

The impact of return on assets (ROA), current ratio (CR), debt to assets ratio (DAR), and company size on effective tax rate (ETR) for the top 100 companies in Kompas in the years 2020-2023

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Abstract

This study aims to examine the impact of various financial circumstances on the effective tax rate (ETR) of manufacturing enterprises listed on the Indonesia Stock Exchange between 2020 and 2023. The sample size was 47 distinct industrial organizations, and a panel data regression analysis is implemented to achieve the investigation's objectives. The return on assets (ROA) and the debt-to-asset ratio (DAR) are both significant components in the process of determining the effective tax rate (ETR), as established by the research that was examined. Despite this, it is crucial to recognize that the efficiency transfer rate (ETR) does not seem to be significantly impacted by the current ratio (CR). It is recommended that organizations analyse the financial factors that affect the effective tax burden they are subjected to. The following findings serve as the foundation for this recommendation.

Keywords: *return on asset; current ratio; debt to asset ratio; company size; effective tax rate*

Abstrak

Tujuan dari penelitian ini adalah untuk menguji dampak berbagai keadaan keuangan terhadap tarif pajak efektif (ETR) pada perusahaan manufaktur yang terdaftar di Bursa Efek Indonesia antara tahun 2020 dan 2023. Ukuran sampelnya adalah 47 organisasi industri yang berbeda, dan analisis regresi data panel diterapkan untuk mencapai tujuan penelitian. Return on assets (ROA) dan debt-to-asset ratio (DAR) merupakan komponen penting dalam proses penentuan tarif pajak efektif (ETR), sebagaimana ditetapkan dalam penelitian yang diteliti. Meskipun demikian, penting untuk menyadari bahwa tingkat transfer efisiensi (ETR) tampaknya tidak terpengaruh secara signifikan oleh rasio lancar (CR). Disarankan agar organisasi melakukan analisis untuk menentukan sejauh mana faktor keuangan yang mereka hadapi mempengaruhi beban pajak efektif yang mereka tanggung. Temuan berikut menjadi dasar rekomendasi ini.

Kata kunci: *return on asset; current ratio; debt to asset ratio; ukuran perusahaan; effective tax rate*

INTRODUCTION

One of the most important ways for a country to generate revenue is through the collection of taxes. As a consequence of this, it is of the utmost necessity to proceed with the inquiry into the payroll department of the corporation. One of the statistics that is utilized in payroll management is known as the effective tax rate (ETR), which is used for determining the precise tax rate that a firm is expected to pay. This rate is determined by calculating the effective number of employees. Studies that were carried out in the past have shown that the effective tax rate (ETR) of a corporation is determined by the economic and financial features of the corporation. These characteristics include the corporation's size, liquidity, solvency, and profitability. However, the findings do not exhibit total consistency, which necessitates further inquiry into the matter. Specifically, the purpose of this research is to investigate the impact that various measures of profitability, including return on assets (ROA), current ratio (CR) as a measure of liquidity, debt-to-asset ratio (DAR) as a measure of solvency, and business turnover, have on the total effective tax rate (ETR) of manufacturing companies that are listed on the Indonesia Stock Exchange.

One of the most important financial and accounting characteristics that has a strong connection with the effective tax rate (ETR) is the firm size. Other important parameters include the debt-to-asset ratio (DAR), the current ratio (CR), and the return on assets (ROA). Among these aspects, there is a significant link that occurs. In order to determine whether or not the firm is able to meet its financial responsibilities, the current ratio (CR) is utilized. On the other hand, the return on assets (ROA) is utilized to enhance the efficiency with which the company utilizes its resources while simultaneously making profits. An additional evaluation of the composition of an organization's debt is carried out by the debt-to-asset ratio, which is also referred to as the DAR. On the other hand, the size of the organization can be an indicator of successful approaches to meeting the responsibilities that are included in the contractual agreements of the organization.

As the cornerstone for the relevance of this study, the implications that this research has for the process of developing a company's reputation are the foundation of this study's significance. The management of a company's assets, liquidity, and capital structure can potentially have an impact on the management of the company's operations as well as the amount of debt that the company carries. Because of this, it is of the utmost significance to have a thorough grasp of the link that exists between size, current ratio (CR), debt asset ratio (DAR), return on assets (ROA), and effective tax rate (ETR) in the context of the operations and finances of a company. This is because of the fact that these ratios are all related to this relationship.

For the purpose of this inquiry, the hypothesis concerning this association will be investigated by making use of the EViews program. The information that has been presented pertains to the financial standing of companies that were featured in the Kompas 100 index during the preceding fiscal year. In order to achieve our goal of gaining a better understanding of the ways in which the variables that have been mentioned interact with one another and the ways in which they influence the ETR (effective tax rate) of companies that are traded on the Indonesian stock market, the purpose of this inquiry is to improve our understanding of these interactions.

LITERATURE REVIEW

Impact of profitability on tax aggression

The utilization of a profitability ratio is one method that may be utilized to evaluate the capacity of an organization to earn income from its assets of any kind. This allows companies to implement more aggressive tax reduction strategies (Puspita & Putra, 2021) (Herlinda &

Rahmawati, 2021). Enterprises can implement these strategies as a result of reduced taxes, which are a result of a restricted income. Managers strive to optimize profits by adhering to the principle of agglutination, which mandates that these organizations make every effort to maximize earnings. It was determined that there is a substantial correlation between tax aggressiveness and profitability after conducting a thorough investigation. This demonstrates that profitability is a factor that contributes to the adoption of aggressive tax management strategies. According to Maulana's (2020) research, there is a positive correlation between profitability and aggressive taxation. This has been taken into account. Riswandari and Bagaskara (2020) were the first to identify a negative correlation between tax aggression and profitability. They discovered that this association was in direct opposition to their expectations. Dinar et al. (2020) reached a comparable conclusion, namely that there was a detrimental correlation between profits and tax aggression. They discovered that this connection was detrimental. According to Mahdi et al. (2018) assert that tax aggression is not contingent upon profitability; rather, it is self-sufficient. Based on the previous study, the hypothesis of the study that the authors are focusing on is as follows:

H₁: Profitability has an impact on tax aggression.

The Effects of liquidity on tax aggression

Businesses often employ the instrument of liquidity to address their challenges in repaying accumulated debt from their assets. A high liquidity ratio suggests that the company is in a strong financial position. Companies will strive to reduce laboratory costs to maximize their tax savings, as a strong liquidity ratio encourages them to extend their laboratory periods in the coming years (Purba & Kuncahyo, 2020). It has been shown that liquidity often plays a role in encouraging tax aggression (Awaliyah et al., 2021). Further investigation reveals that liquidity has a negative impact on tax antagonism, as highlighted by Herlinda and Rahmawati (2021). Furthermore, based on the latest data, it appears that tax aggressiveness is not affected by liquidity (Amalia, 2021). Based on the previous study, the hypothesis of the study that the authors are focusing on is as follows:

H₂: Liquidity has an impact on tax aggression.

The effect of leverage on tax aggression

In order to address the obstacles, they face in repaying the debt they have accrued from their assets, companies typically employ the liquidity instrument. This is done to address the challenges they face. A high liquidity ratio is a sign that a corporation is in a stronger financial position than it would otherwise be. Companies will endeavour to minimize their laboratory expenditures in order to optimize their tax savings, as indicated by the 2020 research conducted by Purba and Kuncahyo. This is a result of the fact that a strong liquidity ratio motivates enterprises to extend their laboratory periods. An investigation conducted by Awaliyah and co-workers in 2021 has demonstrated that liquidity frequently contributes to the promotion of tax aggression. As evidenced by the investigation's results, this was verified. New research indicates that liquidity has a detrimental effect on tax hostility, which is consistent with the conclusions of Herlinda and Rahmawati (2021). The world was informed of this discovery by the authors. Additionally, it would seem that liquidity does not influence the aggressiveness of tax measures, as indicated by the most recent data (Amalia, 2021). From the data, it is possible to derive this conclusion. Based on the previous study, the hypothesis of the study that the authors are focusing on is as follows:

H₃: Leverage has an impact on tax aggression.

The effect of company size on tax aggression

The operational variables of a company can be combined to determine the scope of the firm, thereby facilitating that determination. This is the corporation's overall capacity. The likelihood of a company being subject to tax audits is significantly elevated when the size, scope, and daily knowledge of its employees are all considered. Businesses can implement a proactive tax management strategy that aims to enhance specific earnings while simultaneously decreasing tax benefits, thereby reducing the probability of experiencing a loss in the Effective Tax Rate (ETR) (Sari & Rahayu, 2020; Oktavianingrum & Mildawati, 2018). To accomplish the objectives mentioned above, this strategy may be implemented. (Badjuri et al., 2021; Utomo & Fitria, 2020) The study's results, which demonstrate that the tax aggressiveness of a company is significantly and adversely affected by its scale, suggest that the size of the company has an impact. Octavianingrum and Mildawati (2018) discovered a correlation between the extent of the corporate entity and tax aggression. This correlation was demonstrated to be positive. Previous research (Goh et al., 2019; Prasetyo & Wulandari, 2021) has demonstrated that the likelihood of a company engaging in aggressive tax techniques against its employees is not influenced by the scale of the company. The findings of these studies can be used to derive this conclusion. Based on the previous study, the hypothesis of the study that the authors are focusing on is as follows:

H₄: Company Size has an impact on tax aggression.

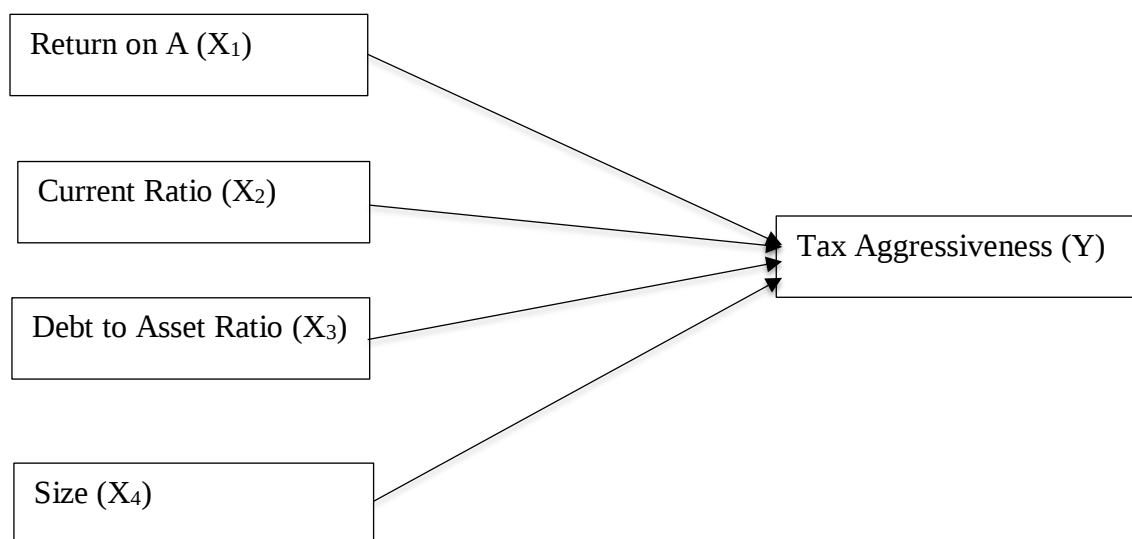


Figure 1. Example of a research framework

Source: Information provided by authors

RESEARCH METHOD

A total of 47 distinct industrial enterprises were listed on the Indonesian Stock Exchange between 2020 and 2023. The exchange-listed these enterprises. The examination of these subjects is conducted through the use of a quantitative technique and the analysis of panel data. In contrast to ROA, CR, and DAR, which are variables that operate independently of one

another for their respective purposes, ETR is dependent on other parameters. Calculations are performed using this model.

$$ETR_{i,t} = \alpha + \beta_1 ROA_{i,t} + \beta_2 CR_{i,t} + \beta_3 DAR_{i,t} + \varepsilon_{i,t}$$

Dimana:

$ETR_{i,t}$	: <i>Effective Tax Rate</i> at the company i in the year t
$ROA_{i,t}$	: Return on Assets at the company i in the year t
$CR_{i,t}$	: Current Ratio at the company i in the year t
$DAR_{i,t}$	: Debt to Asset Ratio at the company i in the year t
α	: Constant
$\beta_1, \beta_2, \beta_3$	: The regression coefficient of each variable
$\varepsilon_{i,t}$	: Residual

The partial (t-test) and simultaneous (Statistic F) tests are frequently employed in the data processing process to test statistical hypotheses. These two categories of tests are examples of techniques that are frequently employed. To ascertain the regression model that is most appropriate for our investigation, we will implement the Chow, Hausman, and Lagrange multiplier (LM) tests. This is the same approach that a financial analyst (FA) would typically implement in a professional environment.

Table 1. Result in Chow test

Effects test	Statistics	D.f.	Prob
Cross-section F	1.673473	(60,179)	0.0051
Cross-section chi-square	108.650428	60	0.0001

Source: Output EViews

According to Chow Test, if the Prob. Cross-section Chi-square value is less than 0.05 it can be inferred that the FEM model is more appropriate.

Table 2. Result in Hausman test

Effects test	Prob
Cross-section Random & (CSCS)	p-value>0.005

Source: Output EViews

According to Hausman Test, if the Prob. Cross-section random value is more than 0.05 it can be inferred that the REM model is more appropriate.

Table 3. Result in Lagrange multiplier test

Test Type	Statistic (Cross-section / Both)	p-value
Breusch-Pagan	5.7038 (Cross) / 5.9185 (Both)	0.0169 / 0.0150
Honda	2.3883 (Cross) / 2.0164 (Both)	0.0085 / 0.0219
King-Wu	2.3883 (Cross) / 0.9734 (Both)	0.0085 / 0.1652
GHM	-- / 5.9185	-- / 0.0205

Source: Output EViews

According to Lagrange multiplier (LM) Test, if the Breusch-Pagan Cross-section One-sided value is less than 0.05 it can be inferred that the REM model is more appropriate. It can be inferred that the research conducted here used a random effects model of regression analysis on a panel of data.

Table 4. Result in regression model

Variable	Coefficient	Std. Error	t-Statistic	Prob. (p-value)
C (Constant)	0.615355	0.112701	5.460058	0.0000
ROA_X1	-0.178376	0.165248	-1.079446	0.2815
CR_X2	-0.017518	0.011031	-1.588139	0.1136
DAR_X3	-0.211313	0.098585	-2.143467	0.0331
SIZE_X4	-0.008683	0.003360	-2.584572	0.0103

Adjusted R-squared: 0.035255

Source: Output EViews

We are administering a simultaneous meaning test, a context-dependent examination. When the likelihood (F-statistic) is less than 0.05, the aggression tax simultaneously affects return on asset, size, current ratio, and debt-to-asset ratio. This is the case when an aggression levy is in effect. This occurs when the effect's magnitude exceeds 0.05, as indicated in the preceding sentence.

With an adjusted R-squared value of 0.035 (3.5%), the coefficient of determination reveals that variables outside the model account for 96.5% of the explanation of variable Y, or the aggressiveness of pay. This value suggests that the explanation is attributable to a portion of the variables. The following bits of information comprise 35 percent of the explanation: X1 (return on asset), X2 (current ratio), X3 (debt-to-asset ratio), and X4 (size).

The probability value of 0.2815 for X1 (Return on Asset) is greater than 0.05, as indicated by the results of the individual partial significance test. The test results confirmed this. In conclusion, we have determined that Hypothesis 1 is incorrect, suggesting that there is only a minor correlation between X1 (Return on Asset) and Y (Tax Aggressiveness). A score of 0.1136 suggests that this is the case when the current ratio, which is occasionally referred to as Probability X2, exceeds 0.05. Our results disprove hypothesis 2, which posits that X2 (current ratio) and Y (tax aggressiveness) are not interrelated. We record the probability x3 ratio, also known as the debt-to-asset ratio, at 0.0331, a value below the 0.05 threshold. It is clear that X3, which represents the ratio of debt to assets, has an impact on Y, which represents the degree of tax aggression, given that Ha3 has been shown to be permissible. The probability value of X4 (Size) is 0.0103, which is less than the threshold of 0.05. This suggests that the probability value is minimal. We have reached the conclusion that we are able to provide evidence in support of Hypothesis 4, which alleges that X4 (size) is responsible for regulating Y (tax aggressiveness).

CONCLUSION

The results of this research indicate that the Debt-to-Debt-Asset ratio (DAR) and Size have a substantial impact on ETR, despite the fact that the Return on Asset (ROA) and Current Ratio (CR) have no impact whatsoever on Tax Aggressiveness (ETR). This is the case despite the fact that ROA and CR do not have a significant impact on ETR. The results of this study suggest that businesses should evaluate their effective tax rates in relation to the financial implications. They also enable for a number of implications to be drawn. In order to conduct a more comprehensive investigation, it would be advantageous to broaden the scope of the sample to encompass a broader range of industries. This would enable the execution of such an

investigation. In addition, the integration of novel factors, such as the size of the organisation, would facilitate the acquisition of valuable insights through the process of insight acquisition.

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APPENDICES

Result from EViews output

1. Model used test: Chow, Hausman, and LM test result

Redundant Fixed Effects Tests

Equation: Untitled

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.673473	(60,179)	0.0051
Cross-section Chi-square	108.650428	60	0.0001

Cross-section fixed effects test equation:

Dependent Variable: Y

Method: Panel Least Squares

Date: 03/11/24 Time: 20:13

Sample: 2020 2023

Periods included: 4

Cross-sections included: 61

Total panel (balanced) observations: 244

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.616382	0.097348	6.331726	0.0000
ROA_X1	-0.113117	0.153174	-0.738490	0.4609
CR_X2	-0.021001	0.010347	-2.029703	0.0435
DAR_X3	-0.212491	0.088607	-2.398136	0.0172
SIZE_X4	-0.008622	0.002807	-3.071793	0.0024
R-squared	0.066587	Mean dependent var		0.221991
Adjusted R-squared	0.050965	S.D. dependent var		0.197932
S.E. of regression	0.192822	Akaike info criterion		-0.433815
Sum squared resid	8.886136	Schwarz criterion		-0.362152
Log likelihood	57.92545	Hannan-Quinn criter.		-0.404953
F-statistic	4.262392	Durbin-Watson stat		2.060781
Prob(F-statistic)	0.002377			

Cross-section random effects test equation:

Dependent Variable: Y

Method: Panel Least Squares

Date: 03/11/24 Time: 20:14

Sample: 2020 2023

Periods included: 4

Cross-sections included: 61

Total panel (balanced) observations: 244

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.537190	1.657460	0.927437	0.3549
ROA_X1	-0.392180	0.259590	-1.510771	0.1326
CR_X2	-0.003304	0.015363	-0.215075	0.8300
DAR_X3	-0.324353	0.207478	-1.563314	0.1197
SIZE_X4	-0.039763	0.058324	-0.681758	0.4963

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.402019	Mean dependent var	0.221991
Adjusted R-squared	0.188216	S.D. dependent var	0.197932
S.E. of regression	0.178335	Akaike info criterion	-0.387301
Sum squared resid	5.692809	Schwarz criterion	0.544322
Log likelihood	112.2507	Hannan-Quinn criter.	-0.012094
F-statistic	1.880321	Durbin-Watson stat	3.141748
Prob(F-statistic)	0.000624		

Lagrange multiplier (LM) test for panel data

Date: 03/11/23 Time: 20:11

Sample: 2020 2023

Total panel observations: 244

Probability in ()

Null (no rand. effect) Alternative	Cross-section One-sided	Period One-sided	Both
Breusch-Pagan	5.703800 (0.0169)	0.214736 (0.6431)	5.918536 (0.0150)
Honda	2.388263 (0.0085)	0.463396 (0.3215)	2.016428 (0.0219)
King-Wu	2.388263 (0.0085)	0.463396 (0.3215)	0.973390 (0.1652)
GHM	-- --	-- --	5.918536 (0.0205)

2. Hypothesis test result

Dependent Variable: ETR_Y

Method: Panel EGLS (Cross-section random effects)

Date: 03/11/24 Time: 20:44

Sample: 2020 2023

Periods included: 4

Cross-sections included: 61

Total panel (balanced) observations: 244

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.615355	0.112701	5.460058	0.0000
ROA_X1	-0.178376	0.165248	-1.079446	0.2815
CR_X2	-0.017518	0.011031	-1.588139	0.1136
DAR_X3	-0.211313	0.098585	-2.143467	0.0331
SIZE_X4	-0.008683	0.003360	-2.584572	0.0103
Effects Specification				
			S.D.	Rho
Cross-section random			0.073563	0.1454
Idiosyncratic random			0.178335	0.8546
Weighted Statistics				
R-squared	0.051135	Mean dependent var		0.171238
Adjusted R-squared	0.035255	S.D. dependent var		0.182037
S.E. of regression	0.178799	Sum squared resid		7.640605
F-statistic	3.219977	Durbin-Watson stat		2.387378
Prob(F-statistic)	0.013422			
Unweighted Statistics				
R-squared	0.065305	Mean dependent var		0.221991
Sum squared resid	8.898341	Durbin-Watson stat		2.049934