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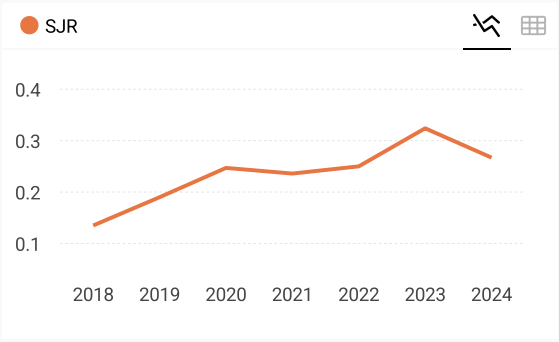

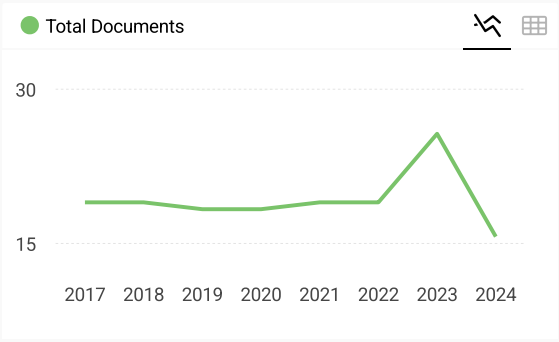

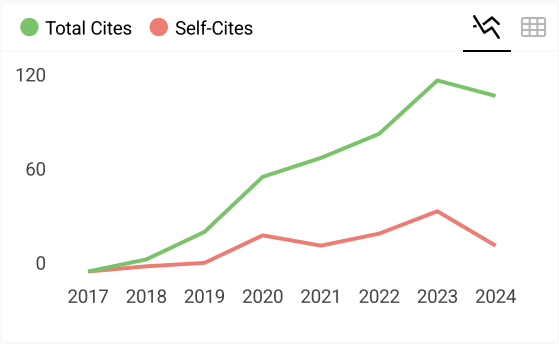

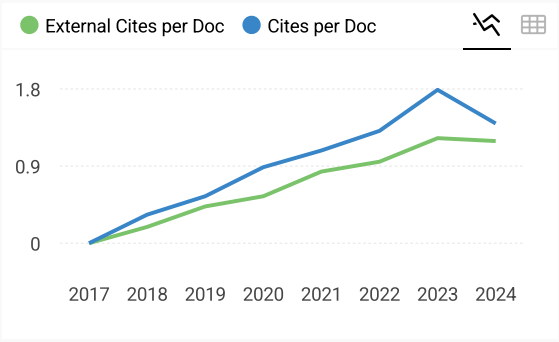

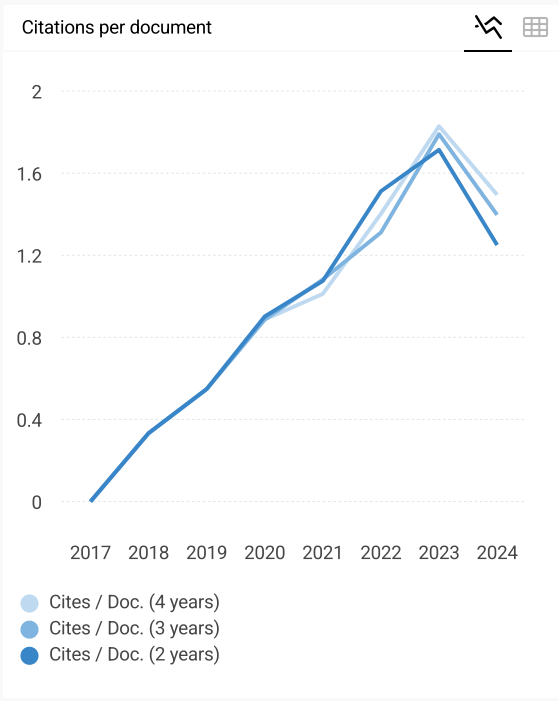

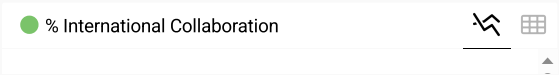

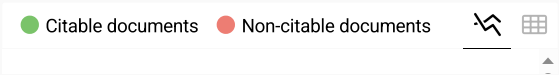

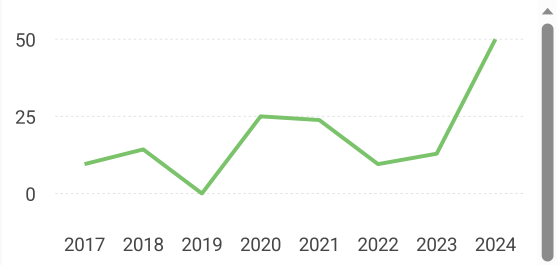

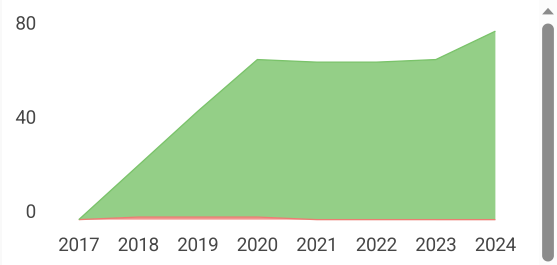

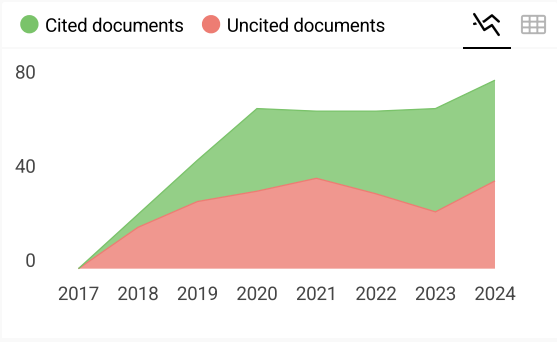

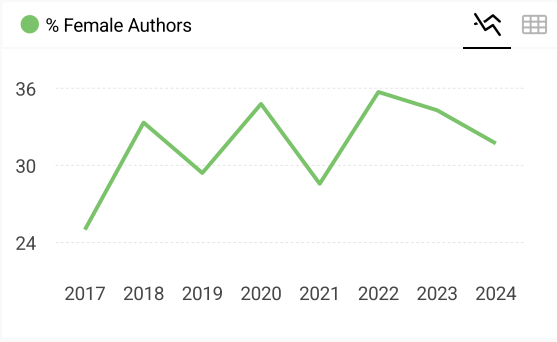

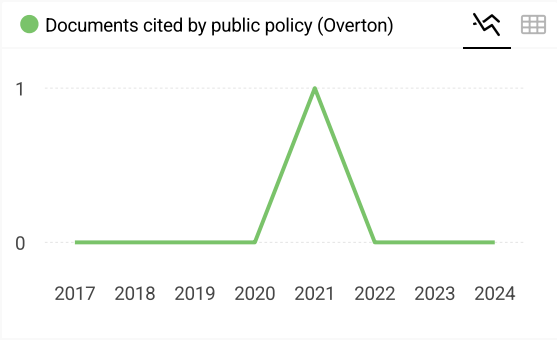

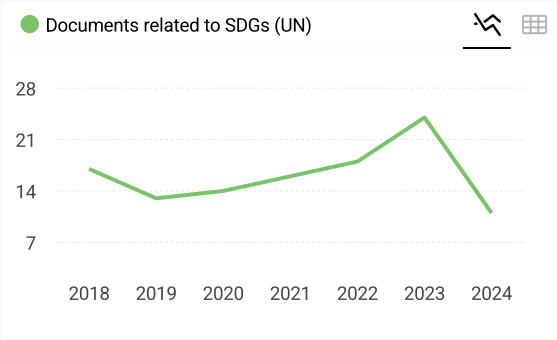

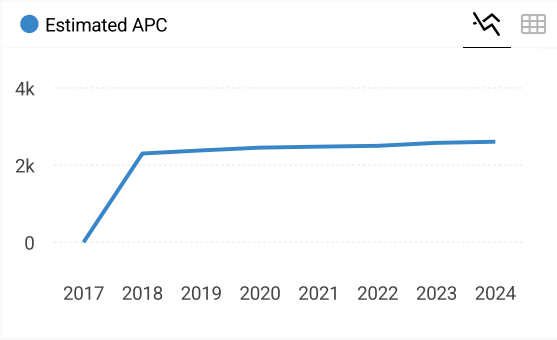

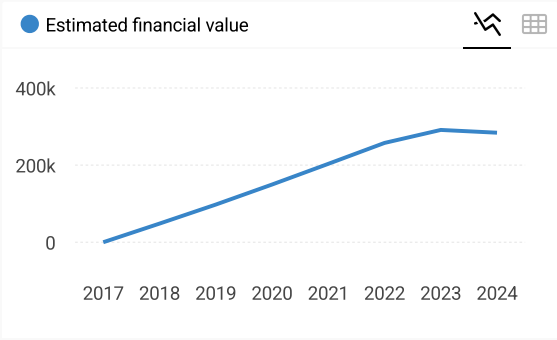

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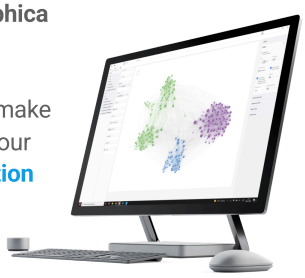

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How does market-based governance influence sustainable tax behaviour? Evidence from tax haven utilisation and tax avoidance

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Abstract: This study investigates whether the external corporate governance mechanism plays an effective monitoring system for multinational companies' tax avoidance and profit-shifting activities. This study uses 553 firm-year observations from 135 listed firms in the manufacturing and agriculture sectors of the Indonesian capital market from 2015–2019. The results suggest that firms with potential tax avoidance activities experience a more severe decline in firm value, specifically firms with strong market-based governance. The findings on firms with tax haven subsidiaries suggest that market-based governance effectively prevents firms from gaining benefits through tax havens and encourages sustainable tax behaviour. This study provides novel empirical evidence that market-based governance is the encouraging factor in achieving sustainable tax behaviour. The findings have significant implications for regulators and practitioners, showing that the regulations related to the advanced transparency and mandatory disclosure of foreign subsidiaries along with the external monitoring mechanism, have effectively encouraged sustainable behaviour.

Keywords: corporate governance; market-based governance; tax avoidance; tax haven; sustainable tax behaviour.

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1 Introduction

Limited previous studies linking tax haven utilisation and firm value (FV) include Bennedsen and Zeume (2018), Choy et al. (2017), Eulaiwi et al. (2021) and Rusina (2020) show that investing in tax haven subsidiaries (THSs) has the potential to increase the financial risk and social reputation. On the other hand, recent studies have discussed the relationship between tax avoidance (TA) and FV, especially in Asia, including Khuong et al. (2020), Rudyanto and Pirzada (2020) and Ha et al. (2021). The three studies found varying results. Ha et al. (2021) show that TA negatively affects FV. Khuong et al. (2020) found that the relationship between TA and FV varied using CurrentETR (ETR) and CashETR (CETR) proxies. Rudyanto and Pirzada (2020) conducted a study in Indonesia with samples of different industries and found contradictory results that TA was not associated with FV. Discussing tax haven utilisation, TA, and external corporate governance (CG) as a monitoring mechanism is still limited.

External CG motivates multinational companies to maintain long-term tax strategies. External CG pressures management to prioritise sustainable tax strategies to reduce involvement in TA activities and tax haven utilisation. External CG in this study uses capital market pressure and is referred to as market-based governance. Ahmed et al. (2022) stated that CG characteristics could be categorised into internal CG (e.g., board composition, incentive compensation) and external CG (e.g., government regulation, audit quality or capital market pressure). The literature on external CG and TA is minimal; moreover, studies specifically discussing external CG and tax haven utilisation are in infancy, especially considering multinational companies' rapid investment development in tax haven countries (Ahmed et al., 2022). Several studies discuss external CG with TA (Amri et al., 2022; Choi and Park, 2022; Ouyang et al., 2020; Shin and Park, 2019). Other researches discuss external CG external CG and tax haven utilisation, employing audit quality, investor protection, and capital market pressure as the external CG measurements (Chari and Dixit, 2020; Col, 2017; Taylor and Richardson, 2013). Our research tries to fill the gaps by focusing more on the relationship between external CG, TA and tax haven utilisation. The external CG as the monitoring mechanism for TA and profit-shifting activities contributes to the higher risk, reducing FV.

Our study expects multinational firms to focus on sustainable tax strategies that harmonise with responsible tax. Aliani and Bouguila (2023) stated that companies basically have an inherent intention to minimise taxes so that they can potentially harm the firms' reputations. Higher visibility from stakeholders causes companies to adopt ethical and sustainable tax behaviour. Jacoby et al. (2019) stated that CG structure consists of a strong internal CG mechanism supported by external CG that depends on stakeholders (e.g., financial markets). Market-based governance puts pressure on companies to deliberately avoid using short-term tax strategies that are not in line with sustainable tax behaviour. Therefore, firms with TA activities are more likely to experience higher pressure when strong market-based governance is present. Previous studies used a diversity of external CG proxies. Amri et al. (2022), which used tax enforcement as the external CG mechanism, found that external CG was associated with a decrease in the probability of tax aggressiveness. Ouyang et al. (2020) find that the proxies of audit quality and product market competition were effectively confirmed as an external monitoring mechanism for multiple large stockholders on TA activities. The other study finds that product market competition is effective as an external CG mechanism to reduce TA actions (Shin and Park, 2019). Companies with strong external monitoring mechanisms have higher transparency than others. However, the study by Choi and Park (2022) discovered that external rating agency as CG mechanism was not confirmed to strengthen the relationship between TA and tax risk. From previous research, we can conclude that the empirical findings related to external CG and TA is mixed.

External CG as a monitoring mechanism for the presence of THSs of multinational companies has two perspectives. The interaction of the two factors controlling corporate valuation is shown in Taylor and Richardson (2013), Col (2017) and Chari and Dixit (2020). First, the strong external CG mechanism can capture the extent of profit-shifting activities and negatively impact the FV. Companies with strong market-based governance face higher pressure if they are involved in establishing THSs. By implementing IFRS 12 as adopted in PSAK 67 regarding the obligation to disclose the company's interests in other entities that have been in effect since 2015 (IAI, 2014), firms are obliged to disclose foreign subsidiaries and their locations in the audited financial report. Firms are also required to disclose foreign subsidiaries with active and inactive operations. Transparency quality improvement related to THSs can create negative perceptions for stakeholders and harm FV. In addition, bilateral and multilateral exchange of information related to taxation has been effective since September 2018 through Law No. 9 of 2017 (Republic of Indonesia, 2017) so that the pressure on firms that have connections with tax haven jurisdictions is more substantial. Consistent with the conclusion of Taylor and Richardson (2013) that external CG impacts in reducing thin capitalisation that indicates profit-shifting activities in the firms' thus encouraging sustainable tax behaviour. Similarly, the external CG mechanism pressures firms in the merger and acquisition process to minimise their connection with tax haven countries. Col (2017) finds that external CG affects the valuation process in corporate mergers and acquisitions between tax haven and non-tax haven countries. Firms in non-tax haven countries experience a decrease in premium mergers since the external CG mechanism in the acquiring country is weaker than the target country.

The second perspective is that the companies with THSs gain benefits if they have a strong external CG mechanism. For example, the study of Chari and Dixit (2020) in

emerging markets shows that firms with tax haven links, which have strong market-based governance, experience a less damaging decrease in stockholder returns. Chari and Dixit (2020) use an external rating agency that ranks actively traded stocks to measure external CG. The reasons are that firms with active stocks disclose more information, followed by numerous analysts that provide performance forecasts, and it is easier for investors to leave the company when market returns do not match expectations (Chordia et al., 2007; Conrad et al., 2015; Roulstone, 2003; Stiglitz, 2014). Moreover, the connection with tax haven countries is not consistently related to the profit-shifting motive; the other is the secrecy of beneficial ownership (Karhunen et al., 2021), strategic asset protection (Chari and Acikgoz, 2016; Luo and Tung, 2018) and the sustainable global network to expand the market product (Mukundhan et al., 2019).

Our study uses 553 firm-year observations from 135 listed firms for 2015–2019. Multiple approaches are used to reduce potential endogeneity issues, for example, measurement bias. This study uses several proxies for measuring TA and tax haven utilisation to demonstrate the robustness of the research model. Empirical findings show consistent and robust results suggesting market-based governance is an effective monitoring mechanism for TA activities. The hypotheses testing related to CG, tax haven utilisation, and the FV indicates that the firms connected to a tax haven with strong market-based governance face higher pressure, which effectively prevents firms from gaining benefits and encourages sustainable tax behaviour. Additional analysis shows that the positive impact between tax haven utilisation and FV has decreased after the regulation of information exchange took effect in 2018. This finding shows that stakeholders are gradually more concerned about tax haven utilisation and consider it a potential risk.

This research supports firms' sustainable tax behaviour through external CG mechanisms. This study provides evidence of market-based governance as an effective monitoring mechanism for firms with potential TA and profit-shifting activities. This study provides several novelties in CG and international business. First, previous research that discusses the association between market-based governance and TA is still limited, specifically related to corporate valuation. Our study contributes to the literature on the external CG effect of TA (Amri et al., 2022; Choi and Park, 2022; Ouyang et al., 2020; Shin and Park, 2019), which has the potential risk of reducing FV. Second, our study discusses the association of market-based governance and tax haven utilisation and their impact on FV, which to our knowledge, has not been explored in previous studies. Third, the usage of active stock as an external CG measurement has not been extensively used in international business studies, so it becomes an advantage of this research. Previous studies used various external CG measurements with mixed findings, thus providing more opportunities for research development in CG and international business.

The structure of this paper is organised as follows. Section 2 reviews the related literature and develops hypotheses. Section 3 describes the sample selection and research design. Section 4 shows the data of the study. Section 5 presents the empirical results, robustness checks and implications. Section 6 summarises the conclusions and limitations of this study.

2 Review of literature

TA activities and tax haven utilisation are causing sustainability problems since the actions result in the government's ability to invest in Sustainable Development Goals (SDGs). Although TA and profit-shifting activities provide economic incentives for firms, these activities also incur social costs that jeopardise the sustainability of society (Cho, 2020). Therefore, it is crucial to understand the interaction of national and international transfer pricing regulations to promote sustainable tax behaviour worldwide (Cho, 2020). Batrancea et al. (2018) define sustainable tax behaviour as internalising legal, moral, ethical, and sustainability considerations that contribute to society. Therefore, society's future support is a crucial consideration of the corporate sustainable tax strategy. The Base Erosion and Profit Shifting (BEPS) Action Plan introduced by The Organization for Economic Co-operation and Development (OECD) aims to promote sustainable tax behaviour. Empirical research shows that sustainable tax behaviour increases when international regulations require multinational enterprises (MNEs) to disclose crucial information, one of which is worldwide economic activity (Cho, 2020). Indonesia is adapting to the international tax policies of the BEPS project during the observation periods, so Indonesian firms are a unique sample to explore.

In the era of advanced transparency, TA and tax haven utilisation are considered high-risk, so the stakeholders have negative sentiments about the FV. Previous research explains that TA is negatively associated with the firm's reputation and valuation (Herron and Nahata, 2020; Xu et al., 2020), while sustainable tax behaviour is positively associated with firm reputation and stakeholder support (Carter et al., 2021; Zhang et al., 2021). Carter et al. (2021) state that consumers who care about sustainability value firms' reputations further. Zhang et al. (2021) similarly find that firms with advanced transparency in CSR that did restatement experienced a smaller decrease in FV than the other firms. Stakeholders are more likely to expect firms to adhere to the new regulations. Van de Vijver et al. (2020) suggest that direct public policy intervention is necessary to inhibit TA since if the firms benefit from delaying sustainable tax behaviour, firms will wait. The regulatory intervention aims to clarify the boundaries between TA and sustainable tax behaviour, increase transparency to stakeholders and reduce lag time by providing direct enforcement (Van de Vijver et al., 2020). Consistent with Hindriks and Nishimura (2021), the policymakers have two alternatives to increase tax revenues from multinational firms: increasing tax rates or mobilising their resources to improve compliance. Indonesia's government selected the second option from 2020 to 2022, and the corporate tax rate will decrease gradually (Republic of Indonesia, 2020). Chang et al. (2013) indicate that changes in tax regulations are followed by severer tax audits, which creates a potential risk for the firms. Therefore, the firms with TA and tax haven utilisation will experience a potential decline in FV due to future high-risk. As a monitoring role, sustainable theory predicts that corporate executives act in line with sustainable tax strategies and maintain the company's long-term reputation. Previous research found that TA was negatively associated with FV, and the relationship becomes more assertive after the transition to severer regulations in Taiwan (Xu et al., 2020). Firms evade TA after the implementation of advanced transparency by the government since the government is more strict in monitoring firms' compliance (Chang et al., 2013). We argue that stakeholders view firms' decisions related to TA as high-risk and give an unfavourable valuation.

Discussion about external CG has several advantages. First, global research has not widely discussed the relationship between external CG and TA since previous studies have focused more on internal CG. The discussion of external CG as an interaction variable between TA and tax haven utilisation on FV contributes to a new understanding of the business and accounting literature. Second, the development of the external environment in recent years has changed rapidly and influenced corporate executive decisions, such as significant changes in financial reporting regulations, international and domestic tax policies, and social responsibility aimed at increasing corporate transparency. Capital is minimal and concentrated in specific individuals or corporate groups. We argue that the discussion about external CG and fiscal policy will continue to grow with the rapidly changing external environment and increasing pressure from stakeholders. Third, changes in external policies that very fast cause future research to focus more on stakeholders than shareholders since stakeholders are the primary domain of sustainability research.

Market-based governance is defined as a tool containing various agreements and mechanisms that allow one party to leave the agreement, nevertheless offers several advantages and benefits to make governance tools operable (Styhre and Bergström, 2019). The measurement of market-based governance uses an external rating agency that ranks actively traded stocks (Chari and Dixit, 2020), the LQ45 index, which is among the top 45 stocks with the highest active and large market capitalisation in Indonesia (Indonesia Stock Exchange, 2021). The Indonesia stock exchange semi-annually ranks firms based on the most active stock trading and the largest market capitalisation. Firms consistently ranked in the top 45 stocks for consecutive semesters are considered to have strong market-based governance. Active stocks are regularly associated with transparency and lower information asymmetry, such as more coverage by capital market analysts (Chordia et al., 2007; Roulstone, 2003) and more effective monitoring so that the potential for the occurrence of expropriation of minority stockholders is smaller than firms whose shares are less actively traded. Higher analyst coverage increases the visibility of aggressive tax planning behaviour and more transparent information by analysts (Allen et al., 2016), which in turn increases sustainable tax behaviour. Investors can quickly withdraw when information asymmetry is high and the market is under stress (Conrad et al., 2015; Stiglitz, 2014). Firms with active shares tend to have higher CG disclosures and larger company sizes (Sareen and Chander, 2009). Our research argues that market-based governance acts as a stakeholder external monitoring mechanism for the potential of TA activities. Our hypothesis is:

H1 Market-based CG acts as a monitoring mechanism between TA and FV.

Previous research on the relationship between tax haven utilisation and FV produced mixed results. The obligation to disclose foreign subsidiaries in audited financial statements through IFRS 12, including the entity name, operational location, and total assets owned by the subsidiary, has economic consequences and social reputation for the firms. The publication of the corporate tax haven index by the Tax Justice Network (TJN, 2019) and the list of tax haven countries by other researchers (Dyreng et al., 2020; Gravelle, 2015) as well increase the reputational risk for companies. Several studies have shown that investing in tax haven countries through subsidiaries has the potential to cause financial and social reputation risks (Bennedsen and Zeume, 2018; Choy et al., 2017; Eulaiwi et al., 2021; Rusina, 2020). There is a greater possibility of experiencing a

decrease in FV when financial, moral, and ethical issues arise. The firms can be judged as having less responsibility for society by stakeholders.

On the contrary, studies by Cuervo-Cazurra et al. (2018) and Lahiri et al. (2022) find that cross-border investments positively affect value creation and FV. Multinational firms existed when they had three main sources of advantages that are ownership advantages, internalisation advantages (e.g., domestic tax enforcement, policy changes, transparency regulations that affect transaction costs and value creation), and location advantages (e.g., benefits from investing in other countries including tax havens) (Cuervo-Cazurra et al., 2018; Dunning, 1977). Combining internalisation and location advantages motivates value creation activities (Cuervo-Cazurra et al., 2018), which impact FV enhancement. THSs are identical with non-core activities such as financial and accounting activities (Delatte et al., 2022; Otusanya and Adeyeye, 2022). Outsourcing of non-core activities to tax haven countries has the potential to increase the company's competitive advantage if managers can manage the risks associated with the existence of tax havens link, especially related to domestic regulations in the base country. Basically, non-core outsourcing activities cause companies to have a greater focus on their core competencies and ultimately have the potential to improve firm performance. Lahiri et al. (2022) indicate that international outsourcing of non-core activities (e.g., financial activities) correlated with higher performance than other firms, specifically for non-financial firms. The activity provides added value since the firms can focus on improving the performance of core activities which are the firm's competitive advantage. Moreover, the connection with tax haven countries is also associated with the secrecy of beneficial ownership (Karhunen et al., 2021), strategic asset protection (Chari and Acikgoz, 2016; Luo and Tung, 2018), and the sustainable global network to expand the market product (Mukundhan et al., 2019) that increase the firm's competitiveness.

Capital market pressure or market-based governance in this study acts as a monitoring mechanism by stakeholders. Firms that are included in the top 45 actively traded stock and large capitalism for two consecutive semesters are more cautious in selecting the location of their subsidiaries since it can jeopardise the valuation of the firms. Based on the first perspective, we argue that the negative association between tax haven utilisation and FV will be stronger after the presence of market-based governance. In contrast, based on a second perspective, the positive association between tax haven utilisation and FV will decline with the existence of market-based governance as a monitoring mechanism. Our hypothesis is:

H2 Market-based CG acts as a monitoring mechanism between tax haven utilisation and FV.

3 Methodology

3.1 Sample selection

The study's samples are the manufacturing and agriculture firms listed on the Indonesia Stock Exchange, considering the gross domestic contribution of both sectors is the largest for five years from 2015 to 2019 (Central Bureau of Statistics, 2020). This selection is relevant to the FV analysis of the two sectors experiencing their peak. The two sectors with the most significant contribution to GDP can represent the tax behaviour of

Indonesian firms. This study uses a sample of Indonesian multinational firms for two reasons. First, Indonesia is a country with high corporate tax rates compared to the average in ASEAN, Asia and the world. Indonesia's tax rate is higher than the average in ASEAN and Asia countries, which is around 25% compared to 22% and 21% in ASEAN and Asia (DDTC, 2020; KPMG, 2021) for the periods 2015 to 2019. The biggest obstacle in the form of high-income tax rates raises the potential for tax haven utilisation and profit shifting activities. Second, the establishment of Indonesia's SDGs to achieve a sustainable tax policy that supports national competitiveness has led the government to amend several regulations specifically related to profit-shifting activities, advanced transparency, and disclosure of foreign subsidiaries. For example, the regulation of Minister of Finance Number 213 the Year 2016 concerning additional documents about related party transactions, Law Number 9 the Year 2017 concerning access to financial information for tax purposes, and IFRS 12 adopted to PSAK 67 regarding disclosure of company interests in other entities.

Corporate income tax of the agriculture and manufacturing sectors is based on net income, which is relevant to the ETR and CETR proxies. Variable data is obtained from the Bloomberg database, excluding THSs, tax audits, market-based governance hand-collected from the audited and annual reports, and semi-annual performance index reports. The procedure for collecting data of THSs is carried out in several stages. The first stage is collecting data on foreign subsidiaries to summarise the location of each THS. In the second stage, data on foreign subsidiaries are organised to determine subsidiaries located in tax haven countries. The data collection process was carried out by research assistants supervised by the authors to maintain the quality of the data.

The sampling procedure starts with 730 firm-year observations from 2015 to 2019. The 177 observations were eliminated from the sample since trading had been suspended for more than a year, the companies experienced losses, or the annual report was incomplete. Therefore, losses firms' data are irrelevant to the ETR and CETR proxies. The final sample is 135 firms with 553 firm-year observations. ETR and CETR were chosen to measure TA since these two proxies are the strongest compared to others (De Simone et al., 2020; Henry and Sansing, 2018). However, these two proxies have a weakness. They cannot analyse the firms' losses. Therefore, this study uses an unbalanced panel to avoid reducing the sample size and not representing the analysed sectors. The observation period began in 2015, after enacting the IFRS 12 adopted with PSAK 67 regarding mandatory disclosure of subsidiaries in the audited report, including foreign subsidiaries. As a result, the firms must disclose the subsidiaries' names, the activities' primary location, and the ownership proportion of subsidiaries. Our study limited the observation periods to five years, consistent with Casi et al. (2020), to avoid other leading events potentially affecting the test results.

3.2 Regression model and definition of variables

The dependent variable is FV. The independent variables are TA and tax haven utilisation. Market-based governance is the moderator in this study.

- model (1) to test Hypotheses 1, which is indicated by β_3:

$$FV_{it} = \alpha_{0it} + \beta_1 TH_{it} + \beta_2 TA_{it} + \beta_3 TA_{it} * CG_{it} + \beta_4 AUDIT_{it} + \beta_5 OCF_{it} + \beta_6 SIZE_{it} + \beta_7 ROA_{it} + \beta_8 LQ_{it} + \beta_9 LEV_{it} + \beta_{10} GWTH_{it} + \beta_{11} CAPINT_{it} + \beta_{12} Post\_AEOI_{it} + \beta_{13} IndustryDummy_{it} + \varepsilon_{it} \quad (1)$$

- model (2) to test Hypotheses 2, which is indicated by the β_2:

$$FV_{it} = \alpha_{0it} + \beta_1 TH_{it} + \beta_2 TH_{it} * CG_{it} + \beta_3 TA_{it} + \beta_4 AUDIT_{it} + \beta_5 OCF_{it} + \beta_6 SIZE_{it} + \beta_7 ROA_{it} + \beta_8 LQ_{it} + \beta_9 LEV_{it} + \beta_{10} GWTH_{it} + \beta_{11} CAPINT_{it} + \beta_{12} Post\_AEOI_{it} + \beta_{13} IndustryDummy_{it} + \varepsilon_{it} \quad (2)$$

Table 1 Variable description

Variable	*Abbreviation*	*Description*
Firm value	FV	Year-end market value plus book value of debt scaled by total assets. We use log (Tobin's Q + 1).
Tax haven utilisation	TH	Tax haven utilisation uses two proxies that are THS and THmin1. THS is the number of tax haven subsidiaries with direct ownership. THmin1 is a dummy variable to measure the existence of tax haven subsidiaries.
Tax avoidance	TA	Tax avoidance uses two proxies that are TA1 and TA2. TA1 is current tax expense scaled by pretax income. TA2 is tax paid minus tax refund scaled by pretax income. We multiply TA1 and TA2 by –1.
Market-based governance	CG	CG uses an external rating agency that ranks the top 45 stocks with the highest active and large market capitalisation in Indonesia or the LQ45 index. CG is a dummy variable to measure the existence of strong market-based governance.
Tax audit disclosure	AUDIT	The disclosure of a tax assessment letter from the tax authority in the annual report.
Firm size	SIZE	Firm size uses a natural log of total assets in year t.
Profitability	ROA	Return on assets uses net income after tax scaled by total assets.
Liquidity	LQ	Current assets scaled by current liabilities in year t.
Leverage	LEV	Total liabilities scaled by the total assets in year t.
Sales growth	GWTH	Annual sales growth in year t compared to year t – 1.
Operating cash flow	OCF	Net cash from operating activities scaled by total assets in year t.
Capital intensity	CAPINT	Gross property plant equipment scaled by total assets.
Post period of information exchange	Post_AEOI	Period observation after AEOI implementation. Given 1 if the period is 2018 or 2019 and 0 if otherwise.

3.2.1 Dependent variable

FV measurement uses Tobin's Q based on Rudyanto and Pirzada (2020), which used year-end market value plus book value of debt divided by total assets. Total debt is the

total debt with an interest expense, both short-term and long-term debt. This study uses Log(TobinsQ + 1).

3.2.2 Independent and interaction variables

Measurement of TA1 is current tax expense divided by pretax income, and the measurement of TA2 is tax paid minus tax refund divided by pretax income. We multiply TA1 and TA2 by –1 to make a simpler interpretation. We use TA measurements that have been widely used in previous studies, namely ETR and CETR (De Simone et al., 2020; Khuong et al., 2020; Hasan et al., 2021). Measurement-based on ETR and CETR are two common measures used by previous studies. However, these two measurements differ due to temporary differences (Wang et al., 2019) so that they can measure potential TA activities with a broader scope. For example, the corporation's ETR is a common indicator of a company's tax burden (Wang et al., 2019), and CETR proxy is used to capture deferral strategies (Marwat et al., 2021). Rudyanto and Pirzada (2020) explore Indonesia and use ETR-based TA measurements to examine its relationship with FV.

Measurement of tax havens uses two proxies: THS and THmin1, as in the research of Taylor et al. (2015) and Taylor and Richardson (2012). This study selected 50 tax haven countries from several sources, including Singapore and Hong Kong (Dyreng et al., 2020; Gravelle, 2015; TJN, 2019) as tax haven countries.

Market-based governance uses the measurement of the Indonesia Stock Exchange rating that ranks the top 45 stocks with the highest active and large market capitalisation in Indonesia or the LO45 index (Indonesia Stock Exchange, 2021). The rating is evaluated every six months. Firms consistently ranked in the top 45 stocks for consecutive semesters are considered to have strong market-based governance. External CG is a dummy variable to measure the existence of strong market-based governance. Similarly, Chari and Dixit (2020) use the ranks of actively traded stocks to measure external CG.

Table 2 Tax haven countries elected by Indonesia firms based on geographic location

Description	*Singapore*	*Hong Kong*	*BVI**	*Mauritius*	*Cayman Islands*	*Bermuda*	*Bahamas*
Total tax haven subsidiaries	167	31	25	24	16	6	2
Average of tax haven subsidiaries per company	1.82	1.19	1.39	1.71	1.45	3	1

Note: *British Virgin Islands.

Source: Data observed

Table 2 shows the seven tax haven countries selected by Indonesian firms. The number of THS represents direct ownership that appears in the audited report disclosure. The proximity of the geographical location of the tax haven has a considerable influence on firms in choosing a tax haven country. Singapore occupies the top priority chosen by Indonesian firms, followed by Hong Kong (China), Mauritius (East Africa), while BVI, Cayman (Caribbean Sea), Bermuda, and the Bahamas (Atlantic Ocean). The seven tax haven countries have conducted information exchange in 2017 and 2018: the British Virgin Islands, Bermuda, Cayman Islands in 2017, Singapore, Hong Kong, Bermuda, and

Mauritius in 2018 (OECD, 2021). Of the 135 companies that are the research samples, 32 firms have a THS with 137 observations. A total of 27 firms have a THS, and the rest have more than once per year. We find only a company with THS spread across five different countries. These results indicate a tendency for firms to concentrate THS on a tax haven country since it makes it easier to control and understand the regulations of one country compared to many countries with different regulations.

3.2.3 Control variables

The measurement of tax audit is the disclosure of a tax assessment letter (AUDIT) from the tax authority in the annual report. The measurement uses a dummy variable, given if the companies have obtained a tax assessment letter in the current year and 0 if otherwise (Arieftiara et al., 2020). Operating cash flow (OCF) is measured using the cash inflow (outflow) from operating activities. Firm size (SIZE) measurement uses a natural logarithm of total assets (Bennedsen and Zeume, 2018; Nafti et al., 2020; Rudyanto and Pirzada, 2020). The proxy of ROA is net income divided by total assets (Bennedsen and Zeume, 2018; Nafti et al., 2020; Rudyanto and Pirzada, 2020). Measurement of liquidity (LQ) uses current assets divided by current liabilities (Rudyanto and Pirzada, 2020). Leverage (LEV) uses total liabilities divided by the total asset (Nafti et al., 2020; Rudyanto and Pirzada, 2020). The growth (GWTH) proxy is the percentage increase in sales year t compared to year t – 1 (Rudyanto and Pirzada, 2020). The capital intensity (CAPINT) uses gross property plant equipment divided by total assets (Rudyanto and Pirzada, 2020). The post period of information exchange (Post_AEOI) proxy is a dummy variable, given 1 if the period is 2018 or 2019 and 0 if otherwise.

4 The data

4.1 Descriptive statistics

The research sample is firms that have a net profit in year t. Table 3's descriptive data demonstrate that TA1 (ETR) and TA2 (CETR) have a mean of 31.4% and 49.9%, respectively, meaning that on average, the sample firms have a tax burden and tax paid greater than the statutory tax rate of 25%. This shows the high profitability of firms in the manufacturing and agriculture sectors during the observation period. The average TA2 (CETR) value has a larger standard deviation than the TA1 (ETR) since it contains information on taxes paid and tax refunds from previous years. However, a higher tax refund shows the potential for the company to be involved in TA. The firm sample varies significantly in size, as indicated by the SIZE standard deviation of 3.660. The liquidity of the sample firms varies significantly, with a standard deviation of 2.000 and an amount between 0.034 to 21.700. The sample of firms studied has THSs of 0 to 6 entities per observation. The dummy variables in this study are THmin1, AUDIT, and Post_AEOI with a minimum value of 0 and a maximum value of 1.

The definition of MNEs in our paper is based on foreign subsidiaries. We do not analyse foreign ownership in our study. In Table 4, the number of firms with foreign subsidiaries increased rapidly from 46.1% in 2015 to 79.1% and 71.2% in 2018 and 2019. This number does not include companies with foreign ownership. Based on this, we conclude that our study represents MNEs.

Table 3 Descriptive statistics of variables

Variables	*N*	*Mean*	*Median*	*SD*	*Min.*	*Max.*
FV_{it}	553	0.363	0.326	0.201	0.010	1.380
$TA1_{it}$	553	0.314	0.252	0.454	0.000	7.480
$TA2_{it}$	553	0.499	0.252	1.773	–9.500	22.280
THS_{it}	553	0.458	0.000	1.060	0.000	6.000
$SIZE_{it}$	553	27.100	28.100	3.660	17.700	33.500
ROA_{it}	553	0.817	0.847	0.387	0.017	1.870
$GWTH_{it}$	553	0.111	0.052	1.050	–0.500	24.200
LQ_{it}	553	2.380	1.640	2.000	0.034	21.700
LEV_{it}	553	0.289	0.281	0.180	0.003	0.827
OCF_{it}	553	0.074	0.063	0.094	–0.234	0.549
$CAPINT_{it}$	553	0.411	0.423	0.184	0.001	0.915

Source: Output of analysis using Gretl

Table 4 The firm subsidiaries per year

	2015	*2016*	*2017*	*2018*	*2019*
Total firms	102	115	110	115	111
Total foreign subsidiaries	47	69	70	91	79
Total tax haven subsidiaries	36	50	52	59	56
Percentage of foreign subsidiaries per company	46.1	60.0	63.6	79.1	71.2

4.2 Correlation analysis

The correlation matrix in Table 5 shows the correlation between the independent variables. The correlation coefficient between variables is between 0.006 to 0.520 or less than the threshold of 0.8 (Chao, 2018).

4.3 Panel estimation model

This study uses the regression panel according to Wooldridge (2016) to estimate the model since the data used is panel data. Multicollinearity and heteroscedasticity tests were conducted to detect multicollinearity and heteroscedasticity problems. The model is assumed to have accurate and robust statistical power when there is no multicollinearity and heteroscedasticity issue. The research model has also passed the multicollinearity problem since the maximum variance inflation factor (VIF) is 1.853 or below 10, so further regression results could be interpreted. We have used the central limit theorem regarding the normality test, which states that the amount of data is more than 30 observations assumed to be normally distributed (Gujarati and Porter, 2009).

Table 5 Pearson correlation

	FV_{it}	THS_{it}	$THmin1_{it}$	$TA1_{it}$	$TA2u_{it}$	$AUDIT_{it}$	OCF_{it}	$SIZE_{it}$	ROA_{it}	LQ_{it}	LEV_{it}	$GWTH_{it}$	$CAPINT_{it}$	$Post\_AEOI_{it}$
FV_{it}	1													
THS_{it}	0.064	1												
	0.133													
$THmin1_{it}$	0.099*	0.770**	1											
	0.020	0.000												
$TA1_{it}$	0.086*	0.097*	0.099*	1										
	0.044	0.023	0.020											
$TA2_{it}$	–0.061	0.060	0.059	0.234**	1									
	0.154	0.157	0.169	0.000										
$AUDIT_{it}$	–0.070	0.035	0.033	0.025	0.008	1								
	0.098	0.410	0.440	0.556	0.850									
OCF_{it}	0.510**	–0.024	–0.006	0.075	0.022	–0.009	1							
	0.000	0.573	0.881	0.078	0.605	0.841								
$SIZE_{it}$	0.297**	–0.160**	–0.129**	–0.029	–0.090*	0.073	0.178**	1						
	0.000	0.000	0.002	0.500	0.035	0.086	0.000							
ROA_{it}	0.471**	–0.031	–0.034	0.250**	0.144**	–0.098*	0.520**	0.250**	1					
	0.000	0.473	0.421	0.000	0.001	0.021	0.000	0.000						
LQ_{it}	–0.102*	–0.057	–0.097*	0.006	–0.001	–0.145**	0.067	0.011	0.286**	1				
	0.016	0.182	0.023	0.891	0.973	0.001	0.117	0.792	0.000					
LEV_{it}	0.033	0.140**	0.172**	0.011	–0.084*	0.113**	–0.202**	–0.017	–0.341**	–0.391**	1			
	0.445	0.001	0.000	0.802	0.048	0.008	0.000	0.686	0.000	0.000				
$GWTH_{it}$	0.027	–0.020	–0.024	0.051	0.004	–0.032	–0.042	0.015	–0.063	–0.046	0.132**	1		
	0.528	0.635	0.572	0.234	0.927	0.448	0.330	0.732	0.137	0.282	0.002			
$CAPINT_{it}$	0.056	0.073	0.110**	–0.070	0.079	–0.012	–0.069	0.030	–0.223**	–0.374**	0.272**	0.088*	1	
	0.188	0.088	0.010	0.098	0.064	0.773	0.105	0.483	0.000	0.000	0.000	0.039		
$Post\_AEOI_{it}$	–0.034	0.040	0.035	–0.032	0.013	0.032	–0.083	0.014	–0.041	–0.017	0.020	–0.022	–0.015	1
	0.431	0.345	0.412	0.447	0.756	0.458	0.052	0.741	0.331	0.693	0.634	0.611	0.730	

Hypotheses testing begin with determining the appropriate panel estimation model through three stages of testing. First, the Chow or F-test determines whether pooled OLS or fixed effect model is appropriate for estimation models. The second is the Breush-Pagan test which determines whether the estimation model is pooled OLS or random effect. Finally, the Hausman test determines the correct fixed effect or random effect model as an estimation model to analyse the data. In Table 6, the test results show that the proper model is fixed effect, and there is a heteroscedasticity problem, so the weighted least square (WLS) panel is used to test the hypotheses.

Table 6 Result of panel specification

	(1) *Controls only*	*(2)* *Monitoring* *No*	*(3)* *Monitoring* *No*	*(4)* *Monitoring* *Yes*	*(5)* *Monitoring* *Yes*
Panel data estimation					
Fixed effects estimator	8.56751e–87	6.63288e–086	1.74807e–085	2.76976e–085	1.23353e–082
Result	Fixed	Fixed	Fixed	Fixed	Fixed
Random effects estimator					
Breusch-Pagan test	1.09969e–72	1.03855e–070	3.00422e–070	3.07932e–070	1.00363e–067
Result	Random	Random	Random	Random	Random
Hausman test	1.977e–016	2.74233e–016	1.0248e–015	7.80379e–016	1.46122e–016
Result	Fixed	Fixed	Fixed	Fixed	Fixed
Summary	Weighted least square	Weighted least square	Weighted least square	Weighted least square	Weighted least square

5 Results

5.1 Regression results

The WLS regression in Table 7 in columns (4) and (5) is implemented to verify the hypotheses. The result shows that the existence of market-based governance in companies with TA activities (TA1 ∗ CG) is confirmed to be negatively correlated with the FV (0.41231, p-value < 0.01), so H1 is accepted. The comparison of base regression (without CG monitoring) and full model (with CG monitoring) shows that the coefficients of TA1 ∗ CG are higher [–0.00806 and –0.41231 in columns (3) and (5), respectively] compared with the baseline regression results, although the coefficients remain significantly negative. The results of testing the relationship between tax haven utilisation and FV in columns (2) and (4) show that a positive relationship between tax haven utilisation and FV does not take place when there is an external governance mechanism (THS ∗ CG) so that H2 is accepted. The regression results of tax audit as a control variable show highly negative significance with FV, which indicates that companies undergoing tax audits are considered to have a higher risk by stakeholders. This result shows that the tax audit in Indonesia is considered strict and has the potential to increase the financial and social costs of multinational firms. Our finding suggests that

the external CG monitoring system effectively prevents firms from benefiting through TA and profit-shifting activities and encourages firms' sustainable tax behaviour, specifically in Indonesia with a strict tax audit.

Table 7 The results of hypotheses testing

	(1) *Control only*	*(2)* *Monitoring* *No*	*(3)* *Monitoring* *No*	*(4)* *Monitoring* *Yes*	*(5)* *Monitoring* *Yes*
Const	–0.13440***	–0.137919***	–0.14611***	–0.13309***	–0.10506***
THS_{it}		0.01206***	0.01204***	0.00691	0.00298
$THS_{it} * CG_{it}$				0.01151	
$TA1_{it}$			–0.00806**		–0.00689*
$TA1_{it} * CG_{it}$					–0.41231***
$AUDIT_{it}$	–0.02889***	–0.03308***	–0.03006***	–0.03026***	–0.02584***
OCF_{it}	0.53992***	0.47525***	0.49813***	0.49041***	0.55510***
$SIZE_{it}$	0.007856***	0.00822***	0.00803***	0.00807***	0.00665***
ROA_{it}	0.15335***	0.16117***	0.16644***	0.15548***	0.14140***
LQ_{it}	–0.01100***	–0.01155***	–0.01169***	–0.01129***	–0.01270***
LEV_{it}	0.22523***	0.21914***	0.22799***	0.21676***	0.21774***
$GWTH_{it}$	–0.00266	–0.00242	–0.00373	–0.00257	–0.00328
$CAPINT_{it}$	0.08316***	0.06649***	0.06784***	0.07318***	0.06936***
$Post\_AEOI_{it}$	–0.00183	0.00083	0.00136	–0.00094	–0.00208
$IndustryDummy_{it}$	Yes	Yes	Yes	Yes	Yes
Adj. R-squared	0.67245	0.65496	0.70962	0.65688	0.74664
Prob. (F-statistics)	0.00000***	0.00000***	0.00000***	0.00000***	0.00000***
N	553	553	553	553	553

5.2 Robustness analysis

This study uses several measurements of TA and tax haven utilisation to enhance the robustness test, as shown in Table 8. In addition to using the number of THSs as a proxy for tax haven utilisation, our study also uses dummy variables to distinguish companies with and without THSs (THmin1). The other measurement of TA activities is TA2 (CETR) which shows the tax paid after deducting the tax refund received in the current year. Based on the results in Table 8, THmin1 and TA2 proxies are confirmed to be robust and produce evidence consistent with the main result.

5.3 Additional analysis

The comparison of the tax haven utilisation (THS) coefficients in Table 9 before the AEOI period in columns (1) and (2) is greater than the coefficients for the full periods in columns (3) and (4). This finding explains that optimistic valuations of the ownership of THSs decreased after implementing the information exchange (AEOI). The positive

valuation in FV due to the ownership of THSs decreased after exchanging tax information between countries. Consistent with Park (2018), the related party transactions for profit-shifting purposes weakened in Korean chaebol firms after enacting transfer pricing regulations. There are several explanations related to the findings. First, the information exchange has been effective in Indonesia from September 2018 through Law No. 9 of 2017. This regulation has caused the government to obtain 1.6 million information about wealth hidden in tax havens and other countries with more than 246.6 billion euros (Kompas, 2020). Second, our study finds that 73% of THSs are located in Singapore and Hong Kong, while the rest are spread across five countries that are British Virgin Island, Mauritius, Cayman Island, Bermuda, and the Bahamas. So that the information exchange between countries presents the potential for more significant financial and social risks for firms with subsidiaries in tax haven countries that also adopt this policy as their national regulation.

Table 8 Robustness test

	(1)	*(2)*	*(3)*	*(4)*
	Monitoring	*Monitoring*	*Monitoring*	*Monitoring*
	No	*No*	*Yes*	*Yes*
const	–0.14703***	–0.10946***	–0.13906***	–0.11056***
$THmin1_{it}$	0.03167***	0.01467**	0.03196***	0.02450***
$TA1_{it}$	–0.00910**	–0.00849**		
$TA1_{it} * CG_{it}$		–0.38702***		
$TA2_{it}$			–0.00979***	–0.00734***
$TA2_{it} * CG_{it}$				–0.09941***
$AUDIT_{it}$	–0.02854***	–0.02804***	–0.03007***	–0.02709***
OCF_{it}	0.44737***	0.47812***	0.43397***	0.38252***
$SIZE_{it}$	0.00828***	0.00670***	0.00826***	0.00738***
ROA_{it}	0.17117***	0.15433***	0.17119***	0.16448***
LQ_{it}	–0.01129***	–0.01276***	–0.01117***	–0.01234***
LEV_{it}	0.22837***	0.22004***	0.20462***	0.19759***
$GWTH_{it}$	–0.00144	–0.00243	–0.00189	–0.00188
$CAPINT_{it}$	0.04951***	0.05547***	0.05729***	0.06219***
$Post\_AEOI_{it}$	–0.00117	0.00137	–0.00195	–0.00282
$IndustryDummy_{it}$	Yes	Yes	Yes	Yes
Adj. R-squared	0.71135	0.73331	0.62348	0.69667
Prob. (F-statistics)	0.00000***	0.00000***	0.00000***	0.00000***
N	553	553	553	553

Note: ***Significant at 1% level, **significant at 5% level and *significant at 10% level.

Table 9 The comparison of the tax haven utilisation between the observations before the application of automatic exchange of information (AEOI) and in the full periods

	Before AEOI		*Full periods*	
	(1)	*(2)*	*(3)*	*(4)*
const	–0.29413***	–0.30547***	–0.14532***	–0.13945***
THS_{it}	0.02203***	0.02253***	0.01204***	0.01355***
$TA1_{it}$	–0.0166723*		–0.00807**	
$TA2_{it}$		–0.01199***		–0.00966***
$AUDIT_{it}$	–0.03600***	–0.03341***	–0.03017***	–0.02899***
OCF_{it}	0.5463***	0.54277***	0.49749***	0.46425***
$SIZE_{it}$	0.01175***	0.01164***	0.00804***	0.00827***
ROA_{it}	0.217639***	0.22515***	0.16630***	0.16738***
LQ_{it}	–0.01771***	–0.01654***	–0.01169***	–0.01148***
LEV_{it}	0.25428***	0.238756***	0.22836***	0.19583***
$GWTH_{it}$	0.00034	–0.00010	–0.00374	–0.00433
$CAPINT_{it}$	0.03240	0.06800***	0.06728***	0.07007***
$IndustryDummy_{it}$	Yes	Yes	Yes	Yes
Adj. R-squared	0.82083	0.79122	0.71051	0.62124
Prob. (F-statistics)	0.00000***	0.00000***	0.00000***	0.00000***
N	327	327	553	553

Note: ***Significant at 1% level, **significant at 5% level and *significant at 10% level.

5.4 Discussion

This study makes several contributions to the business and accounting literature. First, this study is one of the limited studies that empirically contribute to market-based governance as a monitoring mechanism for corporate tax behaviour, specifically profit-shifting and TA activities. We examine empirically and confirm that the presence of market-based governance undermines the positive effect of tax haven utilisation on FV. The following empirical finding is that the presence of market-based governance strengthens the negative effect of TA on FV. The empirical results confirm the sustainable theory that corporate executives act in line with sustainable tax strategies and maintain the company's long-term reputation. Consistent with Carter et al. (2021) and Zhang et al. (2021), sustainable tax behaviour is positively associated with a firm reputation and stakeholder support.

For the second contribution, we extend empirical understanding of corporate tax behaviour after implementing Indonesia's tax information exchange in 2018. The tax information exchange between countries allows the Indonesian tax authority to obtain data on individual and corporate assets abroad, including in tax haven countries, since the tax haven countries connected to Indonesia have implemented the AEOI agreement. Moreover, Singapore and Hong Kong, the most chosen to establish THSs, similarly implemented the AEOI agreement in the same year with Indonesia (OECD, 2021). We provide empirical evidence that the policy of exchanging tax information between countries for the past two years (2018 and 2019) has created potential risks and alarms

for listed companies in Indonesia's manufacturing and agriculture sectors. This finding confirms that collaboration between countries in minimising profit-shifting activities effectively controls firm tax decision-making in Indonesia.

Our study has several policy implications. First, we suggest that future transparency in domestic regulations is needed, though there has been much regulatory progress related to tax transparency for listed firms in Indonesia during our research period. For example, the mandatory disclosure of IFRS 12 started in 2015, mandatory reporting for a certain amount of transfer pricing transactions in 2016, and beneficial ownership disclosure in financial reports and AEOI started in 2018. Nevertheless, problems related to profit-shifting activities will continue in the future. Governments of non-tax haven countries, including Indonesia, must continue to harmonise domestic regulations with the BEPS project and take necessary follow-up actions to promote the reform of the international tax system. For Indonesia, to achieve the 2030 Indonesia SDGs, the government urgently needs to act to rebuild state finances after the crisis due to the pandemic that has caused the development of social and economic inequality. Roland and Römgens (2022) stated that after the COVID-19 crisis, the need for government revenues increased drastically, and policy options that seemed impossible to implement in a short time became a reality. Moreover, due to the pandemic crisis, investors emphasise long-term corporate viability, such as sustainable investment in the environment, social and governance (Singh et al., 2021).

Finally, our study has practical implications. Based on our findings, stockholders and creditors consider the future value of firms connected to tax haven countries, especially after the development of tax transparency policies changes in recent years. The presence of market-based governance is helpful for potential investors and creditors to identify companies that are more sustainable in tax behaviour, especially in anticipating future financial and social risks due to increased transparency by regulators.

6 Conclusions and limitations

This study investigates whether an external CG mechanism plays a role in increasing the sustainable tax behaviour of MNEs. This study argues that market-based governance functions as a monitoring mechanism for tax decision-making and impacts corporate valuation. The empirical result shows that market-based governance impacts a more severe decrease of FV in higher TA activities. Furthermore, our research finds that the positive correlation between tax haven utilisation and FV no longer exists when market-based governance is present. As an additional analysis, this study finds that the application of information exchange between countries has effectively encouraged the sustainable tax behaviour of MNEs.

This study contributes to the business and accounting literature in the following ways. First, providing novel empirical evidence supporting sustainable theory by identifying the existence of market-based governance as an important determinant that enhances sustainable tax behaviour. Second, this study provides evidence for the CG literature, specifically external mechanisms, by identifying the existence of market-based governance as an important determinant that affects firm tax decisions related to TA and profit shifting activities. Finally, it provides empirical evidence that the application of information exchange between countries effectively enhances the sustainable tax behaviour of multinational firms.

This study has limitations. The sample is limited to two main sectors, manufacturing and agriculture, so precaution is required in generalising the findings to other sectors. Next, the sample used is limited to a sample of companies that experience profit, so there is a potential for bias when applied to samples with different characteristics. Regardless of Indonesia's significant increases in tax transparency, this research needs to be interpreted with caution when generalising to other countries. These findings are expected to be more generalisable for countries where the regulatory changes are followed by stricter tax audits, thereby creating potential financial and social costs for companies. However, in countries where regulatory changes are not followed by strict monitoring from the government, market-based governance does not function to improve sustainable tax behaviour. Therefore, further research should investigate the application of market-based governance in international settings. Further studies can examine the potential differences in tax management behaviour between sectors and analyse the differences between these industries. In addition, further studies should explore other measures of external CG that can potentially pressure corporate tax policymakers.

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