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Article

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Cogent Business & Management

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Taylor & Francis Group

Suggested Citation: Suwardi, Eko; Saragih, Arfah Habib (2023) : The effect of tax risk on audit report delay: Empirical evidence from Indonesia, Cogent Business & Management, ISSN 2331-1975, Taylor & Francis, Abingdon, Vol. 10, Iss. 1, pp. 1-19, <https://doi.org/10.1080/23311975.2023.2192315>

This Version is available at:

<https://hdl.handle.net/10419/294343>

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To cite this article: Eko Suwardi & Arfah Habib Saragih (2023) The effect of tax risk on audit report delay: Empirical evidence from Indonesia, Cogent Business & Management, 10:1, 2192315, DOI: [10.1080/23311975.2023.2192315](https://doi.org/10.1080/23311975.2023.2192315)

To link to this article: <https://doi.org/10.1080/23311975.2023.2192315>



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ACCOUNTING, CORPORATE GOVERNANCE & BUSINESS ETHICS | RESEARCH ARTICLE

The effect of tax risk on audit report delay: Empirical evidence from Indonesia

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Received: 17 February 2023
Accepted: 14 March 2023

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Abstract: Tax risk has the potential to have far-reaching economic consequences, including the effect on late audit reports. This study aims to empirically investigate the effect of tax risk on audit report lag. This study took a quantitative approach. Companies listed on the Indonesia Stock Exchange (IDX) between 2012 and 2017 were used as samples. Our final observations consist of 1,813 firm-years. We find that the tax risk has no effect on audit report lag. This finding holds up when one alternative measure of tax risk and several additional control variables are considered. The result of this study has clear implications not only for company management but also for tax authority. Company management is required to always implement good tax risk management practices because this can result in a relatively low corporate tax risk. A relatively minor tax risk will have no effect on auditors' performance in completing audit work so that companies can submit their financial reports on time. Furthermore, the tax authority benefits because the finalization of tax collection settlement is improved. Tax authority is encouraged to always maintain tax regulations that are not overly complex, complicated, or change too frequently.

Subjects: Auditing; Corporate Governance; Risk Management

Keywords: Tax risk; tax uncertainty; audit report lag; timeliness of financial reporting; emerging country

JEL Classifications: H20; H26; M41; M10; M00

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1. Introduction

The phenomenon associated with audit report lag is a global phenomenon that occurs in companies in many countries, including both developed and developing countries. Delays in submitting the auditor's opinion on the correctness and fairness of the company's financial statements have the potential to increase uncertainty in decision making by various interested parties. Furthermore, timeliness is recognized as one of the fundamental characteristics of financial information that makes it useful. The important objective of accounting information is to aid the users of financial reporting to generate an accurate decision (Al-Ebel et al., 2020; Alsmady, 2022). Given the importance of timely financial reporting to investors and other stakeholders, determining the causes of the recent audit report delay is critical. The purpose of this research is to re-examine the impact of tax risk on audit report lag.

Several previous studies have identified a variety of determinants of audit report lag (Abernathy et al., 2017; Durand, 2019; Habib et al., 2019). These factors include corporate governance characteristics (Afify, 2009; Lajmi & Yab, 2021), audit committees (Oussii & Boulila Taktak, 2018; Raweh et al., 2021; Sultana et al., 2015), chief accounting officers (Hsu & Khan, 2019), and internal control systems (Belina, 2022; Gontara et al., 2022; Munsif et al., 2012). Other determinants also include accounting standards (Cho & Krishnan, 2021; Habib, 2015; Khlif & Achek, 2016; Zhou et al., 2022), earnings volatility (Bryan & Mason, 2020), firm-level political risk (Hossain & Mitra, 2022), litigation against clients (Liu et al., 2021), audit firm industry specialization (Yeboah et al., 2023), the COVID-19 pandemic (Bajary et al., 2023), and tax avoidance (Gontara & Khlif, 2020). Studies discussing the impact of tax avoidance on audit report lag have indeed been carried out (Asiriwuwa et al., 2021; Crabtree & Kubick, 2014; Gontara & Khlif, 2020). However, it is important to understand that tax avoidance and tax risk are two different constructs (Gallemore & Labro, 2015; Drake et al., 2017; Hamilton & Stekelberg, 2017; Lin et al., 2019; Neuman et al., 2020; Saragih & Ali, 2021).

Despite the well-established determinants of audit report lag, very few studies appear to have looked into the impact of tax risk on audit report lag (see the literature review presented by Saragih & Ali, 2021). Knechel and Payne (2001) contend that the presence of a contentious corporate tax issue causes a longer audit report lag. Knechel and Payne's (2001) study, on the other hand, does not explicitly focus the discussion on the concept of tax risk (tax uncertainty). Abernathy et al. (2019) state unequivocally that tax risks increase late audit reports. However, their research is limited to listed firms in the developed country (the United States) from 2003 to 2015.

Abernathy et al. (2019) study encourages researchers to investigate whether similar findings apply in Indonesia. We contend that the findings of these studies cannot be extrapolated to publicly traded companies in developing countries. We believe that this study is significant, feasible, and worthy of replication. Re-examination will be useful for synthesizing, combining, and expanding knowledge of specific phenomena (J. H. Block et al., 2022), which will ultimately help to place academic discussions on a solid foundation because it is supported by a variety of empirical evidence (J. Block & Kuckertz, 2018). Re-examination is still required for disciplines to develop more meaningfully and to bridge the gap between practice and theory (J. Block & Kuckertz, 2018).

The purpose of this study is to broaden our understanding of the factors that influence audit report lag by focusing on tax risk as the primary predictor and utilizing the context of a growing country. On the one hand, in Indonesia, there has been an issue of reducing the corporate income tax rate (from 25% to 22%) released by the government. The issue of declining corporate tax rates has the potential to create tax uncertainty (tax risk). Previous studies have found that institutional factors influence the firm's tax risks. Tax rules and regulations are examples of institutional factors (Towery, 2017). This potential tax risk could result in a longer audit report lag (Abernathy et al., 2019). On the other hand, there is a possibility that the tax risk of companies in Indonesia (as a developing country) is also relatively smaller so that it does not have an impact on audit report lag. Prior study states that firms in developing countries are less likely to engage in tax avoidance

than firms in developed countries (Zeng, 2019). Firms that are less aggressive in their tax avoidance face less tax risk, and vice versa (Dyreng et al., 2019). Therefore, whether the tax risk drives longer audit report lag in Indonesia is an important open empirical question that we address in our study.

Furthermore, the significance of this study stems from the fact that there has not been a significant amount of research done on the relationship between tax risk and audit report lag (Saragih & Ali, 2021). We argue that it is critical to understand the causes of audit lag in order to mitigate it as much as possible and thus produce timely information. There is no clear link between tax risk and audit report lag in listed firms from developing countries, according to existing research (Saragih & Ali, 2021). We attempt to fill this gap by investigating the effect of tax risk on audit report lag in a developing country. This is something new that can be provided in this study.

We used a sample of companies listed on the Indonesia Stock Exchange (IDX) from 2012 to 2017 to put our research question to the test. The total number of observations is 1,813 firm-years. From our study, we found that tax risk has no effect on audit report lag. One possible explanation is that corporate tax risk is relatively low in Indonesia. Some factors can contribute to this relatively low tax risk. Companies may have well-implemented tax management and tax risk management. In addition, there is a possibility that the complexity of corporate tax planning in Indonesia is low enough that the amount of effort expended by the auditor to investigate the client's tax accounts, including potential tax risk, is not increased. Finally, there is a possibility that the complexity of tax regulations set by the Indonesian tax regulator is low.

This study makes several contributions. Our study adds to the existing literature by documenting a finding that contradicts previous research (see Abernathy et al., 2019). Our finding also adds to the growing body of knowledge on the intersection of corporate tax risk and auditing. From a practical standpoint, this study shows that well-implemented corporate tax risk management practices have the potential to result in lower tax risk, which benefits both the company and the tax authority.

The remainder of this paper is organized as follows. Section 2 examines the literature on audit report lag, tax risk, and developing research hypothesis. Section 3 describes the research methods. Section 4 includes descriptive statistics, correlation matrices, and details on the study's main finding. This section also goes over the study's finding and implications. Section 5 discusses robustness checks. Section 6 contains the study's conclusions, limitations, and suggestions for future research.

2. Literature review and hypothesis development

2.1. Audit report lag

The distance between the company's fiscal year-end period and the date of the audit report is defined as audit report lag. Many previous studies have documented the factors that contribute to audit report lag (Abernathy et al., 2017; Durand, 2019; Habib et al., 2019). Aspects of good corporate governance play critical roles in reducing audit report lag (Fakhfakh Sakka et al., 2016; Waris & Haji Din, 2023). According to Knechel and Payne's (2001), one of the main determinants of audit report delay is additional audit effort (e.g. audit hours). Singh et al. (2022) found that companies with overburdened auditors take longer to complete audits and have lower levels of financial reporting quality. Waris and Haji Din (2023) reported that auditor brand name decreases audit report lag. Habib et al. (2019) classified meta-analysis studies on the factors influencing audit report lag into three categories: audit and audit-related factors, corporate governance-related factors, and firm-specific determinants. Meanwhile, Durand (2019) stated in his literature review that audit report lag is related to various factors such as audit complexity, types of audit opinions, factors related to other audit work, various auditor characteristics, and auditor business risk

measures. Auditor business risk is the risk that audit firms will incur losses as a result of the engagement, including potential litigation (Durand, 2019). In relation to the auditor's business risk, it appears that the company's tax risk may also play a role.

According to Knechel and Payne's (2001), companies with contentious tax issues have a longer audit report lag. This is possible because complex and complicated tax situations can have a direct impact on financial statements and must be resolved prior to issuing an audit opinion (Knechel & Payne, 2001). Then, Abernathy et al. (2019) found that tax risk is positively related to audit report delays at publicly listed companies in the United States. Tax risk is viewed by the auditor as an additional risk component for tax avoidance activities, which has the potential to exacerbate audit report lag. This is also related to the fact that auditors are required by auditing standards to perform risk assessments for their clients as part of the audit planning process (Abernathy et al., 2019). To summarize, while there has been a substantial amount of research into the causes of audit report lag, there is very little empirical evidence examining the relationship between tax risk and audit report lag (see Saragih & Ali, 2021).

2.2. Tax risks

Deloitte (2017) the issue of corporate taxation is increasingly becoming the focus of regulatory, media, and public scrutiny. Corporate tax management, while capable of producing results in the form of tax savings, can also result in tax risks (tax uncertainty). On the one hand, risk-taking is a topic that has been researched for many years (Almustafa et al., 2023; Thi Pham & Thi Dao, 2022). On the other hand, the concept of corporate tax risk (tax uncertainty) is relatively new and has not grown significantly in comparison to previous research on tax avoidance (Abernathy et al., 2019; Saragih & Ali, 2021).

Arlinghaus (1998) defines tax risk as the possibility that tax outcomes differ from those expected for a variety of reasons, including judicial proceedings, changes in laws, changes in business assumptions, increased audit intensity, uncertainty in the interpretation of laws, and any actions taken by the tax function that expose the company to negative publicity. Several previous studies have reported on the determinants of tax risk, such as internal governance (Beasley et al., 2021; H. Chen et al., 2020), managerial ability (Saragih & Ali, 2023), in-house tax department (X. Chen et al., 2021), and auditors providing tax services (Watrin et al., 2019), in accordance with this definition. The company's tax risk is also determined by institutional factors. The institutional environment and tax supervision (W. Chen, 2020), as well as tax rules and regulations (Towery, 2017), are among these institutional factors.

Tax risks can have far-reaching consequences for businesses (see Saragih & Ali, 2021). Tax risk is an important factor in investors' evaluation of tax avoidance; if tax risk is low, the market reaction to tax avoidance will be positive (Drake et al., 2017). In addition, in the context of the debt market, tax risk raises the cost of debt, and the impact of tax avoidance on the cost of debt is also affected by the level of tax risk (Kovermann, 2018). Tax risk influences business investment (W. Chen, 2021), stock prices (Campbell et al., 2019), general company risk (Lin et al., 2019), and overall company value (Jacob & Schütt, 2020; Moore, 2021). Tax risk has an impact on the quality (Alsadoun et al., 2018) and readability of financial reports (Nguyen, 2020). As previously stated, tax risk is also closely related to audit report lag (Abernathy et al., 2019).

2.3. Hypothesis development

Companies' timely release of financial information is an important aspect of financial reporting that plays a critical role in facilitating decision making by various parties, particularly investors. However, the presence of various tax risks may result in audit report delays (Abernathy et al., 2019). Auditors are required to identify, confirm, and assess various potential tax risks associated with the company as a client as part of a financial statement audit. If this is not done, the corporate tax risk may expose the auditor to negative publicity, causing the auditor's reputation to suffer. As a result, auditors must evaluate the fairness of various transactions as well as the

potential tax risks that may result. The possibility of auditors reporting material tax-related weaknesses in the client's internal control is related to tax risk (Abernathy et al., 2019). Complex and complicated corporate tax activities raise the risk of financial reporting, resulting in higher audit fees and audit effort (Donohoe & Knechel, 2014). Because of the additional risks, it is estimated that auditors' legal liability would be increased due to the increased likelihood of errors and/or fraud in financial reports (Bajary et al., 2023). In addition, the likelihood of auditors failing to detect material misstatements may be increased (Bajary et al., 2023).

Auditors tailor their responses to potential tax risks based on the risk profile of the client. The greater the potential tax risk, the longer the audit takes to complete (Abernathy et al., 2019). This is possible because auditors must confirm and resolve any issues related to the presentation of tax-related accounts and estimates of corporate tax risk with management through discussions and negotiations. These critical steps will necessitate additional audit effort and time, resulting in longer audit delays for companies with high tax risk than for companies with low tax risk.

During an audit, the process of identifying various tax risks may also include investigations to management and company advisors. Management inquiries may not provide sufficient evidence (Liu et al., 2021). Furthermore, given the audit team's limited access to information and knowledge, the audit team may find it difficult to develop their own estimate of the client's tax risk. Auditors must also read the minutes of board meetings to determine whether the company's potential tax risks are material. Furthermore, auditors will modify their response to pending litigation based on the risk profile of the client (Liu et al., 2021).

Previous research has found that the presence of contentious tax issues is positively related to late audit reports (Knechel & Payne, 2001). Due to the increased potential risks, audit firms will be more cautious and stringent in their audit execution, increasing the audit scope and time allotted to their work (Bajary et al., 2023). Higher audit risk necessitates more audit effort in the form of additional procedural tests (Gontara & Khlif, 2020) and unfavorable audit outcomes (Rasheed et al., 2021). Auditors responded by conducting more audit tests in order to reduce the tax risk, implying a longer audit delay. Auditors may spend additional hours completing audits to combat increased business risk, thus increasing audit report lag. Previous research indicates that auditors devote more audit resources to clients who face higher tax risks (Abernathy et al., 2019; Knechel & Payne, 2001). In this study, the hypothesis is thus stated formally as follows.

H_1 Tax risk has a positive effect on audit report lag

3. Research method

3.1. Sample and data sources

To test the hypothesis, a quantitative approach was used in this study. The sample was restricted to Indonesia Stock Exchange (IDX) companies. In Indonesia, the obligations for the listed companies to convey their financial reports are regulated by the IDX (Saragih & Ali, 2022a). Furthermore, purposive sampling was used, which meant that only companies meeting certain criteria could be included in the sample (see Table 1). The study lasted from 2012 to 2017. The observation data for this study was obtained from the Thomson Reuters and Osiris databases.

The Indonesian context makes for an intriguing study setting. There are three reasons why to use data from Indonesia. First, based on information from the World Bank Open Data, Indonesia is currently in the top 20 of the world's economic growth (measured as Gross Domestic Product-GDP), and in the last ten years (from 2010–2019), it has become the highest GDP contributor in ASEAN (Association of Southeast Asian Nations). Second, in terms of taxation, according to publicly available data released by the Tax Justice Network in 2020, most emerging countries, including several ASEAN countries, have a relatively high tax revenue loss. Based on the data, Indonesia has a corporate effective tax rate of roughly 21.18% (despite the statutory corporate tax rate of 25%),

Table 1. Sample selection procedure

Selection procedure	Firm-year
Initial observation, companies with complete financial reports and annual reports, period 2012 to 2017	2,094
Less: observations with missing data for audit report lag	(39)
Less: observations with missing data for tax risk	(242)
Number of final observations (period 2012 to 2017), firm-year	1,813

and is a country with the highest tax loss in ASEAN (see, e.g., Cobham et al., 2020). In other words, it is a fact that Indonesia is among the countries with high levels of tax avoidance in ASEAN (see, e.g., Cobham et al., 2020). Nevertheless, there is a possibility that the tax uncertainty of firms in Indonesia (as a developing country) is also relatively low. Zeng (2019) states that companies in emerging countries are less likely to engage in tax avoidance than companies in emerged countries. Companies that are less aggressive in their tax avoidance face less tax uncertainty, and vice versa (Dyreng et al., 2019).

Third, the corporate tax rate applicable in Indonesia until 2019 is relatively high in ASEAN, at around 25%, which remains in effect until March 2020 (from then onward, the tax rate applied will be 22%). The relatively high corporate tax rate set by the tax regulator may encourage tax avoidance practices, potentially increasing the firm's tax risks. Previous studies have shown that a specific level of tax avoidance is possible with a wide range of risks (Drake et al., 2019; Guenther et al., 2017; Hamilton & Stekelberg, 2017), including tax risks. In addition, in the last five years, Indonesia has experienced an issue regarding a change in the corporate income tax rate from 25% to 22%. It also has an element of tax uncertainty (tax risk). The regulator's announcement of a lower corporate tax rate may have an impact on the company's tax position. As is well known, when the government announced its plan to reduce the statutory tax rate, many businesses began to prepare to manage profits in this manner. The company will shift income or expenses to more favorable figures in the future (so that the aggregate tax savings obtained are still optimal). A reduction in tax rates has the potential to create tax uncertainty (tax risk). Such uncertainty includes the potential for a company not to be successful in defending its tax position when challenged by the tax authority. Tax uncertainty (tax risk) can also arise when the tax authority has not fully confirmed the tax position figures submitted by the taxpayer. Defining or interpreting proper tax position management is a major point of contention between taxpayers and tax authority (Bame-Aldred et al. 2013).

3.2. Model specification and variable definitions

This study examined whether tax risk has a positive impact on audit report lag. We estimated the following regression model to test the hypothesis.

$$ARL_{it} = \beta_0 + \beta_1BTDV_{it} + \beta_2CAEQ_{it} + \beta_3DER_{it} + \beta_4EPS_{it} + \beta_5AGE_{it} + \beta_6SIZE_{it} + \beta_7SALES_{it} + \beta_8ROA_{it} + \beta_9LOSS_{it} + \beta_{10}BIGF_{it} + \varepsilon_{it}$$

To estimate the dependent variable, audit report lag (ARL) was calculated as the logarithm of the number of days between the fiscal year's end and the date of the audit report. Our primary focus was on corporate tax risk by using book-tax-differences volatility (BTDV). We used a volatility basis for tax risk proxies as the main independent variable, as Hamilton and Stekelberg (2017) and Lin et al. (2019) did. Volatility was frequently used as a risk indicator (Mathew et al., 2018). The tax risk reflected the degree to which tax avoidance was volatile (Hamilton & Stekelberg, 2017). In this regard, we used volatility based on book-tax differences as a basis. BTD is the difference between pre-tax and taxable income. Taxable income was calculated by dividing income tax expenses by the statutory tax rate. Specifically, we used the three-year (year $t-1$ to $t+1$) standard deviation of

BTD/total assets to quantify the corporate tax risk (see Saragih & Ali, 2022b, 2023). Greater volatility values indicate higher levels of tax risk (Hamilton & Stekelberg, 2017). In this model, a positive and significant θ_2 suggested that tax risk positively impacted the corporate tax risk.

In addition, we included a common set of control variables in our models to see if they could account for economies of scale, macro-level factors, and firm complexity. Previous studies on audit reports documented other variables such as firm cash and equivalent (CAEQ), firm debt (DER), firm market performance (EPS), firm age (AGE), firm size (SIZE), firm sales (SALES), firm profitability (ROA), a dummy variable for loss-making companies (LOSS), and a dummy variable for companies audited by the Big 4 (BIGF). Big 4 audit firms are known for employing higher-quality staff, superior technology, and more efficient audit planning and resources, and they are expected to provide a better and faster audit process than non-Big 4 firms (Gontara & Khlif, 2020). Appendix A contains a summary of variable definitions.

3.3. Data analysis

The Winsorizing procedure was used as the first step in data analysis. This step was applied to all continuous variables in order to validate observations containing extreme outlier data (Gallemore & Labro, 2015). The Winsorizing procedure was used to replace the extreme data values of a variable with data values at the specified percentiles, with limits set at the 5th and 95th percentiles. To process the data, we used Stata statistical software. Several statistical analyses were presented, including descriptive statistics to describe data patterns and correlation matrices to identify potential multicollinearity problems.

Then, to gain more meaningful insights, we ran a regression analysis using the model described above. We use the fixed effect method in particular (see Appendix B). Furthermore, because there is evidence that the residual model is non-normal, heteroscedastic (see Appendix C), and auto-correlative (see Appendix D), our study employs a robust standard error for regression analysis (Koester et al., 2016). Finally, this research includes additional tests to ensure that our findings are consistent and reliable.

4. Result, discussion, and implications

4.1. Descriptive statistics and correlation analysis

Table 2 shows descriptive statistics for the variables in the research model. Audit report lag (ARL) has a minimum value of 1.69, a mean value of 1.88, and a maximum value of 2.05, with a standard deviation of around 0.08. Furthermore, tax risk (BTDV) has a minimum value of 0.00, a mean value of 0.05, and a maximum value of 0.26, with a relatively small standard

Table 2. Descriptive statistics

Variable	Obs.	Mean	Std. dev.	Min	Max
ARL	1,813	1.8844	0.0867	1.6990	2.0569
BTDV	1,813	0.0511	0.0675	0.0038	0.2633
CAEQ	1,813	0.0886	0.0871	0.0038	0.3077
DER	1,813	1.2787	1.2480	0.0085	5.0229
EPS	1,813	55.5980	117.3895	-67.7090	450.1130
AGE	1,813	2.7690	0.4858	1.7918	3.3322
SIZE	1,813	19.8522	3.5972	12.0142	24.0322
SALES	1,813	0.8265	0.6351	0.0679	2.3827
ROA	1,813	0.0462	0.0849	-0.1220	0.2278
LOSS	1,813	0.2642	0.4410	0	1
BIGF	1,813	0.4054	0.4911	0	1

deviation of around 0.06. ARL and BTDV have low standard deviation values. This demonstrates that our sample companies have relatively low cross-company variations in terms of audit report lag and tax risk.

The correlation matrix for this study is shown in Table 3. The correlation coefficients are all less than 0.8 (see Gujarati & Porter, 2009). Furthermore, we report the statistics of Variance Inflation Factor (VIF) and Tolerance, which are all less than 10 and 1, respectively (see Gujarati & Porter, 2009). These results show that our model has no multicollinearity issues (see Gujarati & Porter, 2009).

4.2. Regression result

Table 4 displays the research model's estimation results. The coefficient value of the tax risk variable in this model is not significant ($p=0.285$). This implies that the impact of tax risk on audit report lag is nil. As a result, the hypothesis is not supported. This finding contradicts previous research findings that show that companies with a high tax risk have a longer audit report lag (see Abernathy et al., 2019). Meanwhile, only the control variables ROA and BIGF have a significant impact on audit report lag. The audit report lag has a negative relationship with company profitability (ROA). Companies audited by the Big 4 (BIGF), on the other hand, have a positive relationship with audit report lag.

4.3. Discussion and implications

As with the regression results, we show that tax risk has no effect on audit report lag for Indonesian listed firms. The reason for this is that there is a possibility that corporate tax risk in Indonesia is relatively low. Several factors can contribute to the relatively low tax risk. First, it is possible that businesses have well-implemented tax management and tax risk management. Companies can save money on taxes while minimizing their tax liabilities. This low tax risk can also be attributed to tax avoidance activities, which can also be regarded as relatively safe and not overly aggressive (see descriptive statistical data from the study of Kanagaretnam et al., 2016, 2018; Zeng, 2019; Hasan et al., 2022 dan Li et al., 2022). Companies that are less aggressive in their tax avoidance face less tax uncertainty, and vice versa (Dyrenge et al., 2019). The Indonesian tax authority requires a corporate income tax rate of 25% (from 2010 to 2019). According to the 2020 National Tax Justice report, Indonesia has a high corporate effective tax rate of around 21.18% (Cobham et al., 2020). This indicates that there is only a small amount of tax avoidance, which is approximately 3.82% (25%-21.18%).

A certain level of tax avoidance is possible with a wide range of risks (Drake et al., 2019; Guenther et al., 2017; Hamilton & Stekelberg, 2017). Furthermore, creditors seem to associate tax avoidance to risk-generating practices (Khuong et al., 2020). Aggressive tax avoidance by businesses has the potential to increase corporate risk (Guenther et al., 2017), including the implications for accounting and auditing, as well as audit risk (Mills & Sansing, 2000). Aggressive tax avoidance has the potential to increase tax risk, such as increasing the risk of being investigated more thoroughly and intensively by tax authority. As risks become more visible, managers' proclivity for risk avoidance makes them accountable for managing them in a better manner (Jankensgård, 2019). Executives will attempt and plan to maximize corporate tax savings while minimizing tax risk (e.g., Lin et al., 2019).

Second, it is possible that the complexity of corporate tax planning in Indonesia is low enough that it does not affect the complexity of the audit and the amount of effort expended by the auditor to examine the client's tax accounts, including potential tax risk. Due to the low complexity of corporate tax planning, matters relating to various corporate transactions and associated taxation aspects are relatively easier to track accountability.

Third, it is possible that the complexity of tax regulations stipulated by the Indonesian tax authority is low. Thus, it does not drive large tax risks on the corporate side. The most

Table 3. Correlation matrix, variance inflation factor, and tolerance

Panel A. Correlation matrix

	BTDV	CAEQ	DER	EPS	AGE	SIZE	SALES	ROA	LOSS	BIGF
BTDV	1.000									
CAEQ	-0.168	1.000								
DER	-0.003	-0.201	1.000							
EPS	-0.190	0.281	-0.133	1.000						
AGE	0.027	-0.034	-0.073	0.170	1.000					
SIZE	-0.177	0.087	-0.050	0.338	0.088	1.000				
SALES	-0.153	0.089	0.151	0.115	0.151	-0.058	1.000			
ROA	-0.321	0.403	-0.210	0.553	0.065	0.216	0.307	1.000		
LOSS	0.352	-0.245	0.115	-0.395	-0.046	-0.226	-0.206	-0.699	1.000	
BIGF	-0.153	0.121	0.014	0.184	0.112	0.012	0.187	0.252	-0.099	1.000

Panel B. Variance inflation factor (VIF) and Tolerance

	Mean	CAEQ	DER	EPS	AGE	SIZE	SALES	ROA	LOSS	BIGF
VIF	1.50	1.24	1.15	1.61	1.08	1.17	1.24	2.92	2.01	1.11
Tolerance	0.67	0.81	0.87	0.62	0.92	0.86	0.81	0.34	0.50	0.90

common source of tax risk is systematic changes in tax laws (e.g., tax rates, tax benefits, calculation procedures and timing of tax payments). In Indonesia, corporate tax regulations are dominated by one major central tax, namely the corporate income tax. Tax regulations tend to be easier for companies as taxpayers to implement. This makes it easier for managers to enforce tax account accountability more precisely and mitigate tax risks better. This in turn facilitates the auditors to be able to carry out and complete their audit work in a more-timely manner.

This study has a number of implications. The following are the implications for the company's management. Companies are encouraged to improve the effectiveness of their corporate governance on a continuous basis. Good corporate governance has a crucial role in enhancing the quality of timeliness of financial reports (Fakhfakh Sakka et al., 2016). Good corporate governance entails how the board of directors and management operate and demonstrate their commitment to an adequate internal control and risk management system (Kassem, 2022). The understanding of risk by board members is heavily reliant on their experience and knowledge of their environment (Światowiec-Szczepańska & Stępień, 2022). Members of the supervisory board are made aware of the company's risk position through regular reports on the risk appetite and risk profile (Światowiec-Szczepańska & Stępień, 2022). The overall risk exposure of a business entity is a significant result of executive investment decisions and actions (Al-Shammari & Akram, 2021).

Appropriate corporate risk management practices are important (Kabuye et al., 2019; Kiptoo et al., 2021), and should be encouraged to ensure compliance (Kafidipe et al., 2021), including tax compliance. Improved tax compliance necessitates a thorough understanding of the tax risk dynamics (Boateng et al., 2022). In a two-tier model, the supervisory board is critical in understanding risk management and audit issues (Światowiec-Szczepańska & Stępień, 2022), such as tax risk and audit report lag. Internal control and risk management are important in reducing company risk, including tax risk. Furthermore, to mitigate differences in financial accounting standards and tax regulations, it is necessary to strengthen internal controls and information systems for tax harmonization and reconciliation.

As is well known, the calculation of corporate income tax refers to the self-assessment system that is governed by law. Companies, as taxpayers, are responsible for calculating, depositing, and reporting taxes in accordance with existing regulations. Tax risks associated with compliance risk are fully entrusted to taxpayers before tax authority discovers that there are different data through the data matching process. Tax risk mitigation is typically performed prior to filing a tax return by a business entity based on the interpretation of the taxpayer filing the tax return. Tax risks arising from different legal interpretations and tax disputes occur after taxpayers file tax returns and the tax authority conducts material compliance monitoring to identify potential tax risks arising from different interpretation points of view. Companies, as taxpayers, are encouraged to carry out routine tax risk mitigation on various transactions. Its form is to investigate tax issues that may arise from the transaction scheme in accordance with the draft contract that the parties to the agreement will agree on. Companies are also encouraged to conduct tax reviews and tax control on tax obligations that have been implemented using a data matching approach on a regular basis.

The finding of this study may have implications for tax authority as well. The finding of this study is actually a good sign for the tax authority. Companies that have a low tax risk complete and submit their financial reports more quickly. As a result, the finalization of corporate tax obligations with tax authority is also expedited. Thus, tax collection performance on the tax regulator side has improved. Consequently, tax authority is strongly encouraged to keep tax regulations simple, not complicated, and not changing too frequently. The more complex and complicated the tax system becomes, the greater the cost of compliance (Musimenta & Ntim, 2020). As a result, the company faces little tax risk as a potential taxpayer. Various tax-related transactions involving the

Table 4. Primary regression results^a

Variable	ARL ^b		
	Coef.	t-stat.	p-value
<i>BTDV</i>	0.053	1.07	0.285
<i>CAEQ</i>	-0.046	-1.26	0.208
<i>DER</i>	0.000	0.10	0.922
<i>EPS</i>	0.000	-0.09	0.928
<i>AGE</i>	0.008	0.48	0.630
<i>SIZE</i>	-0.003	-0.53	0.598
<i>SALES</i>	0.002	0.20	0.841
<i>ROA</i>	-0.123	-3.27	0.001***
<i>LOSS</i>	0.006	1.03	0.306
<i>BIGF</i>	0.049	2.65	0.008***
<i>Cons</i>	1.905	18.02	0.000***
Observations	1,813		
Adj. R ²	0.040		
F-value	3.54		
Prob. F	0.000***		

Note: ^aRobust standard error is used due to the non-normality and heteroscedasticity of residuals.

^bPanel regression using fixed-effect method.

***represent significance at level 0.01

acquisition of income and expenses in the company have become clearer. Accounts related to corporate taxes are also easily clarified by auditors who work to audit.

Furthermore, it is critical for tax authority to continuously improve the effectiveness of the tax audit and monitoring function in order to keep future corporate tax risks to a minimum. Moreover, as a measure to mitigate the growing corporate tax risks in the future, tax authority may require minimum disclosure regarding corporate tax risks. Risk disclosure is becoming increasingly important for all users of corporate financial statements and annual reports in general (Saggar & Singh, 2017). The importance of risk disclosure has piqued the interest of policymakers and standard setters all over the world (Raimo et al., 2022).

5. Robustness checks

We ran two robustness tests on both models. This robustness test was required to determine the stability of our conclusions and to validate the main finding (Beasley et al., 2021; Hamilton & Stekelberg, 2017). First, we examine the robustness of the main finding using another proxy for tax risk, namely effective tax risk volatility (ETRV). Second, we test the robustness of the main results by including three control variables (market-to-book; net property, plant, and equipment; and free cash flows). Appendix A contains information on the definition and measurement of these extra variables. Based on the results in Table 5, the series of robustness examination results are consistent with our main finding in Table 4.

6. Conclusion, limitations, and suggestions for future research

This study investigates whether tax risk influences audit report delays in Indonesian public companies. According to the finding of this study, tax risk is not a significant predictor of audit report lag. We present detailed evidence that the economically significant consequence of tax risk does not exist in listed firms in a developing country such as Indonesia. The research finding is significant from the standpoint of corporate risk management, which is defined as decision making

Table 5. Robustness checks regression results^a

Variable	(1) ^b ARL			(2) ^b ARL		
	Coef.	t-stat.	p-value	Coef.	t-stat.	p-value
<i>BTDV</i>	0.057	1.15	0.250			
<i>ETRV</i>				0.004	1.04	0.300
<i>CAEQ</i>	-0.050	-1.31	0.190	-0.050	-1.31	0.190
<i>DER</i>	0.003	1.04	0.300	0.003	1.06	0.289
<i>EPS</i>	-0.000	-0.01	0.996	0.000	0.04	0.967
<i>AGE</i>	0.005	0.34	0.737	0.006	0.41	0.681
<i>SIZE</i>	-0.005	-0.96	0.340	-0.006	-1.03	0.304
<i>SALES</i>	0.000	0.02	0.987	-0.000	-0.05	0.959
<i>ROA</i>	-0.114	-3.05	0.003***	-0.114	-3.05	0.002***
<i>LOSS</i>	0.006	1.03	0.304	0.006	1.06	0.292
<i>BIGF</i>	0.048	2.58	0.010***	0.048	2.55	0.011**
<i>MTB</i>	-0.004	-2.40	0.017**	-0.004	-2.38	0.018**
<i>NPPE</i>	-0.020	-0.98	0.329	-0.018	-0.90	0.370
<i>FCF</i>	0.002	0.20	0.839	0.003	0.29	0.776
<i>Cons</i>	1.966	19.22	0.000***	1.973	19.03	0.000***
Observation	1,813			1,813		
Adj. R ²	0.044			0.043		
F-value	3.53			3.27		
Prob. F	0.000***			0.000***		

Note: ^aRobust standard error is used due to the non-normality and heteroscedasticity of residuals.

^bPanel regression using the fixed effect method.

and * represent significance at levels 0.10, 0.05, and 0.01

and implementation of actions that result in a relatively low level of tax risk and are controllable by the company.

The authors recognize that this work should be interpreted with one major caveat in mind. We only use one metric to evaluate audit outcomes, namely audit report lag. The audit fees construct cannot be used in conjunction with the audit report lag construct. This is due to the fact that audit fees are rarely disclosed in annual reports in Indonesia. If we insist on using audit fees, the number of observations will be drastically reduced. Then, this study only included a sample of publicly traded companies from a single developing country (Indonesia).

We recommend several future research directions. As is well known, the finding of our study differ from those of Abernathy et al. (2019). Abernathy et al. (2019) found a link between tax risk and audit report delays in a developed country. Meanwhile, our finding shows that there is no link between tax risk and audit report lag in a developing country. These inconsistencies are worth further investigation. There are several moderating variables that could be used to clarify the relationship between the two constructs. Several aspects of corporate governance, in our opinion, can mitigate the impact of tax risk on audit report lag. For example, the effectiveness of board oversight and audit committees is expected to improve the relationship between tax risk and audit report lag. Finally, future research can also replicate and expand our study by involving the effect of COVID-19 (see Bajary et al., 2023).

Acknowledgments

The authors would like to thank the Senior Editor for the valuable opportunity that has been given to us. We would like to thank the anonymous reviewers for their helpful comments and recommendations. The authors would like to thank the Faculty of Economics and Business, Universitas Gadjah Mada for supporting this study.

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Data availability statement

The financial data are accessible through Thomson Reuters and Osiris Database.

Disclosure statement

No potential conflict of interest was reported by the authors.

Financial interest

The authors declare that they have no potential financial interests.

Ethics approval

We declare that the principles of ethical and professional conduct have been followed.

Citation information

Cite this article as: The effect of tax risk on audit report delay: Empirical evidence from Indonesia, Eko Suwardi & Arfah Habib Saragih, *Cogent Business & Management* (2023), 10: 2192315.

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Appendices

Appendix A. Variable definitions

Variables	Definition
Dependent variable:	
<i>ARL</i>	Audit report lag, measured as logarithm of number of days between fiscal year-end and date of the audit report.
Independent variable:	
<i>BTDV</i>	Book-tax difference volatility (represents corporate tax risk), measured as a three-year (year $t-1$ to $t+1$) standard deviation of book-tax differences (pretax income deducted by income tax expense/statutory tax rate, scaled by total assets).
Control variables:	
<i>CAEQ</i>	Cash and equivalent, scaled by total assets.
<i>DER</i>	Firm leverage, the ratio of total debt to total equity.
<i>EPS</i>	Earnings per share.
<i>AGE</i>	The age of the firm, measured as the natural logarithm of firm age since it was listed on the stock exchange.
<i>SIZE</i>	The size of the firm is measured as a natural logarithm of total assets.
<i>SALES</i>	Firm' sales, scaled by total assets.
<i>ROA</i>	Return on assets, measured as net income divided by total assets.
<i>LOSS</i>	Dummy variable, 1 if negative net income, 0 otherwise.
<i>BIGF</i>	Dummy variable, 1 if audited by one of the Big 4 auditors, else 0.
Alternative measure of corporate tax risk:	
<i>ETRV</i>	Effective tax rates volatility, measured as a three-year (year $t-1$ to $t+1$) standard deviation of effective tax rate.
Additional control variables:	
<i>MTB</i>	Market to book, the ratio of the market value to the book value.
<i>NPPE</i>	Net property, plant, and equipment, scaled by total assets.
<i>FCF</i>	Free cash flows, scaled by total assets.

Appendix B. Model selection for main regression model

Test	Hypothesis	Statistics (p-value)	Method used
Chow test	H ₀ : Common effect H ₁ : Fixed effect	7.09 (0.000)	Fixed effect
LM test	H ₀ : Common effect H ₁ : Random effect	1309.17 (0.000)	Random effect
Hausman test	H ₀ : Random effect H ₁ : Fixed effect	51.26 (0.000)	Fixed effect

Appendix C. Heteroscedasticity test for main regression model

Test	Statistics (p-value)	Conclusion
Breusch-Pagan	27.55 (0.000)	Heteroscedastic

Appendix D. Autocorrelation test for main regression model

Test	Statistics (p-value)	Conclusion
Wooldridge	17.99 0.000	Autocorrelated



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