The Best Measurement of Tax Aggressiveness in Predicting Corporate Risk

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ABSTRACT
This study aims to see which measurement of tax aggressiveness is the best in predicting corporate risk. There are various kinds of tax aggressiveness measurements that have been used by many researchers, including Effective Tax Rate (ETR), Cash Effective Tax Rate (CETR), Book Tax Different (BTD), Permanent Book Tax Different (PBTD), Discretionary Permanent Different (DTAX), and Abnormal Book Tax Different (ABTD). This study used a sample of manufacturing companies listed on the Indonesia Stock Exchange. The data processing method used is Confirmatory Factor Analysis to see which measurement is the best in predicting corporate risk. The results showed that tax aggressiveness can predict corporate risk, and DTAX is the best measurement in predicting corporate risk. DTAX is the best measurement because of its ability to capture conforming tax avoidance doing by companies (unlike other measurements that only capture non-conforming tax avoidance).
INTRODUCTION

The ongoing COVID-19 pandemic has caused instability in the economic sector for all countries, including Indonesia. Taxes, which are the main source of Indonesia's state revenue, have fallen sharply. Similar to the crisis in 2008, many countries rely on Value Added Tax (VAT) and Employee Income Tax (PPh) as one of the relatively more stable tax revenues. This is due to corporate income tax which is more sensitive to economic shocks (Brondolo, 2009). In Indonesia itself, tax revenues from corporate taxpayers (WP) during this pandemic has fallen sharply (Kristiaji, 2020). Realization of corporate income tax revenue in the first month of 2020 was corrected by 29.34% on an annual basis, while in January 2019 corporate income tax revenue was able to grow 60.7% (“Penerimaan Pajak”, 2020).

The decline in tax revenues from corporate income tax is expected to be resolved soon. The government itself predicts that companies engaged in the tourism, manufacturing and industrial sectors are the corporate sectors that will recover quickly. Especially the manufacturing sector, although there has been a decline, this sector is still a pillar of Indonesia’s tax revenue and contributes 29.5% of tax revenues until April 2020 (“Industri Manufaktur”, 2020).

In 2021, manufacturing sector companies are one of the sectors targeted by the government in increasing Indonesia’s tax revenues. This is because, the cash flow of manufacturing sector companies is predicted to recover faster than other sectors (“Siap-siap, Ditjen Pajak”, 2020). However, even during the pandemic, taxpayers still do the tax avoidance. Tax Justice Network (2020) states that during the pandemic, Indonesia has suffered losses from tax evasion by corporate taxpayers. Therefore, researchers are interested in examining the tax aggressiveness behavior carried out by manufacturing sector companies and their impact on the risks that will be faced by the company itself.

Many researchers have used various indicators to measure corporate tax aggressiveness. Dyreng et al. (2008), Hanlon & Slemrod (2009), and Hanlon & Heitzman (2010) use the Effective Tax Rate (ETR) and Cash Effective Tax Rate (CETR). The difference between the two is that ETR focuses on the corporate tax expense, while CETR focuses on cash outflows that are used to pay taxes. According to Dyreng et al. (2008), CETR is the best proxy for measuring tax avoidance in the short term. Wilson (2009) uses Book Tax Different (BTD), where the difference between fiscal profit and accounting profit is considered to be able to reflect how much the company does tax avoidance. Then, Rego & Wilson (2012) made it more specific by only using the Permanent Book Tax Different (PBTD). Frank et al. (2009) developed the Discretionary Permanent Different (DTAX), which uses the discretionary value/residual value of the permanent difference. Desai & Dharmapala (2006) and Tang & Firth (2012), use the Abnormal Book Tax Different (ABTD) which can show parts that cannot be explained by BTD.

In Indonesia, Ginting & Martani (2017) use the DTAX and ABTD proxies in measuring tax aggressiveness behavior, but it does not indicate which of the two measurements is the best measurement. This study tries to compare all the measurements of tax aggressiveness that have been mentioned previously, and find out which measurement is the best in predicting corporate risk.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

In the agency theory, it is stated that in a company there are two parties, namely the principal as the owner and the agent as another party who is authorized by the owner to run the company (Jensen dan Meckling, 1976; Eisenhardt, 1989). The owner is referred to the principal who has the authority to set the goals and vision of the company. Meanwhile, the manager is the agent who is authorized to regulate the company’s activities in order to achieve the owner’s goals.

A common problem arises when the owners and managers do not have goal congruence in developing the company. The owners generally want progress in their business which is shown through high profits, while the managers want high incentives from these profits, without thinking about the state of the company in the eyes of investors or the condition of the company in the future. Managers have a responsibility to display large profits to investors, but on the other hand,
managers realize that tax payment is one of the reason why profits are reduced. It is based on the assumption that taxes as costs and as a distribution of profits (Suandy, 2016). The assumption of tax as an expense stated that the tax will affect the profit (profit margin), while the assumption of the tax as a distribution of profit stated that the tax will affect the rate of return on investment. Therefore, managers will carry out tax planning in order to achieve the efficiency of tax payment so that company profits will not be significantly reduced.

Frank et al. (2009) stated that aggressive tax evasion (or also known as tax aggressiveness) reflects aggressive financial reporting as well. This is certainly dangerous for investors, where the financial statements that should be a form of corporate accountability to shareholders, turn out to be non-transparent reports. Kim et al. (2011) strengthen the results of this study by stating that corporate tax avoidance actions will ultimately lead to the destruction of the company’s stock price. Furthermore, Dhaliwal et al. (2017) & Dyreng et al. (2019) states the same thing, that taxable income or fiscal profit can predict the uncertainty of a company’s future performance.

Many researches on tax aggressiveness have been carried out, so that measurements for tax aggressiveness have been developed. Each measurement reflects tax aggressiveness behavior. This study seeks to find out which measurement is the best in predicting corporate risk.

Dyreng et al. (2008), Hanlon & Slemrod (2009), and Hanlon & Heitzman (2010) use the Effective Tax Rate (ETR) and Cash Effective Tax Rate (CETR). ETR focuses on the corporate tax expense. The higher the income tax expense, the company is considered not to be aggressive in tax avoidance, on the contrary if the income tax expense is low, the company tends to be considered of doing tax avoidance. CETR focuses on the cash outflows from the company in order to pay income tax. Income tax expense is considered insufficient to show the tax aggressiveness of the company because the income tax expense in a tax year does not show the amount of the tax payments in that year. Therefore, CETR uses tax payments in a given year to assess how much a company pays for its taxes. Because in principle, tax aggressiveness aims to reduce the amount of corporate tax payments. The greater the company’s tax payments, the more companies are assumed to be less aggressive in doing the tax avoidance.

Book Tax Difference (BTD) is a proxy that is often used to see a company’s tax aggressiveness, as Wilson (2009) did. BTD is the difference that arises between accounting profit and fiscal profit. The magnitude of the difference between accounting profit and fiscal profit shows that the company made many adjustments to its financial statements. The adjustments are made in accordance with tax regulations. The greater the difference between fiscal profit and accounting profit, the company is considered to be more aggressive (Ayers et al., 2010).

Furthermore, Rego & Wilson (2012) made it more specific by only using the Permanent Book Tax Different (PBTD). PBTD or permanent differences are considered to be more indicative of showing a company’s tax aggressiveness behavior. PBTD shows the difference between accounting profit and fiscal profit. A company that has a large PBTD means that the company has a large accounting profit difference with a large fiscal and this will never change over time. Meanwhile, temporary differences are not included in the measurement because although temporary differences also result in differences in accounting profit and fiscal profit, in the end at a certain time it will return to the same amount.

Frank et al. (2009) developed a Discretionary Permanent Different (DTAX) or discretionary item of permanent difference. Frank et al. (2009) also considers that PBTD is quite reliable in reflecting the aggressive behavior of corporate taxes, but actually PBTD also reflects things that are not related to aggressive tax reporting such as local taxes and tax credits. Thus, Frank et al. (2009) only use DTAX, where this value is the residual value from the results of the permanent difference regression equation for the non-discretionary item that causes the permanent difference itself.

The last measurement the researcher used in this study is the measurement used by Desai & Dharmapala (2006) and Tang & Firth (2012), namely Abnormal Book Tax Different (ABTD). Desai & Dharmapala (2006) separate the difference between accounting profit and fiscal profit that arises as a result of tax planning by the company with differences that arise not as a result of tax planning. ABTD is a difference that does arise as a
result of tax planning carried out by the company, so it is considered more reflective of the company’s tax aggressiveness behavior.

RESEARCH METHODS

In this study, the population is all manufacturing companies listed on the Indonesia Stock Exchange during the 2016-2019 period. Samples will be taken from the population of all manufacturing companies listed on the Indonesia Stock Exchange (IDX) based on a non-probability sampling approach using the purposive sampling method.

This study used Confirmatory Factor Analysis (CFA) test tool for measuring tax aggressiveness. Factor analysis is one of the multivariate statistical methods that can be used to summarize or reduce the data (variables) needed for analysis, and can also be used to test construct validity which includes convergent validity and discriminant validity (Cooper and Schindler, 2011). Convergent validity shows that the values obtained from instrument items that measure the same concept will have a high correlation or have a minimum factor loading value of 0.4 (Hair et al., 2010) or 0.3 (Ghozali, 2013). Discriminant validity shows that the values of the items that measure the variables are different, not correlated with each other (Sekaran, 2010). The benefit of factor analysis is the summary of variables based on the level of closeness of the relationship between variables, so that the dominant factors that influence other variables will be obtained.

The independent variables in this study are:

1. Tax aggressiveness, is a company's behavior in reducing the amount of tax owed. The more activities a company undertakes in order to reduce the amount of tax it owes, it can be concluded that the more aggressive the company is in doing the tax avoidance (Guenther et al., 2013).

The measurements used include:

a. Effective Tax Rate (ETR), which is formulated by comparing income tax expense with income before tax (Dyreng et al., 2008). The ETR formula is stated as follows:

\[
ETR = \frac{Income\ Tax\ Expense}{Income\ Before\ Tax}
\]

b. Cash Effective Tax Rate (CETR), which is formulated by comparing cash spent to pay taxes with income before tax (Dyreng et al., 2008; Hanlon and Slemrod, 2009; Hanlon and Heitzman, 2010). According to Dyreng et al. (2008), CETR is the best proxy for measuring short-term tax avoidance. The greater the CETR value is, the less aggressive tax avoidance the company does. The CETR formula is

\[
CETR = \frac{Cash\ Tax\ Paid}{Income\ Before\ Tax}
\]

c. Book Tax Different (BTD), unlike ETR and CETR which are expressed in percentages, BTD is expressed in Rupiah, which is the difference between accounting profit and fiscal profit. The greater the difference between fiscal profit and accounting profit, the company is considered to be more aggressive (Ayers et al., 2010).

d. Permanent Book Tax Different (PBT), which is also expressed in Rupiah, but only permanent differences are used as measurements, while temporary differences/time differences are not included (Rego & Wilson, 2012).

e. Discretionary Permanent Different (DTAX), where this value is the residual value from the results of the regression equation for permanent differences on non-discretionary items that cause permanent differences themselves (Frank et al., 2009). Regression equations made to obtain DTAX include:

\[
PERMDIFF_{it} = \alpha_0 + \alpha_1 INTANG_{it} + \alpha_2 UNCON_{it} + \alpha_3 MI_{it} + \alpha_4 CSTE_{it} + \alpha_5 \Delta NOL_{it} + \alpha_6 LAGPERM_{it} + \varepsilon_{it}
\]

Where:

- PERMDIFF_{it}: Permanent difference divided by total assets in year t-1
- INTANG_{it}: Goodwill and other intangible assets divided by the total assets in year t-1
- UNCON_{it}: Consolidated net profit (loss) divided by total assets at year t-1
- MI_{it}: The minority group’s net profit (loss) divided by the total assets in year t-1
CSTEit: Current year's local tax divided by total assets in year t-1
NOLit: Change in loss compensation divided by total assets in year t-1
LAGPERMit: Permanent difference in year t-1 divided by total assets in year t-1

f. Abnormal Book Tax Different (ABTD), which is used by Desai & Dharmapala (2006) and Tang & Firth (2012), is the difference between accounting profit and fiscal profit arising from tax planning by the company. ABTD is obtained from the residual value resulting from the regression equation as follows:

\[ BTD_{it} = \beta_0 + \beta_1 \Delta INV_{it} + \beta_2 \Delta REV_{it} + \beta_3 NOL_{it} + \beta_4 TLU_{it} + \beta_5 BTD_{it-1} + \epsilon_{it} \]

Where:

- \( BTD_{it} \): Difference between accounting profit and fiscal year profit t
- \( INV_{it} \): Change in gross fixed assets from year t-1 to year t
- \( REV_{it} \): Change in sales from year t-1 to year t
- \( TLU_{it} \): Amount of tax losses utilized in year t
- \( BTD_{it-1} \): Difference between accounting profit and fiscal year profit t-1
- \( \epsilon_{it} \): residual value

2. The dependent variable in this study is the corporate risk. According to Guenther et al. (2017), the corporate risk is a reflection of the future uncertainty faced by the company. This uncertainty concerns all matters that may result in the loss of the company or the company in an unfavorable condition. The risk of the company using the volatility proxy is the stock's rate of return. The volatility of stock returns is obtained from the calculation of the standard deviation of stock returns for 12 months per period.

RESULTS AND DISCUSSION

After conducted the Confirmatory Factor Analysis (CFA) Test, the following results were obtained:

The table above shows that the Kaiser-Meyer-Olkin Measure of Sampling Adequacy of 0.517 exceeds 0.5 with a significant value of 0.000, so it can be concluded that the collection of tax aggressiveness variables consisting of ETR, CETR, BTD, PBTD, DTAX, and ABTD can be processed further.

The Measures of Sampling Adequacy (MSA) figures obtained from the test results for each variable are 0.594 for ETR, 0.510 for CETR, 0.517 for BTD, 0.536 for PBTD, 0.594 for DTAX, and 0.557 for ABTD. All of them give results above 0.5 which means all variables can be predicted and included in the next testing process.
The communality of each variable has exceeded 0.5 so that the next factor will be formed according to the test results below.

<table>
<thead>
<tr>
<th>Component</th>
<th>Initial Eigenvalues</th>
<th>Extraction Sums of Squared Loadings</th>
<th>Rotation Sums of Squared Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1.589</td>
<td>1.589</td>
<td>1.584</td>
</tr>
<tr>
<td>2</td>
<td>1.478</td>
<td>1.478</td>
<td>1.476</td>
</tr>
<tr>
<td>3</td>
<td>1.008</td>
<td>1.008</td>
<td>1.015</td>
</tr>
<tr>
<td>4</td>
<td>.857</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>.559</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>.509</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From the table above, it is obtained that the eigenvalues that exceed 1 are 3 factors, as well as after being rotated it produces 3 factors. Thus, both without rotation and with rotation, 3 factors will be reduced from 6 variables as optimal results. The grouping of factors for each variable will be explained in the table below.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>etr</td>
<td>0.851</td>
</tr>
<tr>
<td>cetr</td>
<td></td>
</tr>
<tr>
<td>btd</td>
<td>0.825</td>
</tr>
<tr>
<td>pbtd</td>
<td>0.691</td>
</tr>
<tr>
<td>dtax</td>
<td></td>
</tr>
<tr>
<td>abtd</td>
<td>0.649</td>
</tr>
<tr>
<td>cr</td>
<td></td>
</tr>
</tbody>
</table>

The table above shows that the first factor which is the indicator is more directed towards Book-Tax Different (BTD), so the first factor namely the BTD factor, the second factor which is the indicator is more directed to the Effective Tax Rate (ETR), so the second factor namely the ETR factor, while the third factor leads to discretionary items so the third factor is called discretionary factor. The final grouping is presented in table 6 below.

From Table 5, it can also be seen that the factor loading value of DTAX is the largest, which is 0.983, so it can be concluded that DTAX is the best measurement in predicting corporate risk.

The results of this study proved that tax aggressiveness can predict corporate risk. Thus, the results of this study support the results of previous studies which state that the more aggressive a company is in reducing its taxes, the more it increases the risk of stock price crashes in the future. This is related to the aggressive financial reporting, increasing the non-transparent financial information provided by the company to investors, as well as regarding the uncertainty of the company’s future performance (Kim et al., 2011; Goh et al., 2016; Dhaliwal et al., 2017; Ginting & Martani, 2017; Balakrishnan et al., 2019; Carolina et al., 2021).

Many indicators to measure tax aggressiveness have been developed. This study uses 6 indicators, Effective Tax Rate (ETR), Cash Effective Tax Rate (CETR), Book Tax Different (BTD), Permanent Book Tax Different (PBTD), Discretionary Permanent Different (DTAX), and Abnormal Book Tax Different (ABTD). Basically, the first 4 measurements mentioned, ETR, CETR, BTD, and PBTD, can only reflect the company’s non-conforming tax avoidance.

Non-conforming tax avoidance is an activity carried out by companies in order to reduce taxable income or fiscal profit in line with reduced accounting income or commercial profit (Satyadini, 2018). The company will try to reduce its taxable profit by lowering its commercial profit. This is what can be captured by the measurements developed by Dyreng et al. (2008), Hanlon & Slemrod (2009), Wilson (2009), Hanlon & Heitzman (2010), Rego & Wilson (2012).

Frank et al. (2009), Desai & Dharmapala (2006) and Tang & Firth (2012) explore measurements that can be used to capture conforming tax avoidance by companies. Conforming tax avoidance is an activity to reduce commercial profits as well as fiscal profits. PBTD is considered quite reliable in reflecting the aggressive behavior of corporate taxes, but actually PBTD also reflects things that are not related to...
aggressive tax reporting such as local taxes and tax credits so that DTAX is considered capable of reflecting conforming tax avoidance.

The results showed that the six indicators can predict corporate risk, but DTAX is the best measurement in predicting corporate risk. This is because DTAX can measure the residual value from the results of the permanent difference regression equation on non-discretionary items that cause the permanent difference itself.

CONCLUSION

The results of this study support the results of the previous studies that tax aggressiveness is able to predict corporate risk. The more aggressive a company performs tax avoidance, the higher the risk of the company in experiencing failure. Various measures of tax aggressiveness are used in this study and DTAX is the best measurement in predicting corporate risk.

However, the results of this study are limited to manufacturing companies so that they cannot reflect the tax aggressiveness of other sector companies in Indonesia, and have not included the impact of the pandemic on the company's financial statements. The implications of the results of this study are that investors can pay more attention to conforming tax avoidance as well as non-conforming tax avoidance. Because in conforming tax avoidance, companies are not only aggressive in their fiscal reporting but also aggressive in their commercial reporting, so this is riskier for the investors, as well as for the Directorate General of Taxes, to be able to review or provide supervision not only on fiscal reports.


