

THE IMPACT OF THIN CAPITALIZATION RULES ON TAX AVOIDANCE IN INDONESIA

Reisa Mahardika
Direktorat Jenderal Pajak

Ferry Irawan
Politeknik Keuangan Negara STAN

Alamat Korespondensi: ferry.irawan@pknstan.ac.id

Informasi Artikel

Diterima Pertama
[22 11 2022]

Dinyatakan Diterima
[22 12 2022]

KATA KUNCI:

Tax avoidance, Thin capitalization, DER

KLASIFIKASI JEL:

H24

ABSTRACT

This study aimed to examine the impact of thin capitalization rules implementation on corporate tax avoidance in Indonesia. The study used a purposive sampling method from firms listed on the Indonesia Stock Exchange (IDX) from 2014 to 2017 and obtain 504 firm-year observations. The data was separated into two categories, high DER firms and low DER firms. Data analysis was conducted using regression models with difference in differences approach and Stata version 14. The result showed that thin capitalization rules significantly decreased tax avoidance both of high DER firms and low DER firms. This study extends previous researches on the impact of thin capitalization rules on tax avoidance. Using difference in difference approach with four years observations, two years before implementation and two years after implementation which is still rarely performed in Indonesia. The number of samples that represent the population become limitation of this study. It occurs since there are few companies listed on the IDX, and audited only by audit firm not according to the DGT.

ABSTRAK

Penelitian ini bertujuan untuk mengkaji dampak implementasi thin capitalization rules terhadap penghindaran pajak perusahaan di Indonesia. Penelitian menggunakan metode purposive sampling dari perusahaan yang terdaftar di Bursa Efek Indonesia (BEI) dari tahun 2014 hingga 2017 dan memperoleh 504 firm-year observasi. Data dipisahkan menjadi dua kategori, perusahaan dengan DER tinggi dan perusahaan dengan DER rendah. Analisis data dilakukan dengan menggunakan model regresi dengan pendekatan perbedaan dan Stata versi 14. Hasil penelitian menunjukkan bahwa aturan permodalan yang tipis secara signifikan menurunkan penghindaran pajak baik perusahaan dengan DER tinggi maupun perusahaan dengan DER rendah. Studi ini memperluas penelitian sebelumnya tentang dampak aturan kapitalisasi tipis terhadap penghindaran pajak. Menggunakan pendekatan perbedaan dengan observasi empat tahun, dua tahun sebelum implementasi dan dua tahun setelah implementasi yang masih jarang dilakukan di Indonesia. Jumlah sampel yang mewakili populasi menjadi batasan penelitian ini. Hal itu terjadi karena sedikitnya perusahaan yang tercatat di BEI, dan diaudit hanya oleh KAP bukan menurut DJP.

1. INTRODUCTION

The role of taxes is crucial in financing the State Budget (APBN) each year. Based on data taken from the Central Bureau of the Statistics of the Republic of Indonesia, tax revenues in the State Budget continue to increase from year to year, both in nominal and proportionate terms. From 2007 to 2019, nominal revenue from the taxation sector has increased by 327%. Likewise, the proportion has reached 79% of all revenues in the 2020 State Budget (APBN, 2020). Given the significant role of taxes in an inland revenue, the government continues to produce efforts to optimize revenue from the taxation sector. However, currently, the effort is still confronting several obstacles so that it is not optimal yet (Sunarsih & Handayani, 2018). This is reflected in the tax revenue target which is almost consistently not achieved every year and Indonesia's tax ratio which is still very low compared to other countries as described in Graph 1 (Worldbank, 2020).

The failure to achieve the tax revenue target and the low tax ratio are signals of tax avoidance practices in Indonesia. As stated by the OECD (2019) that one of the causes for Indonesia's low tax ratio is that there is up until now a lot of tax avoidance and a narrow tax base. (Besley & Persson, 2014) also revealed that the chief factor causing the low performance of developing countries in collecting the tax revenues is the practice of tax avoidance. Tax avoidance has inevitably been a concern of various countries in the world because it is related to the loss of potential state revenue. Cobham and Jansky's (2018) research showed that global losses caused by tax avoidance measures can reach USD 500 billion annually as described in Graph 2. Global Financial Integrity recorded that the flow of losses resulting from tax avoidance and illegal activities in Indonesia could reach USD6.6 trillion for the 2006-2016's period.

Figure 1. Tax Ratio in Several ASEAN Countries
 Source: Worldbank, 2020

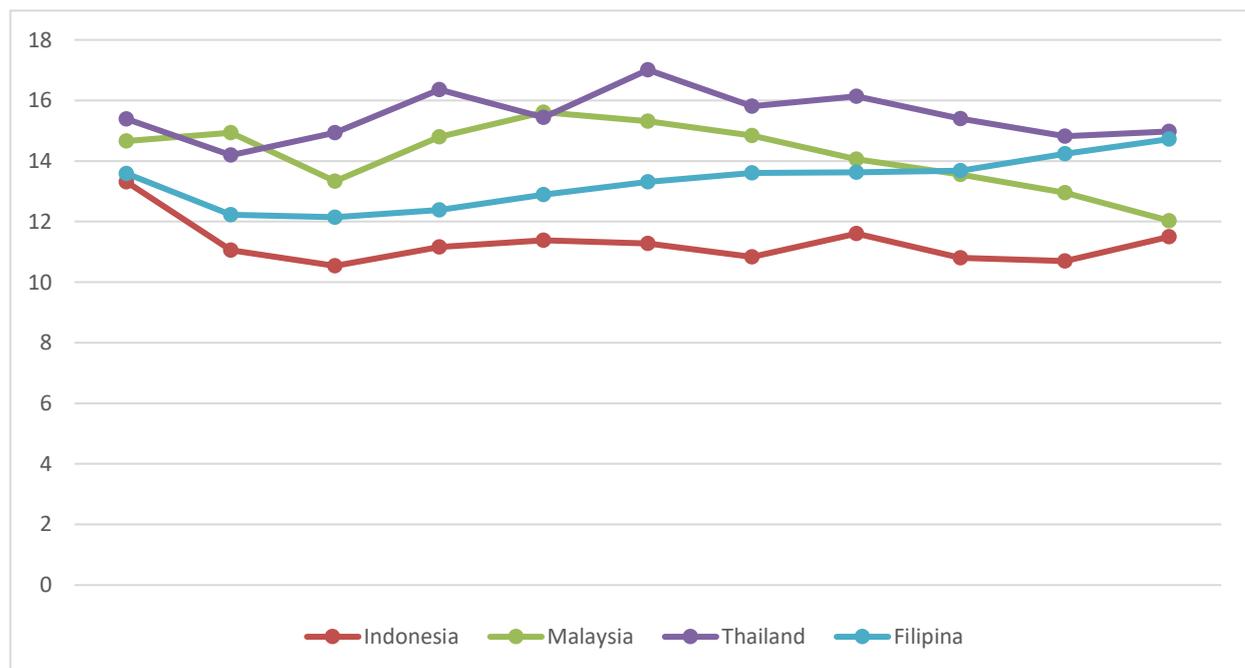


Figure 1. Tax Ratio in Several ASEAN Countries
 Source: (Worldbank, 2020)

Tax avoidance carried out by companies varies widely, from what is legally permissible, to debated lawful actions that often take advantage of legal loopholes in the gray area (Dyrenge, et al., 2008; Mayberry, 2012). One of the loopholes often used is related to interest charges. Primarily, companies can improve their debt structure to take advantage of tax incentives (Modigliani & Miller, 1963; Graham & Tucker, 2006). The provisions of the tax regulations stipulate that interest payments are deductible expenses, which are

expenses that can be deducted on a fiscal basis. This provision was later developed to become a means of tax avoidance because it can reduce the company's payable tax through the thin capitalization mechanism, which is a situation where the company is financed by a higher level of debt than capital. The higher the company's liabilities, the more interest the company can charge and the more tax obligations the company can deduct.

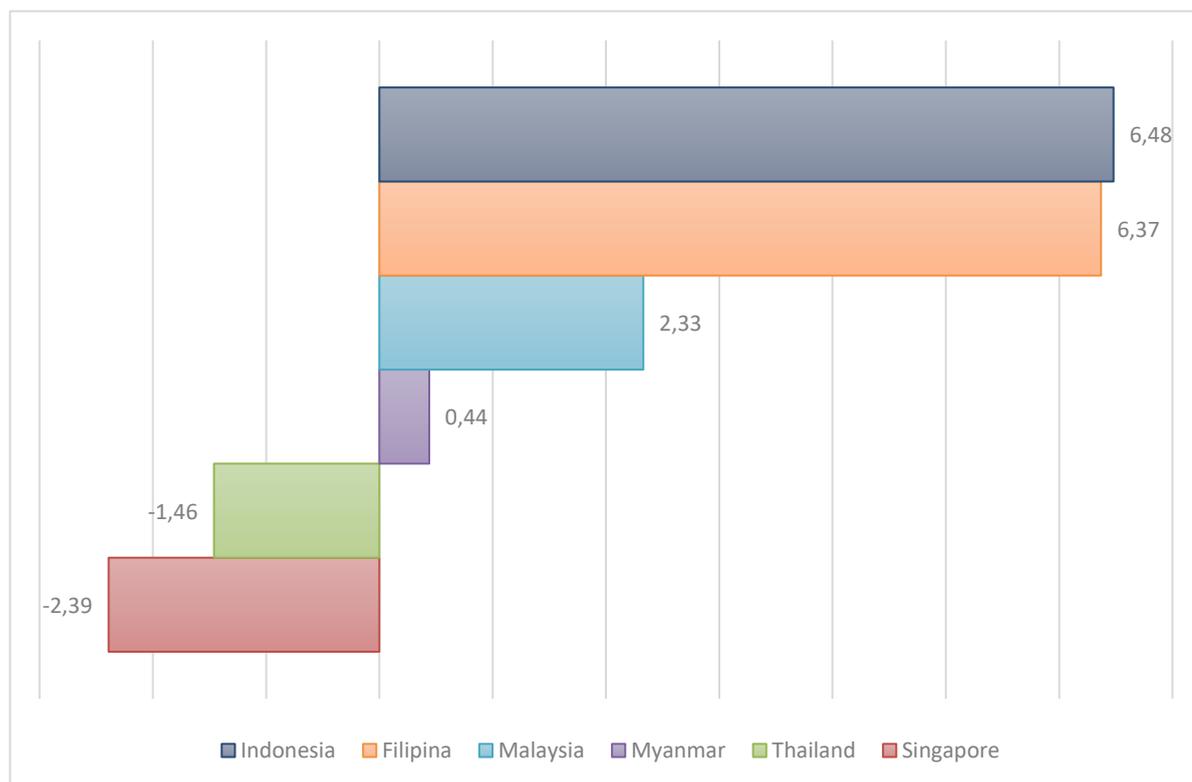


Figure 2. Tax Loss Estimation from Tax Avoidance in ASEAN Countries
 Source: Cobham & Jansky (2018)

Given the potential disadvantages of this thin capitalization, many countries have made arrangements to restrict the use of debt as a means of tax avoidance through a thin capitalization rules (Buettner et al., 2012; Rahayu, 2011). It is expected with the thin capitalization rules space for companies to use tax incentives from debt can be reduced and decrease the level of tax avoidance that is deployed. However, the effectiveness of the application of the thin capitalization rules as an anti-tax avoidance tool is still being debated. The thin capitalization rules has been proven effective as an anti-tax avoidance tool in several countries because it has been shown to reduce internal debt and corporate leverage (Buettner et al., 2012; Clemente-Almendros & Sogorb-Mira, 2016; Goyvaerts & Roggeman, 2020). However, Overesch & Wamser (2010) stated a decrease in the company's internal debt was also followed by an increase in external debt, so the thin capitalization rules was not eminently suitable as an anti-tax avoidance tool. Jovanovic & Klun (2017) also stated that the thin capitalization rules was ineffective because it did not influence the number of tax avoidance in Slovenia.

The results of studies in Indonesia equally vary. Several studies have shown the application of thin capitalization rules has been effective because there were significant differences in the level of tax avoidance (ETR), DER and leverage before and after the enactment of PMK Number 169/PMK.010/2015 as the thin capitalization rules in Indonesia (Ramadhan et al., 2017; Saragih, 2018). However, Zaina's research (2017) stated that the thin capitalization rules did not significantly reduce tax avoidance for companies with

high DER but it was significant in increasing the level of tax avoidance in companies with low DER. Based on the explanation and some differences in these previous researches, it is necessary to carry out further research related to the influence of the thin capitalization rules on tax avoidance practices in Indonesia. The objective of the research is to identify the impact of tax avoidance conducted by companies with high score of DER, before and after thin capitalization rules enacted. The second objective is to identify the impact of tax avoidance conducted by companies with low score of DER, before and after thin capitalization rules enacted. Based on examination, we identify several novelties First, the thin capitalization rules application significantly reduces the tax avoidance of companies that have a high DER of 9.4, and does not significantly increase tax avoidance of companies that have a low DER. However, the probability value of POSTTREAT2 which is smaller than the 5% significance level indicates that the thin capitalization rules significantly reduces tax avoidance for companies that have a low DER of 1.03. In other words, the thin capitalization rules have significant effect in reducing the level of tax avoidance in both companies with high DER and companies with low DER, but with different intensity of decline. Second, the decrease in the level of tax avoidance in high DER companies is nine times greater than the decrease in companies with low DER. The difference in the intensity of this decline indicates a difference in the behavior of the two groups of companies. Companies with high DER have a higher tendency to tax avoidance, as revealed by Taylor & Richardson (2012) that companies that have large debt structures or thinly

capitalized tend to do greater tax avoidance. The effect of existing regulations will be enormous for the company. While companies with low DER are companies that have a tendency to low tax avoidance or good tax compliance, so the effect of these regulations is very small because basically these companies are companies that have good tax compliance or do not use debt for tax purposes. Huizinga (2008) states that in its development many companies use debt for non-tax reasons.

Tax avoidance cannot be separated from the agency framework (Desai & Dharmapala, 2011). Agency theory is a concept that arises when there is a separation between ownership and control. Jensen & Meckling (1976) in Godfrey et al. (2010) stated that when there is a contract that involves one or more people as owners of capital (principal) with other parties (agents), an agency relationship arises. The principal will ask the agent to carry out various activities on behalf of the principal for the benefit of the principal. This agency problems also involves the delegation of some decision-making authority by agent instead of the principal.

This theory also reveals that there is a possibility of conflict between agents and principals because each party has various goals or is frequently referred to as agency problems (Godfrey et al., 2010). Both the principal and the agent will try to maximize their respective welfare. The principal wants a large profit sharing and according to realistic conditions, while the agent wants a large bonus distribution from the principal because it has worked effectively. This triggers a discrepancy between the factual situation and the desired one (Astuti & Aryani, 2017). Desai & Dharmapala (2011) revealed that the amount of incentives or benefits that management can get would motivate management to increase company value and take tax avoidance measures. In other words, tax avoidance can be regarded as an act that takes sides and benefits the shareholders.

The relationship between the agency theory and managers' behavior in doing tax avoidance can be elaborated as follows. Managers are responsible to make sure the financial performance of companies stable. They also need to ensure that shareholders still get the benefit i.e dividends from companies. On the other hand, managers should also obey the government rules including tax rules. Therefore, managers need to consider strategies and policies to accommodate those two different interests. Managers should succeeded in arranging the debt to equity ratio in order to maximize the deductible expense in tax report. Meanwhile, they also should response wisely to the tax rules (in this case thin capitalization rules).

2. LITERATURE REVIEW

There is no universal definition that can explain what is meant by tax avoidance. Broadly speaking, tax avoidance is all transactions that have an impact on corporate tax liabilities (Hanlon & Heitzman, 2010). Companies take advantage of using unclear regulations

or loop holes in regulations to avoid taxes and obtain tax advantages (Dyreng et al., 2008). As for Chen et al. (2010) argues that tax avoidance activities comprises legal tax planning, or any events located in an illegal gray area. Due to its nature in this gray area, tax avoidance cannot always be viewed as inappropriate actions (Dyreng et al., 2008).

One of the tax avoidance measures is to take advantage of regulatory loopholes related to capital structure through thin capitalization. The capital structure is a mixture of debt and company equity (Brigham & Ehrhardt, 2008). According to Van Horne and Wachowicz (2005) several things need to be considered in determining the optimal capital structure, one of which is taxes. Feld et al. (2013) also revealed that the choice of capital structure is positively influenced by taxes. With the existence of corporate taxes, it can increase the value of the company through optimal use of debt. This is supported by the capital structure theories that have been developed so far.

The capital structure theory of Modigliani and Miller II (1963) stated that debt financing is enormously profitable because companies can get additional tax savings due to debt interest funds. Companies can increase their company value by taking advantage of the tax shield to increase their leverage. Companies will tend to enlarge their debt structure to obtain a larger debt tax shield and lower cost of capital.

Modigliani & Miller II's theory implies that firms should optimize more debt as possible. In contrast, the more companies own debt, the more probability of bankruptcy. In its development, another capital structure theory emerged, namely the trade-off theory by Brealey & Myers (1981) who stated that the level of debt will be maximal when the amount of tax saved through the tax shield is proportional to the possible cost of financial distress. This trade-off theory implies that companies will consider the trade-off between the cost of financial difficulties and tax savings and in managing the capital structure.

OECD (2017) states that thin capitalization is identified as one of the methods that can be used as a means of Base Erosion and Profit Shifting (BEPS) because of the nature of interest costs that can be recognized as a cost reduction. Therefore, many countries have issued regulations to limit the amount of interest expense that can be deducted to calculate fiscal profit (OECD, 2017). The OECD's anticipatory step in overcoming BEPS is to issue a BEPS Action Plan, one of which regulates the anti-avoidance rules regarding the practice of thin capitalization, also known as the thin capitalization rules. OECD (2017) also states that regulations related to thin capitalization can be carried out through 2 (two) approaches, namely through determining the maximum value of debt whose interest expense can be deducted (debt limitation) and through determining the maximum value of interest expense that can be deducted, by reference to the ratio of the interest paid on other variables (interest limitation).

In Indonesia, the thin capitalization rules have been implemented by the government since 1984, however, implementation was delayed for decades.

Until finally in 2015 the most previous regulations regarding the thin capitalization rules were released through PMK (Minister of Finance Decree - 169/PMK.010/2015). In this PMK, it is stipulated that the capital structure (debt-to-equity ratio) that can be financed is 4: 1. Besides that, debt costs are no longer a deduction from the company's net income. The Minister of Finance decree is expected to reduce the practice of thin capitalization in companies in Indonesia so that it can close a bigger tax avoidance gap.

Hypothesis Development

Modigliani & Miller (1963) and Graham & Tucker (2006) stated that companies can use interest expense as a tax incentive because it can be a deduction from the company's taxable income. Companies tend to enlarge their debt structure to obtain bigger tax incentives or frequently called thinly capitalized. The higher the level of debt, the more interest on the debt must be paid by the company and the smaller the taxable income which is the basis for taxation. Taylor & Richardson (2012) also stated that companies try to avoid taxes by increasing the level of leverage. Their research results also proved that companies with large debt structures tend to evade taxes.

With the debt to equity ratio (DER) limitation through the thin capitalization rules, the company will have limited room to take advantage of tax benefits from debt. This limitation will affect tax avoidance practices carried out by companies that have a high DER that exceeds a predetermined limit, so that the hypothesis proposed is as follows.

H1: *The thin capitalization rules decreases tax avoidance for companies with high Debt to Equity Ratio.*

The company's reaction to the thin capitalization rules may also be different between high DER companies and companies with low DERs, as examined by Ramadhan et. al. (2017) related to the effects of the thin capitalization rules on company leverage. Departing from agency theory, Desai & Dharmapala (2011) revealed that tax avoidance by company management will be seen as an impartial act and benefits shareholders. Therefore, companies try to continue to take advantage of using unclear regulations or loopholes of regulations to dodge taxes and gain tax advantages (Dyrenge et al., 2008). The 4: 1 DER limitation can be a gap for companies with low DER or far from the maximum limit to increase their DER to a safe limit, so the second hypothesis proposed is as follows:

H2: *The thin capitalization rules increases tax avoidance for companies that have low Debt to Equity Ratio.*

3. RESEARCH METHODS

The type of research used is quantitative method. According to Creswell (2014), quantitative research is a series of methods intended to test a theory by analyzing the relationship between variables and then measuring it with special instruments so that data consisting of various numbers can be analyzed based on statistical procedures. Based on the model and level of explanation, this research is categorized as associative

research. The objective of associative research is to determine the connection or impact between two or more variables (Sugiyono, 2018).

The study is conducted in Indonesia. Moreover, the study is also conducted started from September 2019 until March 2020. The population in this research was companies listed on the Indonesia Stock Exchange in the period of 2014 - 2017. This period was determined because it is relevant to describe the situation before and after the application of the thin capitalization rules in Indonesia with the issuance of Minister of Finance Decree Number 169/PMK.010/2015 concerning Determination of the Comparative Amount of Debt and Company Capital for Income Tax Calculation Purposes which came into effect in 2016. The data utilized were in the form of secondary data obtained from company financial reports obtained from the Indonesia Stock Exchange. The data would then be selected using purposive sampling by eliminating companies that were exempted from PMK-169, companies that did not possess proper data related to research, and companies that possessed negative pretax income.

The dependent variable in this research was corporate tax avoidance. To measure the level of tax avoidance, GAAP ETR proxy was utilized. Lanis & Richardson (2013) stated that GAAP ETR was the most widely used proxy in the previous research literature. Besides, GAAP ETR was considered capable of providing a comprehensive picture of changes in tax expense because it represented current tax and deferred tax. GAAP ETR was calculated by dividing the ratio between income tax expense and profit before tax. The lower the GAAP ETR value owned by the company indicated the higher the level of tax avoidance that was carried out. The independent variable in this research was the application of thin capitalization rules. The impact of the implementation of this rules was measured using a dummy variable. If the company was affected by the thin capitalization rules, then the value was 1 and if the company was uninfluenced, it was worth 0. In determining whether a company was affected or not by the thin capitalization rules, the maximum limit of DER according to PMK-169 was 4: 1. This research used several control variables to measure the level of tax avoidance. The author adopted four control variables from Taylor & Richardson's (2012) research to be used in this research. The control variables included Return on Assets (ROA), company size (SIZE), capital intensity (CINT) and inventory intensity (INVINT). The variable measurement is elaborated in the Table 1.

The population in this research was companies listed on the Indonesia Stock Exchange in the period of 2014 - 2017. This period was determined because it is relevant to describe the situation before and after the application of the thin capitalization rules in Indonesia with the issuance of Minister of Finance Decree Number 169/PMK.010/2015 concerning Determination of the Comparative Amount of Debt and Company Capital for Income Tax Calculation Purposes which came into effect in 2016. The data utilized were in the form of secondary data obtained from company financial reports obtained from the Indonesia Stock Exchange. The data would

then be selected using purposive sampling by eliminating companies that were exempted from PMK-169, companies that did not possess proper data related to research, and companies that possessed negative pretax income.

This research used the Difference in Differences (DID) approach model. The use of the DID approach in this research was to determine the impact of thin capitalization rules on the tax avoidance in Indonesia. The DID approach is a technique often used to evaluate the implementation of a policy or regulation. The DID approach compares the situation in two time periods, namely the period before and the period after treatment. Besides, this approach also divides the population into two groups. One group will receive treatment only in the second period, namely the period after the treatment is applied. Meanwhile, other groups will not receive treatment either in the period before or in the period after the implementation of the treatment (Imbens & Wooldridge, 2009)

In this research, the treatment given was the application of the thin capitalization rules. The research period was divided into two years before the implementation of the regulation and two years after the implementation of the regulation. From the existing samples would then be grouped into treatment groups and control groups. Treatment groups were groups that may be affected by the application of the thin capitalization rules. Meanwhile, the control group was a group that was uninfluenced by the application of the thin capitalization rules. Furthermore, the treatment group was further divided into companies with high DER and low DER. Companies with high DERs have ratios above 4: 1 (TREAT1) and companies with low DERs have ratios below 4: 1 (TREAT 2). This grouping was based on an assumption of tax avoidance theory in which companies with a DER far below the maximum limit will try to take advantage of the loops of the regulation by

increasing their DER to reach the specified limit. On the other hand, it is assumed that companies with a DER that are far above the maximum limit will reduce their DER so that they do not exceed the maximum limit specified. The control group used was companies that are uninfluenced and are very small to be affected by the application of this thin capitalization rules, namely companies that tend not to experience changes in DER after the regulation was enacted. Based on hypotheses developed and the variables stated before, the research model used in this study as follows.

$$GAAPETR = \alpha_0 + \beta_1POSTit + \beta_2TREAT1it + \beta_3TREAT2it + \beta_4POSTTREAT1it + \beta_5POSTTREAT2it + \beta_6ROAit + \beta_7SIZEit + \beta_8CINTit + \beta_9INVINTit + \epsilon it$$

The technique employed in this research was descriptive statistical analysis and inferential statistics. For inferential statistics, it started with selecting the best model, then tests the classical assumptions, and tests the parallel trend assumptions. Furthermore, the f-test was carried out to test the reliability of the research model, and the t-test was carried out to test the effect of the independent variable on the independent variable.

before evaluating the hypothesis, a model was selected to obtain the best model. The selection of a suitable model for this research was carried out utilizing statistical testing in the form of the Chow test, the Breusch-Pagan Lagrange Multiplier test, and the Hausman test. Based on the results of the tests carried out, the best model to adopt in this research was the common-effect model. The common-effect combines time series and cross section data without looking at the differences between time and individuals.

Tabel 1. Measurement of Variable

Variabel	Definition	Indicator	Major References
1. Thin Capitalization Rule (X ₁)	The effect of thin capitalization rule implementation that measured by dummy variable.	1. POST: dummy for year (0 before TCR implementation, 1 after TCR implementation) 2. TREAT1: dummy for company with high DER 3. TREAT2: dummy for company with low DER 4. POSTTREAT1: the effect of TCR on high DER company 5. POSTTREAT2: the effect of TCR on low DER company	(Imbens & Wooldridge, 2009) (Zaina, 2017)
2. Profitability (X ₂)	The company's ability to earns profit	Return on Assets (ROA) = $\frac{Net\ Profit}{Total\ Assets}$	(Taylor & Richardson, 2012)
3. Firm Size (X ₃)	The size of company in various ways, like income, total assets, and total capital	Firm Size (SIZE) = Ln Total Assets	(Taylor & Richardson, 2012)

4. Capital Intensity (X ₄)	The intensity of investment through fixed assets	Capital Intensity (CINT) = $\frac{Fixed\ Assets}{Total\ Assets}$	(Taylor & Richardson, 2012)
5. Inventory Intensity (X ₅)	The intensity of investment through inventory	Inventory Intensity (INVINT) = $\frac{Inventory}{Total\ Assets}$	(Taylor & Richardson, 2012)
6. Tax Avoidance (Y)	The intensity of corporate tax avoidance	GAAPETR = $\frac{Income\ Tax\ Expense}{Pre-Tax\ Accounting\ Income}$	(Hanlon & Heitzman, 2010) (Lanis & Richardson, 2013)

Source: processed by authors

4. RESULTS AND DISCUSSION

The data utilized in this research were the financial data of companies listed on the Indonesia Stock Exchange. Based on the 2017 IDX Annual Statistics, the number of companies listed on the Indonesia Stock Exchange in the 2017 period was 571 companies. From these 571 companies, sample selection was carried out based on predetermined criteria, so that 126 companies were obtained. Based on the results of the tests carried out, the best model to adopt in this research was the common effect model. Moreover, we also conduct classical assumption test. The results are as follows.

Based on Table 2 below, the Prob>z value of the residual is 0.000 or less than the significance value (0.05). Thus, H₀ is rejected, which means the model has

a residual that is not normally distributed. However, the assumption of a normal distribution in linear regression with a relatively large amount of data can refer to the central limit theorem (CLT). Based on the central limit theorem, the residual distribution can be said to be normally distributed if the data used is large. Research conducted on a large number of observations does not need to worry about normality because the problem of normality plays an important role when the number of observation data is small. Gujarati & Porter (2009) state that the sample size or data is said to be large if there are 100 or more observations. So that the regression model using data totaling 100 or more observations can be assumed to be normally distributed. This study uses data of 504 observations, so that the residual distribution can be assumed to be normally distributed.

Tabel 2. Normality Test – Shapiro Francia

Variable	Obs	W'	V'	z	Prob>z
Resid	504	0,19153	293,895	12.474	0,00001

Source: Processed by authors

Next, observations show that the correlation matrix between the two independent variables is less than 0.90, so the model is considered not to have multicollinearity problems. A correlation coefficient value of more than 0.9 is indicated to have a strong

correlation between independent variables (Ghozali, 2016). The results of the multicollinearity test are presented in Table 3 below.

Tabel 3. Multicollinearity test

	GAAPETR	POST	TREAT1	TREAT2	POST TREAT1	POST TREAT2	ROA	SIZE	CINT	INVINT
GAAPETR	1,0000									
POST	-0,0246	1,0000								
TREAT1	0,119	0,0000	1,0000							
TREAT2	-0,0383	0,0000	-0,1469	1,0000						
POSTTREAT1	0,1393	0,1562	0,6984	-0,1026	1,0000					
POSTTREAT2	-0,0171	0,4214	-0,0942	0,6413	-0,0658	1,0000				
ROA	-0,1131	-0,0388	0,034	-0,234	0,029	-0,1611	1,0000			
SIZE	-0,0665	0,0557	-0,1267	0,0267	-0,0801	0,0398	0,181	1,0000		
CINT	0,0689	0,0569	-0,1088	-0,0961	-0,0747	-0,0464	-0,1407	-0,0813	1,0000	
INVINT	-0,0143	-0,0473	0,1297	0,0617	0,0837	0,0122	0,0272	-0,1525	-0,458	1,0000

Source: Processed by authors

In addition, based on the Wooldridge test, a model is said to have autocorrelation problems if the value of Prob > F is less than (0.05). On the other hand, if the value of Prob > F is more than (0.05), the model does not experience autocorrelation problems. The

results of the autocorrelation test in this research model are shown in Table 4. Based on Table 4, the value of Prob > F is 0.4849. This Prob > F value exceeds the significance level of (0.05) so that this research model is free from autocorrelation problems.

Table 4. Autocorrelation test

	F	Prob > F
Wooldridge test	0,491	0,4849

Source: processed by authors

Based on the Breusch-Pagan / Cook-Weisberg test, a model is said to have heteroscedasticity problems if the value of Prob > chi2 is less than (0.05). On the other hand, if the value of Prob > chi2 is more than (0.05), the model does not experience heteroscedasticity problems. The results of heteroscedasticity testing in this research model are shown in Table 5. Based on Table 5, the value of Prob > chi2 is 0.0000. The value of Prob > chi2 exceeds the significance level of (0.05) so that this research model has a heteroscedasticity problem. Gujarati (2009)

states that one way to overcome this heteroscedasticity problem is to improve by weighting the residuals through the Generalized Least Square (GLS) weight model so that the variance will be constant. GLS is an ordinary least square that has met the best linear unbiased estimator (BLUE) criteria because the transformed variable has met the standard least-squares assumptions (Gujarati, 2009). Therefore, the regression analysis in this research model uses the common effect model with GLS (CEM-GLS weight).

Table 5. Heteroscedasticity test

	Chi2(1)	Prob > Chi2
Breusch-Pagan test	940,25	0,0000

Source: Processed by authors

Based on the results of the regression conducted, it was obtained that the R-squared value was 78,11% and the adjusted R-squared was 76,84%. It means that the variation in the GAAPETR value could be explained by the independent variables in this research model by 76,84% while the remaining 23,16% was explained by variables outside of this research model. The f-test

results showed that the Prob > F value was 0,0000 smaller than the α (0,05) value. It means that all independent variables in the research jointly or simultaneously affected the dependent variable. Meanwhile, the results of the t-test in this research are presented in Table 6.

Table 6. T-Test Result

Variabel	Prediksi	Koefisien	Z	P> z <i>two tailed</i>	P> z <i>one tailed</i>
POST	(?)	-7,827286	-9,98	0,000	0,000
POSTTREAT1	(+)	17,25162	9,69	0,000	0,000
POSTTREAT2	(-)	8,863615	5,43	0,000	0,000
ROA	(-)	-13,35888	-6,88	0,000	0,000
SIZE	(-)	1,298127	6,55	0,000	0,000
CINT	(+)	-0,2121754	-1,52	0,131	0,065
INVINT	(-)	-10,88521	-5,49	0,000	0,000

Source: output of STATA 14

Based on Table 6, the POSTTREAT1 variable was the variable to answer H1 that possessed a coefficient value of 17,25162, t-statistic 9,69, and a probability of 0,000. The one-tailed probability value was smaller than the 5% significance level ($\alpha = 0,05$).

This showed that the thin capitalization rules significantly reduced tax avoidance for companies that have a high Debt to Equity Ratio.

As for the second hypothesis (H2), hypothesis testing was seen based on the POSTTREAT2 variable. Based on Table 6, the POSTTREAT2 variable had a

coefficient value of 8,863615, t-statistic of 5,43, and a probability of 0,000. The one-tailed probability value was smaller than the 5% significance level ($\alpha = 0,05$) but the direction of the hypothesis was contrary to the results obtained so that H_0 failed to be rejected, which indicated that the thin capitalization rules does not significantly increase tax avoidance for companies that have low Debt to Equity ratio. However, the probability value that was smaller than the 5% significance level indicated that the thin capitalization rules significantly reduced tax avoidance for companies that have a low Debt to Equity Ratio.

The results showed that the application of thin capitalization rules had a significant impact in reducing tax avoidance level both in high DER-companies and low DER-companies, but with different reduction intensity. The decrease in tax avoidance rates for high DER firms was nine times greater than the decrease in firms with low DERs.

The difference in the intensity of this decline indicated a difference in the behavior of the two groups of companies. Companies with a high DER had a higher tax avoidance tendency, as stated by Taylor & Richardson (2012) that companies that possess a large or thinly capitalized debt structure tend to perform more tax avoidance. The effect of the existing regulations will be enormous for the company. Meanwhile, companies with low DER are companies that tend low tax avoidance or good tax compliance, so the effect of these regulations was very minor because basically, these companies are companies that have good tax compliance or do not use debt for tax purposes. Huizinga (2008) stated that in its development, many companies used debt for non-tax reasons.

The results of this research were supported by Salwah & Herianti (2019) which stated that the application of the thin capitalization rules can reduce the level of tax avoidance. The results also in line with research conducted by Saragih (2018) which stated that PMK-169/PMK.010/2015 as a thin capitalization rules in Indonesia was considered to have been effectively implemented. This was based on the results of the analysis which showed there was a significant difference in the value of the debt to equity ratio and the level of tax avoidance before and after the implementation of PMK-169. This research supported the results of Saragih's (2018) research because by using the DID approach, it could be perceived the genuine changes in the effect of the thin capitalization rules because it had included trend analysis in it.

However, this research was not in line with the results of Zaina's (2017) research which stated that the application of the thin capitalization rules did not significantly reduce tax avoidance for companies with high DER but significantly increased the level of tax avoidance in companies with low DER. The difference in the results of this research was due to the different span of the research years. Zaina's research (2017) used sample data from 2013 to 2016 or three years before and one year after the application of the thin capitalization rules. Apart from the difference in years

and the classification method used, this difference in results could also be due to the deterrence effect arising from the consistency of the Directorate General of Taxes in conducting socialization and more intensive audit activities after the implementation of the regulation. These activities will encourage companies to comply with existing regulations and then reduce the companies' level of tax avoidance.

The decrease in the level of tax avoidance after the application of the thin capitalization rules can be caused by companies trying to comply with the limits on debt imposition issued by the government. This limitation will affect the company's capital structure. Capital structure is often measured by corporate leverage because the concept is quite similar, namely the mix between debt and equity. Leverage can be declared as a means of describing the company's preference for choosing debt or equity in its financing. Leverage also refers to the level of use of debt to increase company activity or increase company assets without having to issue shares. The capital structure theory of Modigliani & Miller II (1963) and Graham & Tucker (2006) revealed that when there are taxes, companies can increase their firm value by utilizing the tax shield to increase their leverage. Companies will tend to enlarge their debt structure to obtain a larger debt tax shield and lower cost of capital. In its development, another capital structure theory emerged, namely the trade-off theory by Brealey & Myers (1981) who stated that the level of debt will be maximized when the amount of tax saved through the tax shield is proportional to the possible cost of financial distress.

Based on those theories, limiting the debt ratio of 4: 1 will affect the company's financing decisions, especially companies with a DER of more than 4:1. Companies tend to reduce the use of their debt to comply with existing regulations, given the reduced tax shield space and trade-off of costs that may arise more in the future if the company performs tax evasion. This decrease in the use of debt will certainly affect the level of corporate leverage which of course also affects the level of corporate tax avoidance, as the results of research by Taylor & Richardson (2012) stated that corporate leverage had a beneficial effect on the level of tax avoidance. The decrease in the level of leverage will affect the decrease in the level of tax avoidance of a company.

Not merely does this affect company with a DER of more than 4: 1, this regulation also causes an identical effect on companies with DER that are far from the 4: 1 threshold, although the intensity of the reduction is completely different. This shows that, on average, companies with low DERs do not take the remaining gaps to reduce their tax burden through the use of debt tax shields. Companies do not try to increase their debt tax shield to the ratio limit allowed by the regulation. This can be due to excellent company compliance, consideration of greater costs than the benefits obtained or it can also be caused by the behavior of the company which does not use debt for the benefit of taxation.

Based on these things, it can be said that the application of the thin capitalization rules as one of the special anti-tax avoidance rules in Indonesia is good enough for reducing the level of tax avoidance carried out by companies. Both companies with high DER and companies with low DER responded constructively to this regulation. The behavior of companies tends to be more careful in their tax planning by not taking advantage of the existing debt tax shield loophole considering the trade-offs between costs and benefits faced by companies if they take advantage of this gap.

However, this research data also showed that the use of debt financing was not a popular thing in the scope of companies listed on the IDX. From the sample of companies studied, only about 10% of companies used debt as their primary source of financing. This indicated the tendency of companies not to exploit too much of the gap in reducing tax burden through the use of debt tax shields. This also confirmed research conducted by Singh (1995) and Ogundajo & Onakoya (2016) which stated that companies in developing countries tend not to use interest tax-shield benefits in their financing.

This was supported by data on the GAAPETR trend which decreased in 2016 and 2017 and the level of tax avoidance in the control group which also experienced a significant increase after the implementation of the regulation. The increasing trend of tax avoidance in this control group showed that whether or not there is a thin capitalization rules, the level of tax avoidance will continue to increase in 2016 and 2017. This is a signal that there are still other loopholes used by companies in tax avoidance besides the thin capitalization scheme. However, there are still many companies that are not listed on the IDX making the results of this research do not represent the phenomenon that occurs, and further research is still needed.

To sum up the discussion, this research indicates that thin capitalization rules has significant roles in controlling the debt policy conducted by companies to avoid tax. Companies response the government rules by adjust the ratio of debt to ratio. Their arguments are logical in this case. If companies do not obey the rules, it will be easier for tax authority to detect in financial statements. Moreover, companies may involve in a situation they want to avoid. For example, tax authority may broaden the scope of audit or tax examination.

5. CONCLUSION

The conclusion produced in this research is the thin capitalization rules significantly reduced tax avoidance, both high DER-companies and low DER-companies, but with peculiar intensities. In this research, there are several limitations. This research used company data listed on the Indonesia Stock Exchange. The calculation of tax avoidance proxies was only obtained from financial reports published by KAP considering the limited access to data in official documents submitted by companies to the Directorate

General of Taxes which were confidential. These results in the measurement of tax avoidance based solely on financial statements prepared based on applicable accounting regulations, not based on tax regulations. Therefore, tax avoidance was not final because it had been unaudited by the DGT. Besides, this research only used financial data in measuring the corporate tax avoidance level, and merely employed the GAAP ETR proxy in measuring tax avoidance.

Based on the conclusions and limitations, there are several suggestions that the author can provide to interested parties. For the Indonesia tax authority, the research findings can be used as an evaluation material for the application of the thin capitalization rules that has been issued. Although it is based on research results that the application of PMK-169/PMK.010/2015 can reduce the level of tax avoidance, DGT can consider conducting studies related to other approaches that can be used like the earnings stripping rules as recommended by the OECD and Rulman's research (2017). All companies indicate to comply these provisions. However, by limiting the debt ratio, the company's leverage ability to raise funds will also decrease whereas the debt is also important for companies to develop their economic activities. The use of the earning stripping rules tends to enlarge this coverage because it imposes direct restrictions on the amount of company debt regardless of the ratio of debt used.

For further research, it can add the range of research years and the number of research samples using company data that is not only listed on the Indonesia Stock Exchange. Besides, something that can also be used is different proxies or even to use more than one proxy in research to improve the accuracy of research results, like the use of Cash ETR, Permanent LTD or discretionary permanent LTD or adding other independent variables that affect tax avoidance, like the industry sector as research by Taylor & Richardson (2012).

REFERENCES

- APBN. (2020). *APBN*. <https://www.kemenkeu.go.id/apbn2020>
- Astuti, T. P., & Aryani, Y. A. (2017). Tren Penghindaran Pajak Perusahaan Manufaktur Di Indonesia Yang Terdaftar Di Bei Tahun 2001-2014. *Jurnal Akuntansi*, 20(3), 375–388. <https://doi.org/10.24912/ja.v20i3.4>
- Besley, T., & Persson, T. (2014). Why do developing countries tax so little? *Journal of Economic Perspectives*, 28(4), 99–120. <https://doi.org/10.1257/jep.28.4.99>
- Brigham, E. F., & Ehrhardt, M. C. (2008). *Financial Management: Theory and Practice* (12th edition). Thomson Learning.
- Brealey, R., & Myers, S. (1981). *Principles of Corporate Finance Washington*. McGraw-Hill.
- Buettner, T., Overesch, M., Schreiber, U., & Wamser, G. (2012). The impact of thin-capitalization rules on the capital structure of multinational firms.

- Journal of Public Economics*, 96(11–12), 930–938. <https://doi.org/10.1016/j.jpubeco.2012.06.008>
- Chen, S., Chen, X., Cheng, Q., & Shevlin, T. (2010). Are family firms more tax aggressive than non-family firms? *Journal of Financial Economics*, 95(1), 41–61. <https://doi.org/10.1016/j.jfineco.2009.02.003>
- Clemente-Almendros, J. A., & Sogorb-Mira, F. (2016). The effect of taxes on the debt policy of spanish listed companies. *SERIEs*, 7(3), 359–391. <https://doi.org/10.1007/s13209-016-0147-4>
- Cobham, A., & Janský, P. (2018). Global distribution of revenue loss from corporate tax avoidance: re-estimation and country results. In *Journal of International Development* (No. 55; Vol. 30, Issue 2). <https://doi.org/10.1002/jid.3348>
- Creswell, J. W. (2014). *Penelitian Kualitatif dan Desain Riset: Memilih Diantara Lima Pendekatan*. Pustaka Pelajar.
- Desai, M. A., & Dharmapala, D. (2011). Taxation and Corporate Governance: An Economic Approach. In *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.983563>
- Dyregang, S. D., Hanlon, M., & Maydew, E. L. (2008). Long-run corporate tax avoidance. *Accounting Review*, 83(1), 61–82. <https://doi.org/10.2308/accr.2008.83.1.61>
- Feld, L. P., Heckemeyer, J. H., & Overesch, M. (2013). Capital structure choice and company taxation: A meta-study. *Journal of Banking and Finance*, 37(8), 2850–2866. <https://doi.org/10.1016/j.jbankfin.2013.03.017>
- Godfrey, J., Hodgson, A., Tarca, A., Hamilton, J., & Holmes, S. (2010). *Accounting theory* (7th ed.). John Wiley & Sons Australia, Ltd.
- Goyaerts, D., & Roggeman, A. (2020). The Impact of Thin Capitalization Rules on Subsidiary Financing: Evidence from Belgium. *Economist (Netherlands)*, 168(1), 23–51. <https://doi.org/10.1007/s10645-019-09353-x>
- Graham, J. R., & Tucker, A. L. (2006). Tax shelters and corporate debt policy. *Journal of Financial Economics*, 81(3), 563–594. <https://doi.org/10.1016/j.jfineco.2005.09.002>
- Gujarati, D. N. (2009). *Basic Econometrics* (4th Editio). McGraw Hill.
- Hanlon, M., & Heitzman, S. (2010). A review of tax research. *Journal of Accounting and Economics*, 50(2–3), 127–178. <https://doi.org/10.1016/j.jacceco.2010.09.002>
- Horne, J., & Wachowicz, J. (2005). *Fundamentals of Financial Management Prinsip-prinsip Manajemen Keuangan*. Salemba Empat.
- Huizinga, H., Laeven, L., & Nicodeme, G. (2008). Capital structure and international debt shifting. In *Journal of Financial Economics* (Vol. 88, Issue 1). <https://doi.org/10.1016/j.jfineco.2007.05.006>
- Imbens, G. W., & Wooldridge, J. M. (2009). Recent developments in the econometrics of program evaluation. *Journal of Economic Literature*, 47(1), 5–86. <https://doi.org/10.1257/jel.47.1.5>
- Jovanovic, T., & Klun, M. (2017). Tax policy assessment in slovenia-case of interest tax shield. *Danube*, 8(1), 1–17. <https://doi.org/10.1515/danb-2017-0001>
- Lanis, R., & Richardson, G. (2013). Corporate social responsibility and tax aggressiveness: A test of legitimacy theory. *Accounting, Auditing and Accountability Journal*, 26(1), 75–100. <https://doi.org/10.1108/09513571311285621>
- Mayberry, M. (2012). *Tax avoidance and investment: Distinguishing the effects of capital rationing and overinvestment* (Doctoral dissertation, Texas A&M University, United States of America).
- Modigliani, F., & Miller, M. H. M. (1963). American Economic Association Corporate Income Taxes and the Cost of Capital : A Correction. *American Economic Review*, 53(3), 433–443. http://books.google.com/books?hl=en&lr=&id=CIni3oHnprEC&oi=fnd&pg=PA73&dq=Corporate+income+taxes+and+the+cost+of+capital:+a+correction.&ots=yshEqnotBe&sig=1DqjIwN5BMLbgGr_hWfrdWhKSA
- OECD. (2017). Limiting Base Erosion Involving Interest Deductions and Other Financial Payments. In *Action 4*.
- OECD. (2019). *Revenue Statistics 2019 : Tax Revenue Trends in the OECD*.
- Ogundajo, G. (2016). Tax Planning and Financial Performance of Nigerian Manufacturing Companies Determinants of Dividend Policy and Firm Value View project. *International Journal of Advanced Academic Research*, 2, 2488–9849. <https://doi:10.5251/ajsms.2013.4.2.71.77>
- Overesch, M., & Wamser, G. (2010). Corporate tax planning and thin-capitalization rules: Evidence from a quasi-experiment. *Applied Economics*, 42(5), 563–573. <https://doi.org/10.1080/00036840701704477>
- Rahayu, N. (2011). Praktik Penghindaran Pajak oleh Foreign Direct Investment Berbentuk Perseroan Terbatas Penanaman Modal Asing. *Jurnal Ilmu Administrasi Negara*, 10(2), 171–180. <https://jiana.ejournal.unri.ac.id/index.php/JIANA/article/download/1067/1060>
- Ramadhan, M. R., Frandyanto, S. A., & Riandoko, R. (2017). Pengaruh Thin Capitalization Rule Pada Leverage Perusahaan Masuk Bursa Di Indonesia. *Riset Akuntansi Dan Keuangan Indonesia*, 2(2), 152–155. <https://doi.org/10.23917/reaksi.v2i2.4912>
- Rulman, A. (2017). Thin Capitalisation In Indonesia: Should Indonesia Follow Oecd Beps Project Recommendation On Thin Capitalisation? In *International Business Tax Economics*. Tilburg University.
- Salwah, S., & Herianti, E. (2019). Pengaruh Aktivitas Thin Capitalization Terhadap Penghindaran Pajak. *JRB-Jurnal Riset Bisnis*, 3(1), 30–36. <https://doi.org/10.35592/jrb.v3i1.978>
- Saragih, A. H. (2018). Analisis Efektivitas Peraturan Kementerian Keuangan Nomor 169/Pmk.010/2015 (Pmk-169) (Studi Empiris Atas

- Perusahaan Publik Yang Terdaftar Di Bursa Efek Indonesia Periode 2015-2016). *Accruals*, 2(2), 11–19. <https://doi.org/10.35310/accruals.v2i2.10>
- Shefrin, H. (2007). How the disposition effect and momentum impact investment professionals. *Journal of Investment Consulting*, 8(2), 68–79.
- Singh, A. (1995). Corporate financial patterns in industrializing economies: a comparative international study. In *Corporate financial patterns in industrializing economies: a comparative international study* (2).
- Stapleton, R. C., Brealey, R., & Myers, S. (1981). Principles of Corporate Finance. In *The Journal of Finance* (Vol. 36, Issue 4). McGraw Hill. <https://doi.org/10.2307/2327568>
- Sugiyono. (2018). *Metode Penelitian Kuantitatif*. Alfabeta.
- Sunarsih, U., & Handayani, P. (2018). Pengaruh Corporate Governance terhadap Penghindaran Pajak pada Perusahaan Manufaktur yang Terdaftar di Bursa Efek Indonesia. *Jurnal Akuntansi*, 12(2), 163–185. <https://doi.org/10.25170/jara.v12i2.87>
- Taylor, G., & Richardson, G. (2012). International Corporate Tax Avoidance Practices: Evidence from Australian Firms. *International Journal of Accounting*, 47(4), 469–496. <https://doi.org/10.1016/j.intacc.2012.10.004>
- Worldbank. (2020). *Government Finance Statistics*. https://data.worldbank.org/indicator/GC.TAX.TO.TL.GD.ZS?name_desc=false
- Zaina. (2017). Thin Capitalization Rules, Firm's Financing Decision, and Corporate Tax Avoidance in Developing Country : Evidence from Indonesia. In *Erasmus School of Economics Journal*. Erasmus University.

