caused by differences in observable firm characteristics between firms with BUSY and Non-BUSY CEOs. The PSM approach will produce a sample where the treatment firm and control firm are similar to help eliminate the possibility of omitted correlated variables driving our result (Hope *et al.*, 2013). The PSM method is applied using logit regression and a replacement matching algorithm.

In the main analysis, matching the sample using "one to many" matches would potentially reduce the quality of some matches (DeFond *et al.*, 2015). To overcome this concern, we match firms with busy CEOs to a set of control firms with non-busy CEOs to evaluate treatment effects. We use the propensity score matching technique to control firm-level characteristics, as developed by Rosenbaum and Rubin (1983) [3]. We estimate equation (A4) and applied a condition on the highest propensity caliper to remove dissimilar matched pairs if the difference in the propensity scores (probabilities) is greater than 0.001.

This procedure reduces the sample to 1,160 firm-year observations, consisting of 580 firm-year observations of firms with busy CEOs and 580 firm-year observations from the control group. The results, as reported in columns (1), (2) and (3) of Table 7, show qualitatively similar results to those reported earlier. We find evidence of higher financial reporting quality in firms managed by busy CEOs, supporting our main findings.

4.4 Additional analysis

We further analyze whether CEO busyness is associated with an increase or decrease in income strategies, as well as real earnings management.

Variable	AQ1 (1)	AQ2 (2)	AQ3 (2)
CONSTANT	−0.059*** (−3.389)	−0.049*** (−3.596)	−0.066*** (−3.391)
BUSY	0.003** (2.075)	0.002* (1.668)	0.004** (2.399)
BDSIZE	−0.000 (−0.067)	−0.000 (−0.112)	0.000 (0.067)
INDCOM	0.005 (0.861)	0.002 (0.387)	0.009 (1.519)
RMC	0.002 (0.976)	0.002 (1.188)	0.004** (2.074)
TENURE	0.003** (2.155)	0.002* (1.949)	0.003* (1.862)
FSIZE	0.001 (1.092)	0.000 (0.885)	0.001 (0.882)
LEV	−0.003 (−0.945)	−0.002 (−0.970)	−0.002 (−0.779)
GROWTH	−0.017*** (−5.513)	−0.010*** (−3.961)	−0.018*** (−5.345)
ROA	0.017* (1.684)	0.012 (1.442)	0.022* (1.929)
CASH	0.018* (1.720)	0.013 (1.577)	0.014 (1.282)
INVREC	−0.003 (−0.425)	−0.002 (−0.503)	−0.009 (−1.418)
BIG4	−0.005*** (−3.346)	−0.004*** (−3.127)	−0.004** (−2.528)
Industry effects	Included	Included	Included
Year effects	Included	Included	Included
R-squared	0.190	0.275	0.191
Adjusted R^2	0.171	0.258	0.170
F-stat	9.048	17.377	8.681
N	1,160	1,156	1,057

Note(s): *, ** and *** represent significance at $p < 0.10$, <0.05 and <0.01, respectively. *t*-values are reported in the parentheses. See Table 1 for the variable definitions

Table 7.
CEO busyness and financial reporting quality: Propensity score matching method

4.4.1 Income increasing and income decreasing. As discretionary accruals can be used to conceal company performance (DeFond and Park, 1997), we investigate the effect of CEO busyness on financial reporting quality by dividing the sample into income decreasing and income increasing strategies. Income decreasing is a condition where the income reported by the company is lower than it should be, or when the discretionary accrual value is negative. Conversely, income increase is a condition where the income reported by the company is higher than it should be, or when the value of discretionary accruals is positive. Prior studies (e.g. Tham *et al.*, 2019) found that firms involved in abnormal accruals that increase earnings have a significant negative relationship with the average number of multiple directors.

Table 8 presents the regression estimates for the three different proxies for income decreasing and income increasing strategies. The results in columns (1), (2) and (3), estimations for income decreasing show positive and significant coefficients for *BUSY*, suggesting that firms with busy CEOs have a greater likelihood of pursuing an income decreasing strategy. For columns (4), (5) and (6), we find insignificant coefficients for *BUSY*. Overall, the results show that busy CEOs are linked to earnings decreasing strategies rather earnings increasing strategies.

5. Conclusion

This study finds that a busy CEO is positively related to financial reporting quality, supporting the argument that busy CEOs have a strong motivation to maintain their reputation, including high-quality financial reporting. This finding is robust to several sensitivity tests on endogeneity issues, particularly propensity score matching and the Heckman two-stage regression. We further find robust evidence of the positive effect of busy CEOs on financial reporting quality in both sub-samples of Big4 and non-Big4 and long tenure and short-tenure CEOs. However, analysis of the samples partitioned by audit fees and independent commissioners shows that busy CEOs only positively affect subsamples of high audit fees and high independent commissioners. We also find that firms with busy CEOs tend to pursue earning-decreasing strategies despite the high quality of reporting.

These results have several implications for both investors and practitioners. First, our findings show that busy CEOs lead to higher financial reporting quality, which helps investors to make proper considerations when making an investment decision. Second, this study has helped us determine that busy directors will be increasingly motivated to positively correlate with financial reporting quality based on the results shown in the sub-sample distribution presented. Finally, understanding the effect of busy directors, workload and connections on firm performance has implications for regulators and firms. However, this study is subject to a limitation in that the sample concentrates on firms listed on the Indonesian Stock Exchange.

Future research may explore different legal and institutional environments because CEOs' motivations and incentives to report high-quality reporting might vary in different environments. Additionally, future research could explore other CEOs' attributes, such as expertise and experience. The researcher could also perform an in-depth analysis of how organizational factors moderate this relationship (Ferris *et al.*, 2003). We believe that the research presented in this study can be meaningfully extended and generate further insights into the value effects of director busyness. For instance, one could study the value implications of busy boards as a firm moves through its life cycle or as its equity ownership changes. Another line of research could focus on the market, compensation and demographics of networked directors who sit on multiple boards.

Table 8.
Additional analyses: income increasing and income decreasing

	Income decreasing (DA < 0)			Income increasing (DA > 0)		
Variable	AQ1 (1)	AQ2 (2)	AQ3 (3)	AQ1 (4)	AQ2 (5)	AQ3 (6)
CONSTANT	−0.141*** (−8.621)	−0.106*** (−8.079)	−0.139*** (−7.988)	0.006 (0.276)	−0.003 (−0.158)	0.002 (0.090)
BUSY	0.003*** (2.531)	0.002* (1.927)	0.003*** (2.599)	0.001 (0.706)	0.001 (0.806)	−0.000 (−0.173)
BDSIZE	−0.004* (−1.915)	−0.002 (−1.266)	−0.004 (−1.613)	0.003 (0.772)	0.001 (0.192)	0.002 (0.615)
INDCOM	0.004 (0.968)	0.004 (1.214)	0.006 (1.178)	−0.003 (−0.347)	−0.006 (−0.807)	0.003 (0.293)
RMC	0.000 (0.138)	−0.001 (−0.416)	0.001 (0.938)	0.004* (1.785)	0.005** (2.521)	0.004* (1.819)
TENURE	0.001 (1.295)	0.001 (1.135)	0.001 (0.884)	0.003* (1.890)	0.002 (1.169)	0.003* (1.834)
FSIZE	0.003*** (5.283)	0.002*** (4.206)	0.003*** (4.561)	−0.000 (−0.457)	−0.000 (−0.059)	−0.000 (−0.319)
LEV	−0.001 (−0.608)	0.000 (0.065)	−0.002 (−0.940)	−0.008** (−2.153)	−0.008** (−2.376)	−0.010** (−2.418)
GROWTH	−0.015*** (−5.006)	−0.009*** (−4.828)	−0.018*** (−8.121)	−0.024*** (−6.500)	−0.014*** (−4.038)	−0.021*** (−4.369)
ROA	0.028*** (3.309)	0.025*** (3.766)	0.029*** (3.299)	−0.025* (−1.785)	−0.032*** (−2.667)	−0.018 (−1.157)
CASH	0.051*** (5.889)	0.031*** (4.781)	0.042*** (4.878)	−0.047*** (−3.385)	−0.024** (−2.070)	−0.044*** (−2.908)
INVREC	0.053*** (10.368)	0.032*** (8.588)	0.049*** (8.266)	−0.058*** (−9.492)	−0.036*** (−6.751)	−0.063*** (−9.089)
BIG4	−0.005*** (−3.889)	−0.003*** (−3.162)	−0.005*** (−3.704)	−0.002 (−0.979)	−0.003 (−1.446)	−0.002 (−0.781)
Industry effects	Included	Included	Included	Included	Included	Included
Year effects	Included	Included	Included	Included	Included	Included
Adj. R^2	0.353	0.356	0.375	0.413	0.419	0.388
F-stat	22.578	25.864	23.641	16.457	15.537	13.241
N	1,227	1,265	1,111	707	664	660

Note(s): *, ** and *** represent significance at $p < 0.10$, <0.05 and <0.01, respectively. *t*-values are reported in the parentheses. See Table 1 for the variable definitions

Notes

1. The estimations were carried out for each industry based on 10 SIC industry classifications with a minimum of six observations per industry.
2. Multi-collinearity is likely to be a concern when the pair-wise correlation between the two variables exceeds 0.80 (Gujarati, 1995).
3. Shipman *et al.* (2017) argued that propensity score matching does not address most concerns relating to self-selection or endogeneity, hence it is inaccurate to suggest that the procedure is an alternative to Heckman (1979) type selection models.
4. Compared to prior studies such as DeAngelo (1986) and Healy (1985), Jones (1991) applied the discretionary portion of accruals to capture earning management rather than the discretionary portion of a single accrual account. Previous studies assumed that nondiscretionary accruals are constant from period to period.

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Appendix 1

Accounting Quality Models

First, we use Jones (1991) discretionary accruals (DA) model to estimate earnings management [4].

We define accruals (ACC) as the difference between net income (NI) and operating cash flows (OCF) and estimate equation (A1) below for all firms in the same industry (using five broad industry classifications) each year to derive the non-discretionary component of total accruals (NDA):

$$\frac{Accruals_t}{A_t} = \alpha_0\left(\frac{1}{A_{t-1}}\right) + \alpha_1\left(\frac{\Delta Sales_t}{A_{t-1}}\right) + \alpha_2\left(\frac{PPE_t}{A_{t-1}}\right) + \varepsilon_t \tag{A1}$$

where $\Delta Sales_t$ is the change in operating revenue from t–1 to year t, and PPE_t is the total property, plant and equipment. DACC3 is the residual from equation (A1). All variables are deflated by lagged total assets to control for heteroscedasticity.

Second, we use Dechow *et al.*'s (2015) discretionary accruals (DA) model to estimate earnings manipulation. In equation (A2), we modified the sales change variable defined as $\Delta Sales_t - \Delta Debtors_t$, where $\Delta Debtors_t$ is the change in the accounts receivable we extracted changes in *Debtors* from changes in *Sales*:

$$\frac{Accruals_t}{A_t} = \alpha_0\left(\frac{1}{A_{t-1}}\right) + \alpha_1\left(\frac{\Delta Sales_t - \Delta Debtors_t}{A_{t-1}}\right) + \alpha_2\left(\frac{PPE_t}{A_{t-1}}\right) + \varepsilon_t \tag{A2}$$

where all variables are as defined above.

Finally, we employed Larcker and Richardson (2004) discretionary accruals model, which assumes that market expectations of future growth could place greater pressure on management and current performance could create incentives to engage in earnings management. As presented in equation (A3), the model includes two additional variables: BM as a proxy for expected growth in the firm operations and current operating cash flows (CFO) to control current operating performance.

$$\frac{Accruals_t}{A_t} = \alpha_0\left(\frac{1}{A_{t-1}}\right) + \alpha_1\left(\frac{\Delta Sales_t - \Delta Debtors_t}{A_{t-1}}\right) + \alpha_2\left(\frac{PPE_t}{A_{t-1}}\right) + \alpha_3(BM_t) + \alpha_4\left(\frac{CFO_t}{A_{t-1}}\right) + \varepsilon_t \tag{A3}$$

Appendix 2
Real Earnings Management Models

To calculate the real earnings management, we perform an estimation of cash flows from operating activities, estimation of discretionary costs and estimation of production costs.

First, we estimate the cash flow from operating activities using equation (A4). Abnormal operating cash flow (Abn_Cfop) is calculated as the difference between actual cash flows from operations and the expected rate for each firm-year (Cohen *et al.*, 2008). However, in this case, the abnormality is defined as the standard residual (Chi *et al.*, 2011), as in the following equation:

$$\frac{Cfop_t}{Assets_{t-1}} = \alpha_0\left(\frac{1}{Assets_{t-1}}\right) + \alpha_1\left(\frac{Sales_t}{Assets_{t-1}}\right) + \alpha_2\left(\frac{\Delta Sales_t}{Assets_{t-1}}\right) + \varepsilon_t \quad \text{(A4)}$$

where Cfop is the cash flow from operating activities for the firm i in period t.

Second, we estimate the discretionary costs using equation (A5). Abnormal discretionary spending (Abn_Discexp) is calculated as the difference between the actual and expected discretionary spending levels for each firm-year (Cohen *et al.*, 2008). However, in this case, the abnormality is defined as the standard residual (Chi *et al.*, 2011), as in the following equation:

$$\frac{Discexp_t}{Assets_{t-1}} = \alpha_0\left(\frac{1}{Assets_{t-1}}\right) + \alpha_1\left(\frac{Sales_{t-1}}{Assets_{t-1}}\right) + \varepsilon_t \quad \text{(A5)}$$

where Discexp is the additional expenditure as the sum of R&D, SG&A and advertising firm i expense in period t.

Last, we estimate the discretionary costs using equation (A6). Overproduction (Abn_Prod) is formulated as the difference between the actual cost of production and the expected level for each firm-year (Cohen *et al.*, 2008). However, in this case, the abnormality is defined as the standard residual (Chi *et al.*, 2011), as in the following equation:

$$\frac{Prod_t}{Assets_{t-1}} = \alpha_0\left(\frac{1}{Assets_{t-1}}\right) + \alpha_1\left(\frac{Sales_t}{Assets_{t-1}}\right) + \alpha_2\left(\frac{\Delta Sales_t}{Assets_{t-1}}\right) + \alpha_3\left(\frac{\Delta Sales_{t-1}}{Assets_{t-1}}\right) + \varepsilon_t \quad \text{(A6)}$$

Product is the cost of production as the sum of the cost of goods sold and changes in inventory for the firm i in period t.

Corresponding author
Iman Harymawan can be contacted at: harymawan.iman@feb.unair.ac.id

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