

THE EFFECT OF THE EFFECTIVE CORPORATE TAX RATE TOWARD INVESTMENT DECISION IN INDONESIAN PUBLIC COMPANY

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Abstract

Purpose

This research aimed to determine the effect of the effective tax rate in public company investment in Indonesia.

Design/methodology/approach

The research was conducted using firm data during 2008-2020 and considered the long-term investment concept. Meanwhile, the cross-section of 672 companies and the ordinary least square technique were used to get the estimation.

Findings

The estimation result showed that the effective tax rate has significant negative effect on fixed asset investment. If effective tax rate decrease, it can be because the company gets tax rate reduction incentives, conduct accelerated depreciation, fiscal reconciliation on the financial statement which can increase fixed asset investments. Moreover, the estimation also showed that the age of the company is able to strengthen the relationship between effective tax rate and company investment. The difference in domestic and foreign companies does not affect the elasticity ETR toward investment.

Research limitations/implications

Based on the estimation result mentioned, it is expected to provide guidance in implementing incentive tax, which can encourage public company investment.

Originality/value

There are many studies on the effect of income tax rates, but the results cannot be used specifically in Indonesia since the tax sensitivity may be different based on the development level of the country and the characteristics of the company.

Keywords: effective corporate tax rate, investment, public companies

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1. INTRODUCTION

The trend of Indonesia's tax ratio in several years does not indicate an increase (see table 1.1). Tax ratio is counted from ratio between realization of tax revenue and gross domestic product (GDP). Indonesia has experienced tax ratio reduction every successive year since 2014 and has become the country with the smallest tax ratio among ASEAN countries in 2017. In addition to the declining tax ratio, the contribution of corporate income tax revenues from companies listed on the stock exchange at the beginning of the tax reform showed a decline. Tax revenue obtained from Kantor Pelayanan Pajak Perusahaan Masuk Bursa showed an increase from 2016 to 2018, and it declined from 2019-2020. However, the contribution to national revenue has declined.

Table 1. Tax Ratio of ASEAN Countries

Country	2012 (%)	2013 (%)	2014 (%)	2015 (%)	2016 (%)	2017 (%)
Vietnam	19	19.1	18.2	18	17.9	18.7
Thailand	18.5	19.3	18.4	18.9	18.1	17.6
Philippines	15.8	16.2	16.7	17	17	17.5
Cambodia	11.3	12.9	15.5	15.6	15.8	16.9
Singapore	13.6	13.3	13.4	13.1	13.1	14.1
Malaysia	16.1	15.8	15.3	14.8	14.2	13.6
Laos	15.5	15.8	13.9	13.1	12.4	12.3
Indonesia	12.5	12.5	12.2	12.1	12	11.5
Myanmar	3.9	6.3	7.3	7.8	7.5	7.8

Source : DDTC news (Teapriangga, 2020)

Table 2. Corporate Income Tax Contributions of KPP Perusahaan Masuk Bursa

No.	Year	Total CIT Revenue (Billion Rp)	CIT Revenue KPP PMB (Billion Rp)	Contribution
1	2008	3,052	1,953	64%
2	2009	2,935	2,463	84%
3	2010	4,086	1,607	39%

Source : Research(Pamungkas, 2012)

Table 3. Percentage of Tax Revenue of KPP PMB Against National Tax Revenue

No	Year	Tax Revenue KPP PMB (all taxes) (Billion Rupiah)	National Tax Revenue (all taxes) (Billion Rupiah)	Contribution
1	2016	24,836.03	1,071,363.86	2.32%
2	2017	29,357.43	1,116,460.41	2.63%
3	2018	31,870.51	1,274,334.74	2.50%
4	2019			2.40%

		30,897.79	1,289,031.70	
5	2020	26,075.78	1,024,344.54	2.55%

Source : Directorate General of Taxation (processed data)

On the other hand, the Government lowers the corporate income tax rate through the Income Tax Law no. 36 of 2008. In addition, based on Government Regulation Number 56 of 2015, the government provides additional tax rate reductions for public companies to increase the company's ability in order to obtain additional business capital. For example, the Company will get deduction of corporate income tax rate if it has certain public ownership.

The income tax rate is often distinguished into three: statutory tax rate, effective tax rate, and marginal effective tax rate (Gravelle, 2014). A statutory tax rate is a rate written on the law regulating taxation. The effective tax rate can be calculated by the amount of tax paid divided by profit before tax (Ermansyah, 2018; Gravelle, 2014; Mustika et al., 2018; Sankarganesh & Shanmugam, 2021; Stiglitz & Rosengard, 2015).

Meanwhile, an empirical study (Cevik & Miryugin, 2018) used ETR gained from corporate income tax/CIT expense toward profit before tax. Then, the Marginal effective tax rate is counted from the investment project projecting and estimating the share of pre-tax return paid in tax. Using an effective tax rate can measure a company's tax burden and has the advantage of being compared to other companies (Mustika et al., 2018).

There is a history of the company's income tax rate journey: the progressive rate before the reformation. It stated that taxable income up to 10 million rupiah was subjected to a 15% rate, while taxable income which is more than 10 million up to 50 million rupiah was subjected to a 25% rate, and for taxable income, more than 50 million rupiah was subjected to a 35% rate. Then, after the reformation in 2008, the income tax rate was changed to a single rate of 28% for the tax year of 2009 and 25% for tax year of 2010, etc. Next, the fourth amendment also provided tax incentives for public companies and businesses with certain turnover. Minimum 40% ownership of public company is owned by the public and by certain conditions, it will get 5% reduction from the normal rate. Besides, there is also a rate reduction of 50% for corporate taxpayer with certain turnover. Tax facility offered can be final income tax rate of construction service, land and building rental, and write-off of clearly uncollectible receivables, which can be deducted from gross income. Furthermore, the cases that can affect the effective tax rate are income and expense, which can be accepted and cannot be accepted by company based on tax regulation.

The government of a country uses tax rate reduction and tax incentives to stimulate investment increase and economic activity. It is because, basically, the company responds on tax incentives by changing the production scale and the demand for labor, capital, and other factors of production, choosing financing policy and locating the location of business and other activities (Devereux et al., 2014). If the company uses the incentive, effective tax rate will decrease. If the effective tax rate decreases, the tax burden is lower and will gain higher profit after tax. Tax rate can also reduce cost of capital, which can loosen financial constraints, stimulating new investment and increasing business activity (Harju et al., 2022). Relaxation of financial constraints through tax rate is as tax payment reduced, it will develop additional cash through increasing retained profit after tax which can impact economic activity and capital investment. Investment can be measured from investment of fixed assets, eligible fixed assets (e.g. land and buildings which have become property rights), ineligible fixed assets, and equipment (Fan & Liu, 2020).

Effective tax rate of a company can be different as tax incentive and provision

cannot evenly be accepted by various sectors or due to tax plan (Mustika et al., 2018). Most previous researches in Indonesia, which discussed income tax rate, were conducted using descriptive analysis, determinant analysis, influence to labor, influence to tax evasion, and macro level (Chatib Basri et al., 2019; Dartanto, 2012; Ermansyah, 2018; Nuritomo & Martani, 2014; Pamungkas, 2012; Sujarwati & Qibthiyyah, 2020). However, research regarding investment at the company level has not conducted yet. Currently, several research trends in developed and developing country are discussing about the influence of tax rate and tax incentive toward investment at the company level (Cevik & Miryugin, 2018; Dobbins & Jacob, 2016; Fan & Liu, 2020; Harju et al., 2022; Sankarganesh & Shanmugam, 2021; Zwick & Mahon, 2017).

There is a difference in identifying the relationship between corporate tax rate and investment in the form of positive relationship by (Cevik & Miryugin, 2018), negative relationship by (Djankov et al., 2010; Dobbins & Jacob, 2016; Federici & Parisi, 2015; Sankarganesh & Shanmugam, 2021), and insignificant negative relationship by (Harju et al., 2022). Meanwhile, the positive relationship between tax incentive and investment was by (Fan & Liu, 2020; Mohammad et al., 2021; Zwick & Mahon, 2017). The differences are happened because the basis used is tax rate and tax incentive. Overall, the observed investment is the change in fixed assets. The matter creating long argument in previous researches was probably because the researched object was developing and developed countries, in the different sectors, including companies with different characteristics. In an open economy, in short term, capital supply of corporation sector is inelastic, so the capital bears the burden of corporate taxes. On the other hand, capital mobility gets smoother in the long term because investors can move to other sectors and find a chance based on the other countries' economies (Gruber, 2016). Therefore, investment measurement is better to be conducted in the long term to oversee the mobility caused by increased and decreased tax burden. The research that uses investment variable as dependent variable (Cevik & Miryugin, 2018; Federici & Parisi, 2015; Sankarganesh & Shanmugam, 2021) does not consider investment decision as long term decision yet.

Even though the previous research was conducted in developing countries, the results cannot be used specifically in Indonesia since tax sensitivity may be different based on the level of development of the country and the characteristics of the company. Hence, this study will consider an investment as long-term decision of the company and the company's characteristics. So, it can attain the research objectives which is to find out realization implication of tax policy in term of the effective tax rate on public company investment in Indonesia.

2. LITERATURE REVIEW

Tax concept can affect capital demand. It can be viewed from company production function as follow. It is assumed that company has production function as follow:

$$Y = f(K, L, M)$$

In which Y is company output in certain time, K is capital used to production, L is labor input, and M is other variables affecting production process. The company's goal is to maximize profit using the existing production factor. Therefore, for achieving that goal, the company should minimize the cost. Per unit *cost of capital* is function of company's tax rate ($C(\theta)$). Per unit labor cost is w . Per unit other variables cost is x . The company tries to minimize cost at the output level Y . Hence, systematically, company's production cost TC is as follow:

$$TC = wL + C(\theta)K + xM$$

Systematically, the company will maximize the profit using minimum cost with subject to certain output level (Y):

$$TC = \min wL + C(\theta)K + xM \quad s. t \quad Y \leq f(K, L, M)$$

Cost minimization process will create demand for input factor (Nicholson & Snyder, 2011). Thus, problem optimization is as follow:

$$\mathcal{L} = (wL^* + C(\theta)K^* + xM^*) + \lambda[Y - f(K^*, L^*, M^*)]$$

In order to minimize the cost, so *first order condition*, $FOC = 0$

$$\frac{\partial \mathcal{L}}{\partial L} = w - MPL = 0$$

$$\frac{\partial \mathcal{L}}{\partial K} = C(\theta) - MPK = 0$$

$$\frac{\partial \mathcal{L}}{\partial M} = x - MPM = 0$$

$$\frac{\partial \mathcal{L}}{\partial \lambda} = Y - f(K, L, M) = 0$$

By solution of $FOC=0$ above, demand function of each factor of production will be obtained. It can be called as conditional input demand function, it is as follow:

$$K^* = K(w, C(\theta), x, Y)$$

$$L^* = L(w, C(\theta), x, Y)$$

$$M^* = M(w, C(\theta), x, Y)$$

Conditional Input Demand Function (CIDF) explains that optimal input depends on *input price* ($w, C(\theta), x$) and output target (Y). To see the effect of the cost of capital on the demand for capital is by deriving each input price to the CIDF as follows:

a. The effect on the cost of capital (own price effect)

$$\frac{dK^*}{dC(\theta)} \leq 0$$

b. The effect on labor cost (cross price effect)

$$\frac{dK^*}{dw} > 0 \text{ if } K \text{ and } L \text{ is substitution}$$

$$\frac{dK^*}{dw} < 0 \text{ if } K \text{ and } L \text{ is complement}$$

c. The effect on other variables

$$\frac{dK^*}{dx} > 0 \text{ or } \frac{dK^*}{dx} < 0 ; \text{ depended on the variable}$$

d. The effect on output

$$\frac{dK^*}{dY} > 0$$

Whereas, chain rule method is used to see the effect of income tax rate toward demand for capital/investment:

$$\frac{\partial K^*}{\partial \theta} = \frac{\partial K^*}{\partial C(\theta)} \times \frac{\partial C(\theta)}{\partial \theta}$$

$$\frac{\partial K^*}{\partial \theta} = (-) \times (+)$$

$$\frac{\partial K^*}{\partial \theta} = (-)$$

The above equation shows the negative relationship between income tax rate and capital demand. If the income tax rate is increased, the investment will decrease. Otherwise, if the income tax rate decreases, the investment will increase.

On the other hand, company investment can also be affected by other variables, i.e. company characteristics. Company characteristic is an inherent characteristic of the company which can be measured in several indicators, so it can differentiate with other companies. Some research used company characteristics to see investment behavior. Company characteristics that affect the investment are company age, company size as seen from total assets, growth prospect, leverage ratio, and net cash flow (Cevik & Miryugin, 2018; Dobbins & Jacob, 2016; Federici & Parisi, 2015; Sankarganesh & Shanmugam, 2021). Startup companies are considered to be in the investment stage. However, for startup companies facing funding constraints, the existence of income tax rate will affect internal funds, which can affect their investment behavior. Company size is usually proxied with total asset owned by company. Small companies have a higher chance of investment than companies with a lot of assets. Growth prospects can also affect investment. Growth prospects are measured by company's total sales (Abel & Blanchard, 1986; Cevik & Miryugin, 2018). The bigger the company, the more investment they do

(Cevik & Miryugin, 2018). However, the total sales proxy (Sankarganesh & Shanmugam, 2021) does not affect investment. Based on the conditional input demand function, capital demand is as function of output. Based on company financial statements, the produced output can be seen from the company's total sales or revenue.

3. RESEARCH METHODS

Referring to previous research and theoretical basis, empirical model which will be used is as follow:

$$\begin{aligned} Ln_I_i = & \beta_0 + \beta_1 Ln_ETR_i + \beta_2 Ln_Depreciation_i + \beta_3 Ln_Interest_i + \\ & \beta_4 Ln_CashFlow_i + \beta_5 Ln_Leverage_i + \beta_6 Ln_TA_i + \beta_7 Ln_Sales_i + \beta_8 Age_i + \varepsilon_i \end{aligned} \quad (3.1)$$

Age variable is used as moderating variable and dummy owner to control ownership influence, so the model become as follow:

$$\begin{aligned} Ln_I_i = & \alpha_0 + \alpha_1 Ln_ETR_i + \alpha_2 Ln_Depreciation_i + \alpha_3 Ln_Interest_i + \\ & \alpha_4 Ln_CashFlow_i + \alpha_5 Ln_Leverage_i + \alpha_6 Ln_TA_i + \alpha_7 Ln_Sales_i + \alpha_8 Age_i + \\ & \alpha_9 Ln_ETR_i * Age_i + \varepsilon_i \end{aligned} \quad (3.2)$$

$$\begin{aligned} Ln_I_i = & \gamma_0 + \gamma_1 Ln_ETR_i + \gamma_2 Ln_Depreciation_i + \gamma_3 Ln_Interest_i + \\ & \gamma_4 Ln_CashFlow_i + \gamma_5 Ln_Leverage_i + \gamma_6 Ln_TA_i + \gamma_7 Ln_Sales_i + \gamma_8 Age_i + \\ & \gamma_9 Dummy_{owner} + \varepsilon_i \end{aligned} \quad (3.3)$$

This research will use *cross section* data of all companies registered in Indonesia Stock Exchange during 2008-2020. The selection of the observed period is 2008 to 2020 because that in 2008-2009 there was a global financial crisis whose impact to developing countries such as Indonesia. Then, the years 2010-2019 are post-global crisis and before entering the decline in economic growth again due to the COVID-19 pandemic. Meanwhile, in 2019-2020, the economy declined again. Measurement selection uses *cross-section* regression to consider long-term investment decisions. Cross section data showed individual's sample taken in a period. Individual data, household, and city, at certain times, need to evaluate micro economic and economic policy hypothesis (Wooldridge, 2016). In which, in certain period of time, individual is viewed from his behavior, in this research is investment behavior of companies listed on the stock exchange. If it is observed in years, a company investment can inflict a bias in measurement, because a company will invest with long term consideration.

In which the description of each variable is as follow:

Ln_I_i = the addition of fixed assets in company i is added up during research year.

Ln_ETR_i = effective tax rate measured as ratio of corporate income tax paid by company i

in year t toward profit before tax in company i in year t then calculated on average during research years.

$Ln_Depreciation_i$ = depreciation on company i in year t is measured from the depreciation expense charged by the company for the use of assets then calculated on average during the study year.

$Ln_Interest_i$ = interest expense at company i in year t is measured from interest expense originating from debt and has been capitalized which is charged by the company for the use of assets then calculated on average during the research year.

$Ln_CashFlow_i$ = net cash flow of company i in year t is then calculated on average during the research year.

$Ln_Leverage_i$ = leverage ratio of company i in year t is the ratio of debt to total assets of company i in year t and then calculated the average during the research year.

Ln_Sales_i = total revenue/sales at company i in year t is then calculated on average during the research year.

Ln_TA_i = total assets of company i in year t are then calculated on average over the research year.

Age_i = age of company i

ε_i = error term

Main variable in this research is total investment during year 2008-2020 as dependent variable, effective tax rate average as main independent variable. Control variable used in this research is depreciation cost, interest cost, net cash flow, leverage ratio, company age, total assets, and total revenue/sales. The investment as a company's long-term decision will be estimated using cross section data and the measurement is carried out using the ordinary least square technique (OLS). This research will use secondary data gained from audited financial statements published by company registered in Indonesia Stock Exchange and secondary data of public company coming from Thompson Reuters (Eikon Refinitiv) data stream. The data which will be used include all sectors except listed investment product.

Based on empirical model explained in equation (3.1), (3.2), and (3.3), the developments of research hypothesis are as follow:

Hypothesis 1: Effective tax rate (ETR) has negative relationship to investment.

Capital demand is function of capital cost. Then, the relationship between income tax rate and capital demand is negative. It is in accordance to neoclassical model theory which considers that corporate income tax rate will affect investment decision through user cost concept of capital.

H_0 = There is no effect of effective tax rate to fixed asset investment

H_1 = There is negative and significant effect between effective tax rate to fixed asset investment

Hypothesis 2: Effective tax rate (ETR) increases along with the company's age. The interaction between ETR and the company age will increase the effect of ETR on investment. Company age can affect additional investment because Startup Company tends to do more investment than old company. Therefore, age has a negative relationship to investment, while age interaction and ETR have a positive relationship, which shows that ETR increases along with the company's age. Hence, the interaction result will strengthen the relationship between ETR and investment (Sankarganesh & Shanmugam, 2021).

H_0 = There is no effect between effective tax rate interaction and company age to fixed asset investment

H_1 = There is positive and significant effect between effective tax rate and company age interaction to fixed asset investment.

4. FINDINGS

Sample data in this research consisted of 672 companies registered on Indonesia Stock Exchange. Cleaning data process used in this model is; first, effective tax rate variable in the current tax expense data section is tax burden paid in the year of the financial statement, and it is separated from deferred tax expense, so the value of current tax expense, which is negative, will be excluded from the calculation. The reason is that there is a possibility in the current tax expense account bearing the unpaid deferred tax expense. Second, Negative depreciation cost is excluded from the sample because of the possibility of recording in the one account with other types of expenses in the company. Third, negative interest expense is excluded from the sample due to possibility of interest expense account combined with interest income account. Fourth, there is 1 company excluded from the sample because it has ETR value which is far from average (outlier). It can cause measurement error.

The largest investment during 2008-2020 was PT Telkom Indonesia (Persero) Tbk. If it is viewed from fixed asset investment trend from year to year, it shows positive trend. It can be said that the company is quiet going concern in its business. Based on the component, effective tax rate of PT Telkom is 26.5%, it is higher than statutory tax rate.

Furthermore, company that has minimum value of fixed asset investment is PT Mitra International Resources, Tbk. The company conducts significant asset reduction in the year after the global crisis and in 2020. Thus, significant reduction is happened. The company has a fairly high effective tax rate, meaning the tax burden paid is higher than the income earned by the company. Based on the table 6, the average result of effective tax rate of all data is 0.16 with standard deviation of 0.88. Standard deviation shows various data distributions, and the average of ETR shows that effective tax rate is still lower than statutory tax rate. It can show that rate reduction incentives for public companies can be utilized. Besides, there is also the fiscal reconciliation factor of income and expense rules in the Act of Income Tax. It can also indicate the existence of tax planning. The minimum average value of a fairly high ETR of -2.4514 comes from PT Nusantara Pelabuhan Handal Tbk. It shows that most companies pay high tax while it is in a state of loss. Maximum value of effective tax rate is 3.53. It comes from companies which have final income tax payment. The companies with a high average tax burden have investments far below the average investment in the overall data.

This research has been through classic assumption test. The classical assumption tests are the multicollinearity test and the heteroscedasticity test. Meanwhile, test which aims to find out the presence or absence of multicollinearity, is carried out by discerning the value of Variance Inflating Factor (VIF). If the VIF value is more than 10, it can be indicated

that there is multicollinearity. The test results for the presence or absence of multicollinearity are presented in table 4. Based on the table, the average value of VIF is not more than 10 and the value of each variable also does not exceed 10. It can be concluded that there are no symptoms of multicollinearity within the results. The hypothesis to test the presence or absence of heteroscedasticity symptoms is H₀: Homoscedasticity and H₁: Heteroscedasticity. Reject H₀ if the p-value is less than alpha (1%, 5%, and 10%). Based on table 5, using the Breusch-Pagan / Cook-Weisberg test, it shows that the p-value is greater than alpha, so it accepts H₀ and it means that the model is not affected by heteroscedasticity symptoms. Collected data follows random sampling assumption, because the author cannot control data collection. Companies registered in Indonesia Stock Exchange during 2008-2020 are company which meets the terms and conditions of Indonesia Stock Exchange.

Table 4. Multicollinearity test

Variable	VIF	1/VIF
Ln_sales	3.32	0.30147
ln_cf	2.41	0.41518
ln_depre	2.23	0.4493
ln_int	1.69	0.593
ln_lr	1.09	0.92081
ln_etr	1.01	0.98813
age	1.01	0.9928
Mean VIF	1.82	

Source: output STATA, processed by the author

Table 5. Heteroskedasticity test

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity	
Ho: Constant variance	
Variables: fitted values of ln_y	
chi2(1)	= 0.46
Prob > chi2 = 0.4962	

Source: output STATA, processed by the author

Table 6. Descriptive Statistic Model

Variable	Observation	Mean	Std. Dev.	Min	Max
Investment (billion IDR)	672	4,544	16,169	-12,321	228,438
etr (ratio)	672	0.17	0.35	-2.45	3.53
depreciation cost (billion IDR)	620	43.85	166.3	0.01	2,398
interest expense (billion IDR)	610	126	351.77	0.00	5,117
net cash flow (billion IDR)	672	1,624	9,666	-544.28	158,775

Variable	Observation	Mean	Std. Dev.	Min	Max
leverage ratio	672	1.21	14.47	0.005	373.91
total asset (billion IDR)	672	11,566	55,301	1.85	811,114
company age	672	29.77	15.96	1.00	109
sales (billion IDR)	672	3,308	10,349	0.01	176,429

Source: Datastream Thompson Reuters, processed by the author

Table 7. the Average of Effective Tax Rate (ETR) per Business Sector 2008-2020

No.	Business Sector	ETR Average (%)
1	Basic Materials	16.06%
2	Non-Primary Consumer Goods (<i>Consumer Cyclical</i> s)	19.96%
3	Primary Consumer Goods (<i>Consumer Non-Cyclical</i> s)	18.31%
4	Energy	15.24%
5	Financials	25.16%
6	Healthcare	24.77%
7	Industrials	20.09%
8	Infrastructures	12.07%
9	Properties & Real Estate	13.44%
10	Technology	5.59%
11	Transportation & Logistic	27.82%

Source: output STATA, processed by the author

ETR is counted from corporate income tax paid by the company in year t and it is divided by profit before tax. Sector overall average is based on table 7, public companies in Indonesia still pay corporate income tax under statutory tax rate. The average ETR for panel data is 18.63%, while the statutory tax rate in Indonesia is 25%. It may happen because there is fiscal reconciliation due to difference in provisions in terms of accounting and tax rules, loss compensation, certain tax incentives, and provision for reducing rate for public companies with certain conditions.

Table 8. Estimation Result Model

	(1)	(2)	(3)
Variabel	Main Model	Age*ETR	Dummy Owner
<i>Dependent variable : Ln_investasi</i>			
ln_etr	-0.1119*	-0.2273*	-0.1118*
	(0.0635)	(0.1243)	(0.0635)
ln_depre	0.1952***	0.1953***	0.1953***
	(0.0552)	(0.0552)	(0.0553)
ln_int	0.2914***	0.2920***	0.2914***
	(0.0422)	(0.0422)	(0.0422)
ln_cf	0.1775***	0.1793***	0.1775***
	(0.0589)	(0.0589)	(0.0590)
ln_lr	-0.0631	-0.0667	-0.0632
	(0.1075)	(0.1075)	(0.1076)
ln_ta	0.2120***	0.2122***	0.2118***
	(0.0750)	(0.0750)	(0.0754)
Ln_sales	0.3837***	0.3820***	0.3837***
	(0.0637)	(0.0637)	(0.0638)
age	-0.0071	0.0000	-0.0071
	(0.0046)	(0.0080)	(0.0046)
etr_age		0.0042	
		(0.0039)	
dum_domestik			-0.0057
			(0.1843)
_cons	-8.1843***	-8.3442***	-8.1782***
	(1.5703)	(1.5771)	(1.5838)
N	672	672	672
r2	0.5907	0.5914	0.5907

r2_a	0.5857	0.5858	0.5851
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Standard errors in parentheses * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 8 is shown that column (1) is result of main variable regression with control variable, while column (2) is added by age variable as moderation, and column (3) controls ownership status. Effective tax rate variable significantly has negative effect to investment in column (1), (2), and (3) after they are controlled by company age and dummy of ownership. This separate regression is used to conduct model test and to ensure that by being controlled by age and dummy ownership, the results are not much different and can be used as robustness check. Effective tax rate significantly negatively affects investment (Djankov et al., 2010; Dobbins & Jacob, 2016; Federici & Parisi, 2015; Muthitacharoen, 2021; Sankarganesh & Shanmugam, 2021). This result shows that hypothesis 1 reject H_0 . If effective tax rate decrease, it can be because the company gets tax rate reduction incentives, conduct accelerated depreciation, fiscal reconciliation on the financial statement which can increase fixed asset investments. Effective tax rate reduction can increase actual return in the form of enhancement in net profit, enhancement of the company retained profit, or enhancement of the company's net cash flow.

The model (1), without company age control, shows that if an effective tax rate increases by 1 %, the investment will decrease for 0.11%. Whereas along with the company's age, the influence of ETR to investment is getting bigger, ETR elasticity to investment will increase to 0.22%. When the company is getting older, 1% increase of ETR will decrease the investment for 0.22%. Even though the result is not significant, based on the result, hypothesis 2 reject H_0 . On column (3), the average investment in domestic companies is lower than 0.006% compared to investment in foreign investment company (PMA). An insignificant parameter value proves that the difference in investment in domestic and foreign companies (PMA) does not affect the elasticity ETR toward investment.

The depreciation cost variable significantly influences investment, which is the increase of depreciation cost has influenced to the rise in fixed asset investment. It is in line with the concept that depreciation cost can be reduced from income in tax base calculation, the higher the cost; the smaller the tax will be paid. According to the research conducted by (Fan & Liu, 2020), accelerated depreciation could increase company investment in machines and equipment. In addition, interest expense variable has positive and significant effect to fixed-asset investment. Magnitude positive means that income deduction will be the basis for calculating tax with high interest expense. Therefore, the amount of tax paid becomes less, increasing the company's ability to invest in fixed assets. Another argument affecting cost of capital is interest rate, while interest cost in this research is not yet show how big the average interest rate on debt is. Thus, the concept of cost can be captured, affecting taxable income. Moreover, the trend of high-interest expense is followed by an increase in fixed-asset investment. It can be seen that the company spends more funds through debt rather than equity financing because it gets benefit from deductible interest costs. The net cash flow variable shows every 1% increase in net cash flow will increase fixed asset investment by 0.17%. It shows that the company can depend on internal funding to fund its fixed asset investment by considering cost benefits rather than external funding. The leverage ratio has a negative effect, yet it is not significant to the investment. It can be explained that leverage ratio is a variable which are not always important in determining company investment, because there is other factors which is more important than leverage ratio. The leverage ratio can be used to determine company risk level. If the value is high, it means that the company's debt is higher than its

assets. The leverage ratio can also be an investment determination to choose internal funding or external funding. Total asset variable and total sales positively correlate to fixed-asset investment. Total asset includes company liquidity in fund investment. This is in accordance with the result, which is positive correlation. Company total sales are, as stated in theory that capital demand is a function of company output. If the sales or revenue is high, the output is also increased. In order to fulfill consumers' demand, the company can increase its capital, for example, by adding fixed assets. Formed model can interpret the prediction of fixed asset investment of 59%.

5. CONCLUSION(S)

This research aims to analyze the effect of an effective tax rate on public company investment in Indonesia. The estimation result shows that the average effective tax rate negatively affects the amount of investment. Therefore, the greater the tax rate, the less the amount of investment made by the company. The depreciation cost variable has positive effect, which indicates the need for depreciation allowance to stimulate the investment. Leverage ratio and company age are company characteristic variables which are not considered in public company investment. The policy employed to decrease the statutory tax rate does not necessarily encourage investment in the company. It will be better if the policy is more utilizes tax incentives for company investment activity, e.g. accelerated depreciation or depreciation allowance. Moreover, calculating heterogeneity in company size, financial constraint, and the business sector can be used for the next research as a development of this research.

6. REFERENCES

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