THE EFFECT OF LEVERAGE, CAPITAL INTENSITY, AND INVENTORY INTENSITY ON EFFECTIVE TAX RATE

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**Abstract**

This study aims to determine the effect of leverage, capital intensity and inventory intensity on effective tax rate on miscellaneous industry sector manufacturing companies listed on the Indonesia Stock Exchange in 2014-2018. This shows that taxes contribute to more than 81 percent of the total state revenue. This is also to ensure the sustainability of national development without being dependent on natural resources and foreign assistance (Andreas and Savitri, 2017). But on the one hand, taxes will have a direct impact on reducing the profits of a company (Mahpudin, 2017). The data analysis technique used is multiple linear regression analysis and processed by using software SPSS 20. While data used are secondary data with quantitative data types during the period 2014 until 2018. Population of this study is the miscellaneous industry sector manufacturing companies companies listed on the IDX with sampling method that is purposive sampling, so that the number of observations obtained as many as 60 from 12 companies. The result show that leverage and capital intensity has an effect on effective tax rate. However inventory intensity does not have an effect on effective tax rate.

**Keywords:**

Leverage; Capital Intensity; Inventory Intensity; Effective Tax Rate

**Kata Kunci:**

Pengaruh; Intensitas modal; Intensitas Inventaris; Tarif pajak efektif

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INTRODUCTION

Taxes are the main source of national income of Indonesia. Where’s in 2018 the realization of the receipt of the Anggaran Pendapatan Belanja Negara (APBN) of Rp. 1,903.0 T with Rp 1,548.5 T including tax revenue (www.bps.go.id). This shows that taxes contribute to more than 81 percent of the total state revenue. This is also to ensure the sustainability of national development without being dependent on natural resources and foreign assistance (Andreas & Savitri, 2017). But on the one hand, taxes will have a direct impact on reducing the profits of a company (Mahpudin, 2017). Because the company will be subject to income tax on the profits it receives. Thus, the greater the company’s profits, the income tax that must be paid by the company will be even greater. Thus, there is a difference in interests between the government who wants to optimize tax revenues in contrast to companies that want minimum tax payments.

Effective Tax Rate (ETR) is the application of the effectiveness of a company in managing its tax burden by comparing the tax burden with total net income (Ambarukmi & Diana, 2017). Effective tax rate measures the profit and loss results which generally measure the effectiveness of tax reduction strategies in minimizing high tax rates and know the percentage of companies that pay actual taxes (Setiawan & Al-ahsan, 2016). ETR is also used to measure how well the company is doing its tax planning (Ambarukmi & Diana, 2017). Thus, the success of a company in managing its tax management can be seen from the percentage of effective tax rate of the company.

There are several factors that affect a company’s effective tax rate. Leverage for example can be used as a deduction from income tax due to interest costs arising from debt held by companies (Sinaga & Sukartha, 2018). In addition, companies with high capital intensity have a lower tax burden than companies that have low fixed assets because, the calculation of the amount of tax borne by the company is influenced by the cost of depreciation of fixed assets (Sinaga & Sukartha, 2018). And a high inventory intensity in the company will cause additional burden for the company (Adisamartha & Noviari, 2015). Additional costs arising from the company’s investment in inventory will reduce the amount of tax paid by the company (Darmadi & Zulaikha, 2013).

The greater the debt, the taxable income will be smaller because the tax incentives on debt interest are greater (Susilowati et al, 2018). Debt financing, with its tax-deductible interest expense, reduces the tax collector’s take in favor of the owners’ (Higgins et al, 2016). The cost of debt is reduced by the related tax savings, since interest expense is a deduction in computing taxable income in most cases (Alexander, 2018). Research conducted by Imelia et al (2015) shows that leverage has a significant negative effect on the effective tax rate. In other words, the higher the level of corporate leverage, the effective tax rate of the company will be lower and better. This is in line with research conducted by Susilowati et al (2018) which states that the higher the leverage ratio, the lower the tax rate. Thus, when leverage increases, the effective tax rate will decrease.

H1: Leverage partially affects the effective tax rate.

The fixed assets owned by the company will reduce the tax paid by the company because there is a depreciation or depreciation expense that will be depreciated on this fixed asset every year (Rodriguez & Arias, 2014). This is in line with the results of research conducted by Isnanto, et al (2019) and Andreas & Savitri (2017) found that capital intensity negatively affects the effective tax rate. Thus, when capital intensity increases, the effective tax rate will decrease.

H2: Capital intensity partially affects the effective tax rate.

Additional costs arising from the company’s investment in inventory will reduce the amount of tax paid by the company because, the decrease in tax payments made by the company is caused by a linear relationship between company profits and taxes paid by the company (Darmadi & Zulaikha, 2013). If the company’s profit decreases, it will cause a decrease in taxes paid by the company. Thus, the tax rate will be smaller with the amount of inventory owned by the company. This is in line with the results of research conducted by Isnanto, et al (2019) who found that inventory intensity had a negative effect on effective tax rate. The high intensity of the company’s inventory, the value of ETR will decrease because of the additional costs of inventory that acts as a reduction in profits (Dwiyanti & Jati, 2019). Thus, when the intensity of inventory increases, the effective tax rate will decrease.

H3: Inventory intensity partially affects the effective tax rate.
RESEARCH METHOD

This study takes data on the miscellaneous industry sector manufacturing companies listed on the Indonesia Stock Exchange in the period 2014-2018 with research variables consisting of effective tax rates measured by compared corporate tax burden to profit before tax. Whereas Debt to Equity Ratio (DER) is used to calculate the company's leverage. Capital intensity is calculated by comparing the total fixed assets with the total assets of the company. Inventory intensity can be calculated by comparing the company's total inventory with the total assets owned by the company.

The population in this study are miscellaneous industry sector manufacturing companies listed on the Indonesia Stock Exchange in the 2014-2018 period. Samples selected 12 companies, selected using the purposive sampling method. Following are the criteria in sample selection as follows:

Table 1. Criteria for Company Selection

<table>
<thead>
<tr>
<th>No</th>
<th>Descriptions</th>
<th>Total Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The miscellaneous industry sector manufacturing companies listed on The Indonesia Stock Exchange (IDX)</td>
<td>49</td>
</tr>
<tr>
<td>2</td>
<td>The miscellaneous industry sector manufacturing companies which did not provide financial reports in the 2014-2018 research period</td>
<td>(17)</td>
</tr>
<tr>
<td>3</td>
<td>The miscellaneous industry sector manufacturing companies that use currencies other than rupiah in reporting their financial statements</td>
<td>(10)</td>
</tr>
<tr>
<td>4</td>
<td>The miscellaneous industry sector manufacturing companies that suffered a fiscal loss in the 2014-2018 research period.</td>
<td>(10)</td>
</tr>
</tbody>
</table>

Total Sample 12
Total Review (12 x 5) 60
Issuing the data sample indicated the outliers in the research 0
Total Examine Samples (0) 60 Observations

In this study analysis by multiple linear regression is used to examine the effect of leverage, capital intensity and inventory intensity on the effective tax rate. The equation to test the hypothesis used in this study is as follows:

\[ Y = a + b_1X_1 + b_2X_2 + b_3X_3 + e \]  

(1)

Descriptions:
- \( Y \) = Effective Tax Rate
- \( a \) = Constant
- \( X_1 \) = Leverage
- \( X_2 \) = Capital Intensity
- \( X_3 \) = Inventory Intensity
- \( b_1, b_2, b_3 \) = Regression coefficients of each independent variable
- \( e \) = error

RESULT AND DISCUSSIONS

Table 2 shows the research on 60 samples data from miscellaneous industry sector manufacturing companies listed on the Indonesia Stock Exchange (IDX) 2014 to 2018, while the result from descriptive statistics are:

The effective tax rate with the lowest value is at PT Kabelindo Murni, Tbk in 2017 and the highest value is at PT Nusantara Inti Corpora, Tbk in 2014. And, the effective tax rate has a mean of 0,2953 (29,53%), indicating that the average effective tax rate of manufacturing companies as the research sample does not carry out aggressive tax planning. This is because the average effective tax rate is above the mandatory rate (25%).

Leverage with the lowest value is at PT Indospring, Tbk in 2018 and the highest value is at PT Jembo Cable Company, Tbk in 2014. And, leverage has a mean value of 0,9502 which shows that for every rupiah owned by a manufacturing company used as samples, 0,9502 of which were used as collateral for debt.

Capital intensity with the lowest value was found in PT Jembo Cable Company, Tbk in 2014 and the highest value was found in PT Nusantara Inti Corpora, Tbk in 2014. And, Capital Intensity had a mean value of 0,3315. This shows that the manufacturing companies sampled have an average of around 33,15% of fixed assets of all total assets owned by the company.

Intensity inventory with the lowest value is at PT Astra International, Tbk and the highest value is at PT Sepatu Bata, Tbk in 2017 and PT Ricky Putra Globalindo, Tbk in 2018. And, Inventory Intensity has a mean value of 0,2295. This shows that the manufacturing companies sampled have an average of about 22,95% of the total inventory of all assets owned by the company.
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Table 3.
Result of Normality Test
One-Sample Kolmogorov-Smirnov Test

<table>
<thead>
<tr>
<th>Unstandardized Residual</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
</tr>
<tr>
<td>Normal Parametersa,b</td>
</tr>
<tr>
<td>Mean</td>
</tr>
<tr>
<td>Std. Deviation</td>
</tr>
<tr>
<td>Most Extreme Differences</td>
</tr>
<tr>
<td>Absolute</td>
</tr>
<tr>
<td>Positive</td>
</tr>
<tr>
<td>Negative</td>
</tr>
<tr>
<td>Kolmogorov-Smirnov Z</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
</tr>
</tbody>
</table>

a. Test distribution is Normal.
b. Calculated from data.
Source : data processed by SPSS, 2020.

Based on Kolmogorov-Smirnov in Table 3., the asymp. value, sig. is 0,096 which means asymp. sig > 0,05. So, it can be concluded that the data used in this study has a normal distribution.

Based on Table 4, it is known that the VIF value for variable (X1) Leverage (LEV) of 1,170 is less than 10 (1,170 < 10) and tolerance value is 0,854 > 0,10, then the Leverage variable can be expressed as not having symptoms of multicollinearity. The VIF value for variable (X2) Capital Intensity (CI) of 1,157 is less than 10 (1,157 < 10) and tolerance value is 0,864 > 0,10, then the Capital Intensity Ratio variable can be stated as not having symptoms of multicollinearity. The VIF value for variable (X3) Inventory Intensity (II) of 1,196 is less than 10 (1,196 < 10) and tolerance value is 0,836 > 0,10, then the Inventory Intensity Ratio variable can be stated as not having symptoms of multicollinearity.

From the explanation above, it can be concluded that there is no multicollinearity between independent variables in regression.

Table 4.
Result of Multicollinearity Test
Coefficientsa

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Tolerance</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>0,010</td>
<td>0,063</td>
<td>0,152</td>
<td>0,880</td>
</tr>
<tr>
<td></td>
<td>LEV</td>
<td>0,058</td>
<td>0,020</td>
<td>0,332</td>
<td>2,866</td>
</tr>
<tr>
<td></td>
<td>CI</td>
<td>0,580</td>
<td>0,111</td>
<td>0,604</td>
<td>5,242</td>
</tr>
<tr>
<td></td>
<td>II</td>
<td>0,168</td>
<td>0,163</td>
<td>0,121</td>
<td>1,031</td>
</tr>
</tbody>
</table>

a. Dependent Variable: ETR
Source : data processed by SPSS, 2020.

Based on scatterplot output in figure 2., it is known that the data points are scattered above and below or around 0, the points do not converge directly above and below, the spread of data points does not form a wavy pattern then narrows and widens again. Therefore, it can be concluded that there was no heteroscedasticity in this study.
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Based on the results of Table 5 shows that the autocorrelation test results obtained Durbin-Watson value of 1,849 so that the DW value is between -2 and +2, meaning that there is no autocorrelation of the variables in this study.

Table 6. Hypothesis Test

| Source | data processed by SPSS, 2020. |

Based on the results of Table 6, the multiple linear regression analysis equation are as follows:

$$Y = 0.010 + 0.058\text{LEV} + 0.580\text{CI} + 0.168\text{II}$$

The constant value (α) is 0,010. This result means that if there is no change in the independent variable, namely leverage, capital intensity and inventory intensity, then the dependent variable effective tax rate, remains worth 0,010. Leverage regression coefficient of 0,058 states that every
increase in leverage by 1 will increase the effective tax rate by 0.058. The capital intensity regression coefficient of 0.580 states that each increase in capital intensity of 1 will increase the effective tax rate by 0.580. And the inventory intensity regression coefficient of 0.168 states that every increase in inventory intensity by 1 will increase the effective tax rate by 0.168.

Based on the results of Table 6, leverage has a t value of 2.866 with a positive direction and has a significance value of 0.006. Significance values below 0.05 indicate that leverage has a significant positive effect on effective tax rate. Thus, the first hypothesis (H₁) is accepted.

This means that the amount of corporate debt generated through liability management owned by a company will increase the amount of tax burden to be paid by the company, and then it will increase the company's effective tax rate. The results of this study are consistent with research conducted by Susilowati, et al (2018) on manufacturing companies listed on IDX for the 2014-2016 period, who found that leverage has a significant positive effect on the effective tax rate. Leverage which has a positive direction indicates that the increase in interest costs is followed by an increase in tax costs. Where’s companies use debts obtained for investment purposes so as to generate non-business income for the company. This makes the profits obtained by the company increase and have an impact on increasing the tax burden borne by the company. Therefore, the company's effective tax rate will increase along with the increase in corporate leverage.

This is in a line with the research conducted by Ariani & Hasymi (2018) on the manufacturing companies listed on IDX for the 2012-2016 period, which found that leverage has a significant positive effect on effective tax rate. And the research conducted by Kurniasari & Listiawati (2019) on the pharmacy sub-sector manufacturing company listed on IDX period 2013-2017 which also found that leverage has a significant positive effect on effective tax rate.

The result of this study is contrast to research conducted by Damayanti & Gazali (2019) on construction and building companies listed in IDX period 2014-2017, which found the results that leverage variable has no significant effect on effective tax rate. And also research conducted by Ardyansah & Zulaikha (2014) on manufacturing companies listed in the IDX period 2010-2012 which found that leverage has no significant effect on effective tax rate and Imelia, el. al. (2016) on LQ45 companies listed in IDX period 2010-2012, which found that leverage has a significant negative effect on effective tax rate.

Based on the results of Table 6, capital intensity has a t value of 5.242 with a positive direction and has a significance value of 0.000. Significance value below 0.05 indicates that capital intensity has a significant positive effect on effective tax rate. Thus, the second hypothesis (H₂) is accepted. This means that the total fixed assets owned by the company will increase the amount of tax burden to be paid by the company, and then will increase the company's effective tax rate. The capital intensity variable has a positive direction indicating that companies with high fixed assets bear high tax burden. Some companies have fixed assets that have depleted economic benefits but are not derecognized and for movable assets such as vehicles if taken home by the user, not all depreciation or maintenance costs can be charged but only 50%.

The treatment of depreciation costs on fixed assets can affect the calculation of the amount of tax borne by the company. This is because, depreciation costs that have been recognized by the company are not necessarily recognized tax. The difference can cause the amount of tax paid by the company to increase. Therefore, the company's effective tax rate will increase along with the increase in the company's capital intensity. Thus, the capital intensity has a positive significant effect on effective tax rate.

The results of this study are consistent with the research conducted by Darmadi & Zulaikha (2013) on transportation companies listed in IDX period 2011-2012, which found that capital intensity has a positive significant effect on effective tax rate. And this is line with the results conducted by Putri et al (2016) on transportation companies listed in IDX period 2011-2013, which found that capital intensity variable has a positive significant effect on effective tax rate. Rahmahati & Mildawati (2019) on LQ45 companies listed in IDX period 2015-2017, which also found that capital intensity variable has a positive significant effect on effective tax rate.

The greater the capital intensity, the higher the effective tax rate will be and the smaller the capital intensity will reduce the effective tax rate. Capital intensity that has a positive effect on ETR
can be caused by differences in depreciation methods in the fields of accounting and taxation. When the company has recognized the depreciation expense but in taxation that expense is not included in the company's expense, then the amount of the expense that is not included in the company's expense will be added as a reversal of the reduction in income by that expense. So there will be an increase in taxable income which will increase the amount of the company's tax burden.

And the result of this study is contrast to research conduct by Ardyansah & Zulaikha (2014) on manufacturing company listed on IDX period 2010-2012, which found the results that the capital intensity does not have a significant effect on effective tax rate. The research conducted by Ariani & Hasymi (2018) period 2012-2016 on manufacturing company listed in IDX, which also found the results that the capital intensity did not affect the effective tax rate. And the research of Isnanto, et al (2019) which found that the capital intensity negatively affected the effective tax rate on the food and beverages manufacturing company listed on IDX.

Based on the results of Table 6, inventory intensity has a t value of 1.031 with a positive direction and has a significance value of 0.307. Significance values above 0.05 indicate that inventory intensity does not have a significant positive effect on the effective tax rate. Thus, the third hypothesis (H₃) is rejected. This means that the total inventory owed by a company does not affect the company's ETR. Thus, the total inventory owned by the company does not affect the company's effective tax rate.

This is contra with the theory that stated by (Dwiyanti & Jati, 2019) that the high company inventory intensity, the value of ETR will decrease due to additional costs from inventory that acts as a deduction of profits. PSAK No. 14 explains the amount of waste (material, labor, or production costs), storage costs, administrative and general costs, and sales costs incurred from inventory costs and are recognized as expenses in the period in which they occur.

Additional costs arising from the company's investment in inventory will reduce the amount of tax paid by the company because, a decrease in tax payments made by the company is caused by a linear relationship between company profits and taxes paid by the company (Darmadi & Zulaikha, 2013). However, in this study the inventory intensity does not have an effect on the effective tax rate due to underutilization of the costs incurred by the inventory. So that, inventory intensity does not have an effect on effective tax rate.

The results of this study are consistent with the research conducted by Steven, et al (2018) on consumption goods companies listed in IDX period 2011-2015, which found the inventory intensity does not have an effect on effective tax rate. This is because the company's investment in the company's inventory is small or under 50% so that the effect on inventory depreciation can reduce the amount of tax that must be paid by the company is also small.

And this is line with the results conducted by Imelia (2015) on LQ45 companies listed in IDX period 2010-2012, which found the results that inventory intensity does not have an effect on effective tax rate. And Batmomolin (2018) on chemistry company listed in IDX period 2012-2017, which also found the results that inventory intensity does not have an effect on effective tax rate.

The result of this study is contrast to research conduct by Isnanto, et al (2019) on food and beverages companies listed in IDX period 2013-2017, which found the result that inventory intensity had a negative effect on effective tax rate. And the research conducted by Darmadi & Zulaikha (2013) on manufacturing company listed on IDX period 2011-2012, which found that the intensity of a company's inventory had a significant positive effect on effective tax rate.

Based on the results of Table 7, the significance value of the F test is 0.000 with an F Table of 10.360. Which is the F Table with the freedom degree in significance value 5% is df1=3 and df2=56, so FTable is F(3;56) = 2.77. Then F count and F Table are compared so that the value 10.360 > 2.77 is obtained that F count is higher than F Table.

Significance values below 0.05 indicate that leverage, capital intensity and Inventory Intensity simultaneously have an influence on effective tax rate. This means that the amount of corporate debt generated through liability management, the total amount of fixed assets, and the amount of inventory held by a company affects the amount of tax burden that must be paid by the company, and then will affect the company's effective tax rate.
CONCLUSION AND SUGGESTION

Based on research that has been done regarding the effect of leverage, capital intensity, and inventory intensity on effective tax rate of the miscellaneous industry sector manufacturing companies listed on the Indonesia Stock Exchange in the 2014-2018 period, it can be concluded that leverage has an influence on effective tax rate. Capital intensity has an influence on effective tax rate. Inventory intensity has no effect on effective tax rate in manufacturing companies in miscellaneous industry sector manufacturing companies which are listed on the Indonesia Stock Exchange for the 2014-2018 period.

Further research should use a larger population so that it can describe the actual conditions for all sectors. Furthermore, it is expected to use more independent variables both financial (profitability and liquidity) and non-financial (good corporate governance). So, this can provide a wider scope of research to find out the factors that influence the effective tax rate.

REFERENCES


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