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The effects of audit fees, audit quality and ownership structures on tax aggressiveness: evidence from manufacturing companies in Indonesia)

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Abstract

This study investigates the effect of audit fees, auditors' quality, and ownership structure on tax aggressiveness in Indonesian manufacturing companies. The sample of this study is based on 132 firm-year observations of IDX-listed companies in Indonesia during the 2018–2021 periods. Our study relies on the panel regression models to test the hypotheses. The results show that audit fees, audit quality with auditor industry specialization proxies, and foreign ownership significantly affect corporate tax aggressiveness. We also find significant differences in tax aggressiveness in the period before and during the Covid-19 pandemic. Our study provides a significant contribution to the accounting literature on how corporate tax aggressiveness is determined by audit characteristics and ownership structure.

Keywords

tax aggressiveness, audit fee, audit firms, auditor industry specialization, managerial ownership, foreign ownership, institutional ownership

INTRODUCTION

Tax is an essential thing in a country. Indonesia has several sources of state revenue in the form of tax revenue, non-tax revenue, and grants. The basis of state revenue is a contributor to the state treasury, with tax revenue having the highest contribution of the three. Unfortunately, companies still perceive tax as an unprofitable cost because companies consider that they cannot receive direct benefits from the tax, so many companies are making various efforts and strategies to be able to reduce or even avoid paying taxes.

The assumption is that unfavorable taxes can encourage a company to aggressively carry out tax avoidance activities. Tax aggressiveness can be defined as various tactics in tax planning implemented by a company to reduce the company's tax, both with the legal system (tax avoidance) and illegal systems (tax evasion). In practice, companies and their efforts to cut tax payments are by making and engaging in aggressive tax planning so that they carry out tax-aggressive activities. Tax avoidance has become a common thing from a business perspective in various countries because it is a driving factor in many corporate actions, such as increasing profits, increasing investment, and increasing incentives (Madah Marzuki and Syukur, 2021). Many studies have discussed the effect of corporate governance mechanisms on corporate tax aggressiveness decisions (Armstrong et al., 2015; Madah Marzuki and Syukur, 2021;

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Wahab et al., 2017). However, there still needs to be a more specific discussion regarding corporate governance mechanisms in Indonesian companies.

Previous research has discussed the influence of corporate governance aspects on tax avoidance, such as audit fees. Research by Hu (2018) with a sample of companies in China found that audit fees and tax avoidance with ETR proxy had a positive correlation. When a client is involved in tax aggressiveness, the auditor must approach companies that manage revenue, where this causes an increase in fees charged (Martinez and Lessa, 2013). In addition, previous research examines that auditor quality can reduce tax aggressiveness (Kanagaretnam et al., 2016; Riguen et al., 2020). Previous research also discusses essential aspects of corporate governance, such as ownership structure. Research by Madah Marzuki and Syukur (2021) discusses the influence of the ownership structure board of directors on tax aggressiveness. Unfortunately, previous research only discussed the ownership structure of the board of directors even though a company has more ownership structure classifications. This research was conducted by filling the gaps in previous research by discussing the effects of audit fees, audit quality, and ownership structure for tax aggressiveness, which uses developing country companies, specifically Indonesia.

The discussion regarding tax aggressiveness in Indonesia is expected to provide new insights. According to The State of Tax Justice (2020), tax aggressiveness by companies in Indonesia caused losses of IDR 67.6 trillion in 2020. Tax aggressiveness in Indonesia is ranked fourth in Asia, following China, India, and Japan. Indonesia is included in the category of Asian countries where the trend of tax aggressiveness is still high. According to Madah Marzuki and Syukur (2021), Indonesia has the lowest tax GDP-ratio among the ASEAN-5 countries at 13.6%, followed by the Philippines, Singapore, Malaysia, and the highest in Thailand. There is an expansion in this research due to the Covid-19 pandemic, which the Covid-19 pandemic prompted the Indonesian government to carry out tax incentives for the stability of the country's financial system. There was a change in the tax rate during the Covid-19 pandemic, which was initially 25% and then changed to 22% in 2020. This change is expected to provide additional views regarding differences in tax policy during the Covid-19 pandemic, which can be compared to other countries.

This research examines whether governance mechanisms influence corporate tax aggressiveness in Indonesia, especially in the manufacturing sector. This sector is the corporate sector with the most significant contribution to tax revenues in Indonesia. According to Kovermann and Velte (2019), tax avoidance is driven by seven corporate groups in the governance aspect, which are the alignment of incentives between management agents and principals, ownership structure, board composition, pressure from the capital market, audit matters, regulations and their connections in government and pressure from other interested parties. The discussion in this study only focuses on audit fees, audit quality, and ownership structure to see the effect on tax aggressiveness.

This paper is structured as follows. Section 2 describes the tax background in Indonesia. Section 3 describes the literature review and research hypotheses development, followed by the methodology in Section 4. This study also presents the results in Section 5, and the implication summarizes and limitations in Section 6, which is the last section of the paper.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Tax aggressiveness in Indonesia

Payment of taxes by taxpayers is an obligation to be able to support state revenues. Based on APBN (2020), the contribution of taxes to state revenue is 83.54%. In addition, taxes have many benefits in supporting the sustainability of a country, such as financing state development programs, regulating social and economic, and tools for equal distribution of people's welfare and stable economic situation. Unfortunately, many companies in Indonesia still decide to avoid their taxes.

Tax aggressiveness can be defined as a variety of tactics in tax planning that a company implements to reduce the company's tax, both through the legal system (tax avoidance) and illegal systems (tax evasion). Even though aggressiveness can be pursued by legal means, companies should refrain from aggressive tax planning and taking tax-aggressive actions.

According to The State of Tax Justice (2020), tax aggressiveness by companies in Indonesia cost the state IDR 67.6 trillion in 2020. In addition, according to information from the Kementerian Keuangan (2021), tax revenue from Indonesian manufacturing companies experienced a drastic decrease in 2020 at minus 20.21%, even though manufacturing companies are usually used as the basis for the corporate sector with the most significant contribution to state tax revenues. Non-optimal tax revenue in Indonesia is shown by a drastic reduction in the target and realization of 2020 at 21.33% (Direktorat Jenderal Pajak, 2020). As a result of the Covid-19 pandemic, which has weakened economic conditions, regulators are considering lowering the target figure for achieving tax revenue in 2020. These data support the condition that the tax-GDP ratio in Indonesia is still low. This situation can make Indonesian companies an exciting object to study concerning corporate tax aggressiveness.

Agency Theory

Agency Theory is used as a theoretical basis in a company's management context. In this theory, there are terms principal and agent. Principals give company agents rights and authority with the expectancy that company management can make decisions and implement actions aligned with the interests of shareholders. Still, sometimes it takes work to align the interests of owners and company management.

The interests of principals and agents can be related to the tax policies taken by the company, where the company's tax policies can represent the opinions of management and shareholders (Hanlon and Heitzman, 2010). Activities to avoid taxes can be influenced by various objectives to serve the interests of management and shareholders. This is likely to encourage management to engage in tax avoidance. In other words, managers may manipulate several transactions, which can lead to an increase in the collision of the interests of principals with agents regarding taxation.

Opportunistic behavior of managers causes shareholders to be subject to agency costs such as monitoring fees to monitor the behavior of managers to ensure that managers will take actions that prioritize the best expectancy of shareholders (Jensen and Meckling, 1976). Agency problems and the emergence of opportunistic behavior of managers also occur due to information asymmetry, in which the agent or manager has information in the form of data, facts, and reports, which is more profitable and better than information known to the principal or investor.

Companies that tend to be aggressive have agency problems in them. Agency problems can arise because good governance is not implemented within the company. Still, a company is considered successful if it can implement good governance to achieve its ultimate goals and obtain economic value in the long term. According to Desai and Dharmapala (2006), companies that implement good corporate governance tend to implement internal control mechanisms to prevent opportunistic managerial actions and create a negative relationship related to managers' equity incentives for tax avoidance.

Tax Agresiveness and Audit Fees

Audit fees are a company expenditure to use audit services. Based on agency theory, audit fees are one of the agency costs that the principal or shareholders also bear as an effort to monitor the agent. Determination of audit fees is based on the complexity of the audit process, which complexity can indicate aggressive tax planning.

Previous studies found a positive effect of audit fees on tax aggressiveness (Hu, 2018; Martinez and Lessa, 2013). When a client is involved in tax aggressiveness, the auditor must approach a company that manages revenue, which causes an increase in fees charged (Martinez and Lessa, 2013). As for taxation that implements a self-assessment system in Indonesia and no special tax audit, there is a tendency related to the ease of carrying out tax avoidance without being detected (Simmons and Cheng, 1996). Based on what has been explained previously, the researcher proposes the first hypothesis is:

H1: Audit fees have a positive effect on tax aggressiveness

Tax aggressiveness and audit quality

Auditors indirectly reduce the company's ability and incentives to avoid taxes because significant book-tax differences can increase the likelihood of being detected by tax authorities (Hanlon, 2005). Agency theory explains the external auditor is also a qualified party as a mediator between the principal and

the agent due to the possibility of differences in interest. Managers tend to reduce their determination to play a role in the company's tax avoidance strategy if the company's audit quality level is high (Riguen et al., 2020). Audit quality can be obtained by using Big 4, which are considered capable of detecting fraud in terms of aggressive tax planning. Besides that, Big 4 usually maintain their reputation, so they are less motivated to commit fraud. Based on what has been explained previously, the researcher proposes a second hypothesis (a) which is:

H2a: Big 4 has a negative effect on tax aggressiveness

Auditors with industry specialization are considered to have a better understanding of the characteristics of each company sector in carrying out the audit process so that they can provide more credible financial reports. Riguen et al. (2020), based on a sample of companies in the UK, found that audit quality is negatively correlated with tax avoidance. In line with research by Kanagaretnam et al. (2016) found evidence that auditor quality is negatively related to the chance of being caught with tax aggressiveness. An auditor with a position as an industry specialist can indicate that the auditor improves the quality of audit client earnings compared to a non-industry specialist (Lee and Kao, 2018). Based on what has been explained previously, the researcher proposes a second hypothesis (b) which is:

H2b: Auditor industry specialization has a negative effect on tax aggressiveness

Tax aggressiveness and Ownership Structure

Based on the agency theory, a splitting of control between principals and agents sometimes creates problems where the interests of shareholders and company managers are not aligned. The issue of interest in corporate board members regarding share ownership has become an exciting subject in corporate governance discussions because it can lead to potential opportunism in manipulating financial statements, such as acts of tax aggressiveness. Managers will use tax aggressiveness to gain hidden benefits (Desai and Dharmapala, 2006).

Madah Marzuki and Syukur (2021) found a positive influence between board ownership and tax aggressiveness. Board ownership affects higher tax aggressiveness because block holders can protect their personal needs and expectations without considering the needs of other investors. Cabello et al. (2019) found that different levels of manager ownership affect different levels of tax avoidance. Since there are still problems related to corruption, collusion, and nepotism in Indonesia, it can be concluded that managerial ownership can have a positive effect on tax aggressiveness. Based on what has been explained previously, the researcher proposes a third hypothesis which is:

H3: Managerial ownership has a positive effect on tax aggressiveness

Foreign ownership can be used as a monitoring tool in companies where ownership is expected to improve company performance (Alkurdi and Mardini, 2020). Regarding agency theory, the principal has full expectations for the agent to act following the principal's interests. This can encourage agents to take shortcuts in increasing shareholder wealth. One of the company's strategies for increasing the company's wealth is to carry out a tax avoidance strategy. Companies with foreign ownership are considered to help managers better understand corporate strategies, such as tax avoidance strategies, which aim to enrich their shareholders (Barros and Sarmento, 2020).

Alkurdi and Mardini (2020) found that foreign ownership correlated positively with tax avoidance. There are indications that foreign shareholders can influence investee companies due to weak protection against foreign holders. Likewise, Annuar et al. (2014) found that foreign ownership positively relates to tax avoidance based on a research sample of listed companies in Malaysia. Foreign ownership is considered to tend to avoid taxes rather than consider the risks (Annuar et al., 2014). Companies with an international scope are considered capable of exploiting on an international scale concerning tax avoidance activities, both in the host and parent countries (Alkurdi and Mardini, 2020). Based on what has been explained previously, the researcher proposes a fourth hypothesis which is:

H4: Foreign ownership has a positive effect on tax aggressiveness

Institutional ownership is one of the essential keys to monitoring processes in decision-making and manager actions, which provide beneficial results (Gillan et al., 2003). Regarding agency theory, the principal has full expectations for the agent to act following the principal's interests. Institutional ownership in the company urges managers to be more careful in making decisions. This ownership has a high control capability related to its role as a shareholder. The existence of institutional ownership in the company usually has a high percentage. It is spread throughout the company, which is possible to use as a tool to minimize agency problems in the hope that it can also minimize the urge to take tax avoidance actions (Graham and Tucker, 2006).

Alkurdi and Mardini (2020) found that institutional ownership in Jordanian companies has a negative correlation with tax avoidance. Ying et al. (2017) found that a company with a high percentage of institutional ownership tends to reduce tax aggressiveness. This institutional ownership encourages managers to pay more taxes to maintain their reputation, receive promotions, and advance their career paths. Based on what has been explained previously, the researcher proposes a fifth hypothesis which is:

H5: Institutional ownership has a negative effect on tax aggressiveness

METHODS

Sample selection and data collection

This study uses a population of manufacturing companies listed on the Indonesia Stock Exchange. The reason for choosing a company with a manufacturing sector is because manufacturing companies have a reasonably significant role in the economic sector in Indonesia. The manufacturing sector also dominates companies on the IDX and tax revenue from the manufacturing sector is quite significant. It can be used as a basis for tax revenue compared to other sectors. These reasons are of particular concern regarding the object of this research. The use of the manufacturing sector is expected to provide relevant results representing all industrial companies in Indonesia. Table 1 presents the sample selection for this study.

Insert Table 1 about here

Purposive sampling was used to set aside data that did not match the research criteria so that the total sample for this study was 132 companies with a total percentage of 20 percent of the total population of manufacturing companies. Some 259 companies, with a total percentage of 39 percent, did not experience consistent profits over the four periods. Some 60 companies, with a total percentage of 9 percent, did not publish annual reports consistently for four periods. Some 197 companies, with a total percentage of 30 percent, did not report audit fee data according to research needs; some 12 companies, with a total percentage of 2 percent, are outlier data set aside for research data processing purposes.

The data for this research were obtained from the official website of the Indonesian stock exchange and the company's website, and several variables came from the Bloomberg terminal. The collected data is then processed using panel data regression and the selected fixed effect model with Eviews 12 software to determine the effect of the independent variables on the dependent variable. In addition, this study also conducted a differential test using IBM SPSS 26 software and a sensitivity test with Eviews 12 software.

Research Model and Variables Measurement

The formulated equation in the panel data regression model is as follows:

$$TAX_{AGGR} = \beta_0 INTERCEPT_{it} + \beta_1 AFEES_{it} + \beta_2 BIG4_{it} + \beta_3 ASPEC_{it} + \beta_4 MAO_{it} + \beta_5 FOW + \beta_6 INO + \beta_7 SIZE_{it} + \beta_8 MBTV_{it} + \beta_9 PROFITABILITY_{it}$$

Dependent variable

Many researchers have used various methods when measuring tax aggressiveness, such as the effective tax rate (Lanis and Richardson, 2011; Minnick and Noga, 2010). The effective tax rate (ETR) proxy is often used to calculate tax aggressiveness because excess ETR

measures a company's ability to minimize its tax expenses by using its pre-tax accounting income and describing the amount of the relative tax expenses within the company (Rego, 2003).

The tax aggressiveness dependent variable is coded TAXAGGR. The company is taking tax aggressiveness if the ETR rate is low. This study uses the effective tax rate formula based on (Madah Marzuki and Syukur, 2021), which is applied as a basis for measuring tax aggressiveness.

Independent and Control Variables.

This study uses an audit fee variable coded AFEES. Agree with previous research that audit fees are based on measurements using the natural logarithm of audit fees to make the results obtained uniform (Madah Marzuki and Syukur, 2021).

Furthermore, this study uses audit quality variables whose measurements use two proxies, Big 4 and auditor industry specialization. Audit quality variables are coded BIG4 and ASPEC. Audit quality with Big 4 proxy is based on the accounting firm lists, namely Deloitte affiliate Osman Bing Satrio & any; PwC affiliate Tanudiredja, Wibisana, Rintis & Partners; EY affiliate Purwantono, Sungkoro & Surja; KPMG affiliate of Siddharta Widjaja & Partners. The calculation of this variable is measured based on the previous study by giving code 1 for a company that uses audit services by Big 4 and code 0 otherwise (Madah Marzuki and Syukur, 2021).

Meanwhile, industry specialization is recognized if the accounting firm maintains at least a 10 percent market share for that industry (Riguen et al., 2020). Audit quality with a proxy for auditor industry specialization is measured by giving code 1 if the audit firm has a threshold of 10 percent or more of the audit market share in a particular industry and code 0 otherwise.

Corporate governance is inseparable from the role of the ownership structure, so this study consists of three essential structures within the company. First, the managerial ownership structure with the MAO code is measured by the proportion of share ownership by the board, both the board of directors and the board of commissioners. Second, a company's foreign ownership structure with code FOW is measured by the proportion of share ownership by individuals and institutions foreign parties. Third, the institutional ownership structure with the INO code is measured by the proportion of local and foreign institutional share ownership in a company. These three measurements of ownership structure are based on previous research (Alkurdi and Mardini, 2020).

In addition, this study uses control variables using calculations from financial ratios. First, the company's size with the code SIZE is measured using total assets. Larger companies tend to be more active in aggressively carrying out tax avoidance activities than lower-sized companies (Lanis and Richardson, 2011; Martinez and Lessa, 2013; Richardson and Lanis, 2007). Second, the market-to-book value with the MBTV code is measured using the market-to-book value ratio. According to Manzon and Plesko, there is a prediction of a positive correlation between MBTV and tax aggressiveness because companies tend to invest in assets that are tax-profitable and thus can freely choose the type of investment to reduce taxes (Madah Marzuki and Syukur, 2021). Third, profitability with the PROFITABILITY code is measured using the natural logarithm of EBIT (Earnings before interest and taxes). Companies with lower profitability will be followed by smaller incentives to engage in tax aggressiveness (McGuire et al., 2012). These three control variable measurements are based on previous research (Madah Marzuki and Syukur, 2021). Table 2 presents the operational definition of variables used in this study.

Insert Table 2 about here

FINDINGS AND DISCUSSION

Descriptive Statistics

Table 3 presents the descriptive statistics of this study. TAXAGGR with a minimum number of 0.0017 and a maximum number of 0.5034. The mean value of TAXAGGR is 0.2350. AFEES with a minimum score of 18.4537 and a maximum score of 23.6410. The mean value of AFEES is 20.6689. Big 4 in their audit services amount to 39.4%, and the remaining 60.6% of companies use audit services that are non-Big 4. Furthermore, ASPEC shows that in a sample of research companies, with a market share threshold of 10% for industry specialization, 50.8% were audited by auditor industry specialization, and the remaining 49.2% were audited by auditor non-industry specialization.

MAO with a minimum number of 0.0000 and a maximum of 73.2031, followed by a mean MAO value of 8.2947. FOW with a minimum number of 0.00 and a maximum of 94.2675, followed by a mean FOW value of 28.5441. INO with a minimum score of 0.0261 and a minimum score of 99.8149, followed by a mean INO value of 80.8964. Meanwhile, the control variable SIZE shows SIZE with a minimum value of 20.5726 and a maximum value of 33.0708. MBTV with a minimum number of 0.1021 and a maximum number of 60.6718. PROFITABILITY with a minimum number of 0.0000 and a maximum number of 30.4688

Insert Table 3 about here

Hypothesis tests

This study conducted model tests consisting of Chow, Lagrange Multiplier, and Hausman test to find the best model for panel data regression. Based on the three test models, the model chosen in this study is the fixed effect model. This study also uses the classic assumption test, which consists of normality, multicollinearity, and heteroscedasticity tests. The regression model of this study is feasible in the normality and multicollinearity tests. However, the regression model of this study still has heteroscedasticity problems. The heteroscedasticity problem is solved by adding weight estimates to the fixed effect model. Table 4 presents the results of panel data regression with a fixed effect model and weighted estimation.

Insert Table 4 about here

Coefficient of determination

This test is based on the adjusted R2 number, which refers to evidence from research results that the adjusted R2 number reaches 0.802. The results show that the independent and control variables have contributed to TAXAGGR by 80.20% and the remaining 19.80%, which is an influence that might occur because of other variables that the authors did not apply to this model.

F-test

This test proves that the F-statistic number is 13.944, followed by a probability number of 0.000 <0.05, which refers to these results. It can be concluded that all independent variables and control variables in the study simultaneously have a significant effect on tax aggressiveness.

Panel regression results

This test proves that AFEES significantly affects tax aggressiveness, with the ETR proxy as the dependent variable. The result refers to the p-value of 0.001, followed by a coefficient of -0.026. ASPEC has a significant effect on tax aggressiveness, by proxy ETR, as the dependent variable. The result refers to the p-value of 0.008, followed by a coefficient of -0.040. As the dependent variable, FOW significantly affects tax aggressiveness by proxy ETR. The result refers to the p-value of 0.033 followed by a coefficient of -0.001.

Meanwhile, the independent variables BIG4, MAO, and INO did not prove a significant effect on tax aggressiveness, with the ETR proxy, as the dependent variable. The result refers to the sequential value of the p-value of the variable, which is 0.090; 0.582; 0.182 is above the value of 0.05.

The control variable shows different results. SIZE shows a p-value of 0.000, which means that the SIZE variable significantly affects increasing ETR. Furthermore, the PROFITABILITY control variable shows a p-value of 0.000, which means that the PROFITABILITY variable has a significant influence on increasing ETR. On the other hand, the MBTV control variable does not prove a significant effect on tax aggressiveness. The result refers to the MBTV p-value of 0.638, above the value of 0.05.

t-test shows that the first, second (b), and fourth hypotheses in this study can be accepted in which the independent variables of audit fees, audit quality with proxies of auditor industry specialization, and foreign ownership significantly affect tax aggressiveness. In contrast, research evidence shows BIG4, MAO and INO have no significant effect on tax aggressiveness, so the second (a), third, and fifth hypotheses must be rejected.

Independent t-test

An Independent t-test was applied to see the significance of the difference in average TAXAGGR in the period before and during the Covid-19 pandemic. Table 5 presents the results of Mann-Whitney test.

Insert Table 5 about here

The mean TAXAGGR before Covid-19 was 0.2466 and during Covid-19 was 0.2234. The results of the Mann-Whitney test show that the dependent variable TAXAGGR has a significant difference between the pre-Covid and Covid periods followed by asymp. sig. (2-tailed) 0.031 is below the value of 0.050. The results show that TAXAGGR has a significant difference between the period before the Covid-19 pandemic and during the Covid-19 pandemic, so the sixth hypothesis in the study could be accepted.

Sensitivity test

This study adds a sensitivity test by applying Moderated Regression Analysis (MRA) in the regression process. This test was carried out to determine how the correlation of the existence of the Covid-19 pandemic is related to the relationship between independent variables, namely audit quality, audit fees, and ownership structure, to the dependent variable, namely tax aggressiveness. The Covid-19 pandemic variable was assessed using a dummy variable, code 0 for the before Covid-19 period and 1 for the during Covid-19 period. Table 6 presents the results of sensitivity test.

Insert Table 6 about here

The regression results show a positive and significant relationship between AFEES and TAXAGGR in the presence of Covid-19. The probability number shows it for AFEES*COVID 0.021. On the other hand, a negative and significant relationship was found in the variables ASPEC, MAO, and INO to TAXAGGR during Covid-19 as shown by the probability numbers for ASPEC*COVID, MAO*COVID, INO*COVID which were respectively 0.025; 0.008; 0.004. The results also show no significant relationship found in the BIG4 and FOW variables on TAXAGGR at the time of Covid-19.

CONCLUSION

The results of this study provide quite interesting evidence by using a sample of 132 manufacturing companies in Indonesia from 2018 to 2021. First, audit fees have a positive effect on tax aggressiveness. This result supports the first hypothesis and previous research (Hu, 2018; Martinez and Lessa, 2013). There are indications that the level of complexity of the audit process can describe a complicated tax strategy as an effort to avoid undetected tax aggressiveness.

Second, audit quality as a proxy for industry specialization positively affects tax aggressiveness. This result supports the second hypothesis (b) and previous research (Lee and Kao, 2018; McGuire et al., 2012). There are indications that the auditor industry specialization could use their auditing and tax knowledge to develop less detectable tax strategies, such as tax aggressiveness, to benefit audit clients from a reduced tax burden.

Third, foreign ownership structure has a positive effect on tax aggressiveness. This result supports the fourth hypothesis and previous research (Alkurdi and Mardini, 2020; Annuar et al., 2014). There are indications that there are agency problems within manufacturing companies related to the company and its relationship with foreign ownership, and there is a tendency for foreign ownership to carry out tax aggressiveness without considering the risks that may be obtained.

Fourth, there is a significant difference between tax aggressiveness and tax aggressiveness. This result supports the sixth hypothesis and research by Barid and Wulandari (2021). There are indications from the results of this study that the existence of the Covid-19 pandemic has made managers tend to carry out tax-aggressive activities. Managers tend to take advantage of tax law loopholes to avoid corporate taxes aggressively.

Otherwise, this study proves that the Big 4 has no significant effect. This result does not support the second hypothesis (a) of the study, but it supports previous research (Laras Widyanto et al., 2019; Sri et al., 2019; P. Wulandari and Sudarma, 2022). There are indications that KAP Big 4 and KAP non-Big 4 tend to implement Standar Profesional

Akuntan Publik (SPAP) in the audit procedures of companies so that they are not involved in fraudulent acts, such as tax aggressiveness.

This study also proves that managerial ownership structure does not significantly affect tax aggressiveness. These results do not support the third hypothesis, but it supports previous research, which found that managerial ownership structure did not significantly affect tax avoidance with ETR proxy (Krisna, 2019; T. R. Wulandari and Purnomo, 2021). There are indications that many Indonesian companies still do not implement a party ownership program internal company Low percentage level. Managerial ownership structure limits the role of managerial shareholders concerning tax planning and tax avoidance.

Furthermore, this study proves that the institutional ownership structure has no significant effect on tax aggressiveness. This result does not support the fifth hypothesis, but it supports previous research, which found that institutional ownership structure did not significantly affect tax avoidance with ETR proxy (Adeyani Tandean, 2016; Dwihartanti et al., 2019). There are indications that institutional shareholders are focusing on other corporate strategies, not tax aggressiveness, in maximizing and maintaining their profits both now and in the future.

This research's limitations include the independent variables limited to audit fees, audit quality, and ownership structures. The following studies can review many governance mechanisms, such as corporate boards and audit committees. In addition, this study only uses effective tax rate proxies in measuring tax aggressiveness. Many other measuring proxies can be reviewed in greater detail, such as the cash-effective tax rate and the tax-book differential. Future research is expected to expand research from existing limitations.

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Table 1.
Sample selection

Sample Criteria	Number of Companies 2018-2021	Percentage
IDX Manufacturing companies	660	100%
(-) Companies that experience losses	259	39%
(-) Companies missing annual reports	60	9%
(-) Companies missing audit fee data	197	30%
(-) Outliers	12	2%
Number of research samples	132	20%

Table 2.
Variable operational definitions

No	Variable	Definition	Source
		Dependent variable	
1	TAXAGGR	The ratio of the effective tax rate with the tax expense/profit before tax formula	Annual report
		Independent variables	
2	AFEES	Natural logarithm of audit fees	Annual report
3	BIG4	Code 1 for companies with Big 4 audit services and code 0 for otherwise	Annual report
4	ASPEC	Code 1 for audit firms with a threshold of ≥10% and code 0 for otherwise	Annual report
5	MAO	Percentage of managerial ownership as measured by the number of shares by shareholders of the board/ number of outstanding shares x 100%	Annual report
6	FOW	Percentage of foreign ownership as measured by the number of shares by foreign shareholders/ number of outstanding shares x 100%	Annual report
7	INO	Percentage of foreign ownership as measured by the number of shares by institutional shareholders/ number of outstanding shares x 100%	Annual report
		Panel C: Control variables	
8	SIZE	Natural logarithm of total assets	Annual report
9	MBTV	The market-to-book value ratio is the share price/ book value per share	Bloomberg terminal
10	PROFITABILITY	Natural logarithm of EBIT	Bloomberg terminal

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Table 3.
Descriptive statistics

Variable	Minimum	Maximum	Mean	SD
Panel A: Dependent variable				
TAXAGGR	0.0017	0.5034	0.235	0.0918
Panel B Independent variables				
AFEES	18.4537	23.641	20.6689	1.2663
BIG4	0.0000	1.0000	0.3939	0.4905
ASPEC	0.0000	1.0000	0.5076	0.5018
MAO	0.0000	73.2031	8.2947	18.5767
FOW	0.0000	94.2675	28.5441	32.9939
INO	0.0261	99.8149	80.8964	24.8884
Panel C: Control variables				
SIZE	20.5726	33.0708	29.1659	1.9198
MBTV	0.1021	60.6718	4.4206	9.2431
PROFITABILITY	0.0000	30.4688	26.1933	5.0181
Variable dummy	Category	Frequency	Percentage	
BIG4	0	80	60.6	
	1	52	39.4	
ASPEC	0	65	49.2	
	1	67	50.8	

Table 4.
Fixed effect model (weighted)

Variables	Coefficient	Std. Error	Prob.
C	0.288728	0.133841	0.034**
AFEES	-0.025599	0.007546	0.001**
BIG4	0.030128	0.017580	0.090
ASPEC	-0.040433	0.014903	0.008**
MAO	-0.000503	0.000909	0.582
FOW	-0.000674	0.000312	0.033**
INO	0.000767	0.000571	0.182
SIZE	0.011042	0.002628	0.000**
MBTV	-0.000666	0.001411	0.638
PROFITABILITY	0.004821	0.001096	0.000**
Model summary	ETR		
R-squared	0.86399		
Adj. R-squared	0.80203		
F-statistic	13.94410		
Prob(F-statistic)	0.00000		
Standard error	0.05527		
**Significance < 0.05			

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Table 5.
Mann-Whitney test

Variable	Min.	Max.	Mean	Min.	Max.	Mean	
	Before Covid-19 N = 66			During Covid-19 N = 66			Mann-Whitney test
TAXAGGR	0.02	0.50	0.2466	0.00	0.46	0.2234	0.031**

**Significance < 0.05

Table 6.
Sensitivity tests

Variables	Coefficient	Std. Error	Prob.
AFEES*COVID	0.021983	0.009364	0.021**
BIG4*COVID	0.023887	0.022653	0.295
ASPEC*COVID	-0.052829	0.023097	0.025**
MAO*COVID	-0.002009	0.000735	0.008**
FOW*COVID	-0.000319	0.000183	0.086
INO*COVID	-0.001833	0.000625	0.004**

**Significance < 0.05