Environmental Uncertainty, Managerial Ability and Tax Aggressiveness

Jessica Dhea Syarendra\textsuperscript{1} and Ari Budi Kristanto\textsuperscript{2}

\textsuperscript{1,2} Accounting Program, Faculty of Economics & Business, Universitas Kristen Satya Wacana

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\textbf{ABSTRACT}

This research aims to examine the effect of environmental uncertainty on tax aggressiveness. Moreover, this research also examines the effect of managerial ability, as a moderating variable, in the relationship between environmental uncertainty and tax aggressiveness. This research is useful to the government in identifying the taxpayer's aggressiveness, particularly in an uncertain business environment. This research uses secondary data obtained from the annual report of 92 manufacturing companies as a sample. The hypothesis testing is done using Moderated Regression Analysis (MRA). The variables used in this study are environmental uncertainty (as the independent variable), tax aggressiveness (dependent variable) and managerial ability (moderating variable). This study is found that there is a positive relationship between environmental uncertainty towards tax aggressiveness. Moreover, this study also found that managerial ability roles can influence the relationship between environmental uncertainty and tax aggressiveness. The existence of managerial ability can weaken the relationship of environmental uncertainty on tax aggressiveness.

\textbf{Keywords}: environmental uncertainty, managerial ability, tax aggressiveness

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Corresponding author:
Ari Budi Kristanto
E-mail:
ari.kristanto@uksw.edu

\textbf{INTRODUCTION}

Yu, Wang, & Brouthers (2016) defined environmental uncertainty as a condition when the manager of a company is unable to predict the possibility of future events. Environmental uncertainty causes the company to be unable to estimate its revenues and expenses. External uncertainty, such as globalization, advanced technology, and increased competition, makes a company face greater environmental uncertainty (Lin, Zhao, & Li, 2014). Therefore, a manager may do several things to anticipate the environmental uncertainty.

To anticipate the environmental uncertainty, a manager may do cost savings or tax planning. Cost savings are intended to maximize profits earned by a company, which will later be distributed to shareholders (Khasanah, Raharjo, & Hartono, 2017). In addition, profit on financial statements also indicates that the company's performance is good (Dichev et al., 2016). According to Frank, Lynch, & Rego (2009), tax planning is an effort done by someone to minimize tax expense. As something that cannot be avoided, tax is the biggest expenditure of a company because tax is a cost that must be paid in vain; in this case, the benefits are not received directly by the company. Tax is also something that can reduce shareholder's wealth, since taxes reduce the amounts of dividends received by shareholders (Huang, Sun, & Zhang, 2017). Tax...
expenses may make managers do tax aggressiveness (Chen et al., 2010).

Tax aggressiveness is an effort to minimize tax that can be done through tax avoidance and tax evasion (Frank et al., 2009). Khan, Srinivasan, & Tan (2017) argued that tax avoidance is an activity to minimize tax expense in a legal way or in accordance with regulations, while tax evasion is carried out illegally or violates tax rules (Alm, Martinez-vazquez, & McClellan, 2014). Tax evasion activities can be in the form of data manipulation on financial statements by making the expenditure higher than it should be. Thereby, the profits received by the company become smaller. Despite having an impact on the small tax paid, data manipulation makes the company’s financial statements inaccurate. However, the violations may be detected by the Directorate General of Taxation (Direktorat Jenderal Pajak, hereinafter referred as DJP), so it causes the company to be punished. Fraud committed by a company will make investors reluctant to invest their money in that company (Hanlon & Siemro, 2009). Finally, tax evasion can cause bankruptcy due to violations committed by a company.

A manager’s ability may become an important factor in anticipating the environmental uncertainty, by choosing relevant strategies. The ability possessed by the manager to do their job properly and correctly can be called managerial ability (Djuitaningsih & Rahman, 2011). With their abilities, managers can understand technology and industry trends, predict product demand, and motivate their employees so they can work more effectively and efficiently (Demerjian, Lev, & McVay, 2012). The ability possessed by a manager to accept all information well, can be used to determine better strategies and decisions (Akbari, Salehi, & Vlashani, 2017). Furthermore, managers can detect environmental uncertainty with their abilities. Therefore, the amount of incomes, expenses, and profits or losses received by a company becomes more certain. Certainty of profits or losses tends to make managers less tax aggressive (Park et al, 2016). Thus, it will reduce the company’s risk.

Research in Indonesia generally examine the influence of company’s internal factors on tax aggressiveness. Tiaras & Wijaya (2015) found that company size has a negative effect on tax aggressiveness. Ardy & Kristanto (2015) found that liquidity has a positive effect on tax aggressiveness. Yudha, Rathi, & Dia (2019) found that audit quality has a positive effect on tax aggressiveness. Not only internal factors, tax aggressiveness is also influenced by external factor such as uncertainty and this has been studied by Huang et al., (2017) in United States. Huang et al., (2017) found that a company tends to be more tax aggressive when it is facing high environmental uncertainty. Furthermore, the research found that managerial ability can overcome problems regarding environmental uncertainty. This will make a company tends to be less tax aggressive. Related the influence of external factors on tax aggressiveness, this study aims to determine the effect of environmental uncertainty on tax aggressiveness in Indonesia.

This research refers to the research model conducted by Huang et al., (2017). The difference between this research and previous research is on the effectiveness of tax penalties on tax compliance in the United State and Indonesia. A study conducted by Perez-Truglia & Troiano (2015) found that higher financial and social penalties cause American to be more obedient to pay tax. Ilyas (2011) found that tax violation in Indonesia is settled by administrative and criminal sanctions. The purpose of tax collection is to increase states revenue, so criminal sanction is considered inappropriate. However, administrative sanction is considered to be less capable to prevent tax violation. For example, Directorate General of Taxation (DJP) did not give a criminal sanction to Google, but only gave an administrative sanction in the form of fines for tax violation committed in 2015 (www.liputan6.com). It is considered as not having a deterrent effect. Based on the Constitution of Republic of Indonesia Number 28 Year 2007, the maximum administrative sanction received by a company is amounted to Rp 1.000.000.000,- (one billion). Meanwhile, based on Title 26 Internal Revenue Code, a company must pay the maximum fine of $500,000 or around Rp 6.500.000.000,. Low sanction for tax violation in Indonesia can indicate a low level of tax law enforcement in Indonesia. The uncertainty faced by a company make them take advantage of this gap to avoid tax. Therefore, this study discusses about researching previous research conducted by Huang et al., (2017) regarding the tendency of a company to do tax aggressiveness which is influenced by the environmental uncertainty.

Based on the previous explanation, the research questions are: First, is environmental uncertainty affects tax aggressiveness in Indonesia? Second, is the existence of managerial ability able to moderate the effect of environmental uncertainty towards tax aggressiveness in Indonesia?

This research is useful for several parties. First, it is useful for two streams of literature: tax aggressiveness in accounting literature and managerial ability in management literature. Second, Directorate General of Taxation (DJP)
can find out the tendency of companies to do tax aggressiveness when dealing with environmental uncertainty.

**MATERIALS AND METHODS**

Kartika (2010) described environmental uncertainty as a company’s inability to predict future situation as a result of the lack of information. In other words, environmental uncertainty is a problem faced by a company, especially in the globalization era. Balakrishnan, Blouin, & Guay (2018) defined tax aggressiveness as the company’s ability to minimize tax expense. In other words, tax aggressiveness is a company’s effort with the aim to make tax become smaller, and that can be done through legal and illegal ways. Liew, Talib, & Jacobs, (2016) stated that the ability possessed by a manager will increase the manager’s knowledge and experience. Managerial ability described as the ability possessed by a manager in a company to make decision to achieve company goals.

Facing the environmental uncertainty makes it difficult for companies to predict what will happen in the future. It is because the factors outside the company are changing, such as technological advances, increasing competition, and regulatory changes, both in economic and political sectors. So that a manager as a person that is responsible in a company responds to the environmental uncertainty by doing tax planning with the aim of minimizing tax. This is because tax is a cost that must be paid whereas the benefits are not received directly by a company. Tax can also reduce the wealth of the shareholders, so companies are reluctant to pay taxes. Therefore, many companies provide incentives to managers to make the amount of the tax paid become smaller. This is what makes managers become aggressive when doing tax planning, especially with the uncertainty that makes managers unable to predict how much profit or loss and the amount of tax to be paid.

A research conducted by Li, Maydew, Willis, & Xu (2016) found a positive relationship between political uncertainty and tax aggressiveness. Duong, Gul, Nguyen, & Nguyen (2017) found a positive relationship between economic policy uncertainty and tax aggressiveness. Huang et al., (2017) in his research found a positive relationship between environmental uncertainty and tax aggressiveness. From the explanation above, the first hypothesis is formulated as follows:

**H1:** Environmental uncertainty has a positive relationship on tax aggressiveness.

Environmental uncertainty that occurs in a company will be responded by the manager by minimizing tax through tax planning. When a manager becomes aggressive in tax planning, there is a lack of transparency about the way the manager uses to minimize taxes. In this condition, the manager can use either legal or illegal methods. When a company uses illegal method, this will cause the company to accept risks, such as paying fines or even bankruptcy. In regard to risks that will be faced by a company, the more capable the manager, the more he will take care in doing safe tax planning. Capable managers may have another alternative response when facing the environmental uncertainty. They shift to another strategy by doing cost saving with the aim of minimizing costs incurred by the company. This is due to the lower risks than doing the aggressive and risky tax planning. So, the ability possessed by a manager can anticipate the uncertainty and weaken the relationship between environmental uncertainty and tax aggressiveness. On the other hand, lack of managerial ability will cause the manager to be aggressive.

A research conducted by Khasanah, Raharjo, & Hartono (2017) stated that manager is a determinant of the success of a company’s decision by doing cost saving to maximize profits. Meanwhile, the results of the study done by Akbarni et al., (2017); Chen et al., (2010); and Francis et al., (2015), found a negative relationship between managerial ability toward tax aggressiveness. This indicates that more capable manager is involved in less tax aggressive activity. Huang et al., (2017) found that managerial ability is able to mitigate the relationship between environmental uncertainty and tax aggressiveness. Thus, the second hypothesis is formulated as follows:

**H2:** The existence of managerial ability weakens the relationship between environmental uncertainty and tax aggressiveness.

![Figure 1. Research Model Framework](image)

The population of this research is manufacturing companies listed on Indonesia Stock Exchange (IDX) from 2016 until 2018 amounted by 168 companies. This study uses secondary data obtained from company financial statements that on IDX. The data needed for this study are sales, total assets, total employees, cogs, inventory, account receivable, tax expense and pre-tax income.
Following the research conducted by Ardy & Kristanto (2015), the measurement of tax aggressiveness was carried out using the Effective Tax Rate (ETR). The lower the ETR value indicates the larger the company is involved in tax aggressiveness.

\[
ETR_{i,t} = \frac{\text{Tax expense}_{i,t}}{\text{Pretax income}_{i,t}}
\]

Following the study of Huang et al., (2017), the environmental uncertainty of this study was measured by sales volatility which is coefficient variation (CV) of sales, scaled by total assets. The higher the value of CV (S_\text{mean}) means the greater the environmental uncertainty.

\[
CV(S_i) = \sqrt{\frac{\sum_{i=1}^{n} (S_i - S_{\text{mean}})^2}{S_{\text{mean}}}}
\]

\[
CV(S_i) = \text{Coefficient Variation of Sales}
\]

\[
S_{\text{mean}} = \text{Average of total sales (scaled by total assets)}
\]

Measuring managerial ability is done using Data Envelopment Analysis (DEA) which stated in decision making unit (Mukhtar & Taqwa, 2016). Decision making unit is an output/input comparison ratio. If output/input ratio is equal to 1 or 100%, then decision making unit said to be efficient.

The hypothesis testing is done using Moderated Regression Analysis (MRA). To test \(H_1\) and \(H_2\), the model equation is formulated as follows:

\[
\text{TAXAGG} = \alpha + \beta_1 \text{EU} + \beta_2 \text{MA} + \beta_3 \text{EU’MA} + \epsilon
\]

\[
\text{TAXAGG} = \text{Tax Aggressiveness}
\]

\[
\text{EU} = \text{Environmental Uncertainty}
\]

\[
\text{MA} = \text{Managerial Ability}
\]

\[
\epsilon = \text{Error}
\]

Before conducting MRA data panel, the first step is conduct panel data regression test (Chow test, Durbin-Wu-Hausman test and Lagrange multiplier test). After doing panel data regression tests, the next step is conduct classic assumption tests (normality test, multicollinearity test, heteroscedasticity test and linearity test). This research does not use autocorrelation test, because autocorrelation test is used to test time series data.

RESULTS AND DISCUSSION

From table 1 it is known that there were 168 manufacturing companies listed on the Indonesian Stock Exchange (IDX) from 2016 until 2018. Because some criteria cannot be met (such as companies do not have complete financial statements and do not pay taxes in a particular year), so this research only uses 92 manufacturing companies as sample. This research uses company data for three years with 276 total observations.

<table>
<thead>
<tr>
<th>No.</th>
<th>Information</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Manufacturing company listed on IDX in 2016-2018</td>
<td>168</td>
</tr>
<tr>
<td>2</td>
<td>Company does not have financial statements for 2016-2018</td>
<td>(12)</td>
</tr>
<tr>
<td>3</td>
<td>Company has a negative pretax income in 2016-2018</td>
<td>(64)</td>
</tr>
<tr>
<td></td>
<td>Total sample</td>
<td>92</td>
</tr>
<tr>
<td></td>
<td>Period included</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Observations</td>
<td>276</td>
</tr>
</tbody>
</table>

Source: idx.co.id

Descriptive statistical analysis of this research consists of mean, median, maximum and minimum as follows:

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
<th>Max</th>
<th>Min</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU</td>
<td>0.0957</td>
<td>0.0741</td>
<td>0.5125</td>
<td>0.0032</td>
</tr>
<tr>
<td>MA</td>
<td>0.3745</td>
<td>0.3000</td>
<td>1.0000</td>
<td>0.0490</td>
</tr>
<tr>
<td>TA</td>
<td>0.2761</td>
<td>0.2552</td>
<td>2.4183</td>
<td>0.0002</td>
</tr>
</tbody>
</table>

Source: Research data, 2018

Table 2 above shows that the maximum value of EU (Environmental Uncertainty) measured using a Coefficient Variation (CV) is 51%, and it is on PT. Sky Energy Indonesia in 2016. While the minimum value of EU is 0.3%, and it is on PT. Astra International in 2018. Then, the average value and median of EU variable is 9% and 7%. Higher CV value means greater environmental uncertainty faced by the company and vice versa. It can be concluded that on average, the companies in this research experienced low environmental uncertainty. This is because the mean is amounted to 9% and is higher than the median which is only 7%.

The maximum value of MA (Managerial Ability) variable that is measured using Data Envelopment Analysis (DEA) is 100% and it is on several companies, they are PT. Barito Pacific in 2018; PT. Kirana Megatara in 2017 and 2018, PT. Chandra Asri Petrochemical in 2016, 2017 and 2018; PT. Unilever Indonesia in 2016 and 2017; PT. Tembaga Mulia Semanan 2016, 2017 and 2018; PT. Astra International in 2016, 2017 and 2018; PT. Gudang Garam in 2016, 2017 and 2018; PT. Charoen Pokphand Indonesia in 2016, 2017 and 2018; and PT. Sampoerna in 2016,
2017 and 2018. While the minimum value of MA is 4% on PT. Star Petrochem in 2017. Then, the average value of MA is 37% and 30% for median. If DEA score is equal to one (or 100%), it means that the company has an efficient decision-making unit and signifies a more capable manager in a company. On the contrary, lower DEA score implies that more inefficient decision-making unit and signifies a less capable manager in a company. It indicates the managerial ability in this research is low. This is because the mean value that is 37% higher than 30% as median.

The maximum value of TA (Tax Aggressiveness) variable that is measured using Effective Tax Rate (ETR) is 241% on PT. Star Petrochem and Paper in 2016. Then, average value and median of TA are 27% and 25%. Higher ETR value indicates greater tax expense than pretax income, which also means a less aggressive company. It signifies that on average, companies have a low level of tax aggressiveness. This is because the mean is 27%, higher than tax rate for business entity that equals to 25%.

Table 3. Panel Regression Model

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU</td>
<td>-0.1474</td>
<td>0.0001</td>
</tr>
<tr>
<td>MA</td>
<td>0.0693</td>
<td>0.0000</td>
</tr>
<tr>
<td>EU*MA</td>
<td>0.0431</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Table 4. Regression Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU</td>
<td>-0.1474</td>
<td>0.0001</td>
</tr>
<tr>
<td>MA</td>
<td>0.0693</td>
<td>0.0000</td>
</tr>
<tr>
<td>EU*MA</td>
<td>0.0431</td>
<td>0.0000</td>
</tr>
</tbody>
</table>

Based on table 6 above, it is known that EU (Environmental Uncertainty) variable has a negative effect towards ETR with a coefficient of -0.1474 and significance value at 5%. This shows that higher the environmental uncertainty, the lower the ETR value, which means the more aggressive a company is. While EU*MA variable has a positive effect with a coefficient of 0.0431 and significance value at 5%. This result implies that if environmental uncertainty and managerial ability are high, the ETR value will also be high, which means less aggressive a company is. Adjusted R-squared of 0.1754, explains that environmental uncertainty and managerial ability variable influence tax aggressiveness variable amounted to 17.54%. While another 82.64% can be influenced by other factors, such as tax rates, tax regulations, etc.

In accordance with the first hypothesis, this research found out that there is a positive relationship between environmental uncertainty and tax aggressiveness. According to table 6, the higher the environmental uncertainty, the more aggressive a company is. Therefore, the first hypothesis of this research is accepted. This is consistent with previous research conducted by Duong et al., (2017); Huang et al., (2017); Li et al., (2016) who found that uncertainty, such as political, economic policy, and environmental uncertainty make the company more aggressive with tax.

The environmental uncertainty faced by the company makes it difficult for managers to predict what will happen in the future. Terms of income and expenses; profits and losses that the company will receive will be difficult to predict. So, as a responsible person in the company,
managers do tax planning as a way to respond to environmental uncertainty. Tax planning is done to make the tax that must be paid by the company to be small, because high taxes causes a reduction in the wealth owned by shareholders. Therefore, many companies provide incentives for managers to make taxes become small. The existence of environmental uncertainty and incentives from the company makes managers become aggressive towards taxes.

The second hypothesis in this research stated that the existence of managerial ability weakens the relationship between environmental uncertainty and tax aggressiveness. Based on table 6, if the environmental uncertainty and managerial ability are high, a company will be less aggressive. Therefore, the second hypothesis of this research is accepted. This result is in accordance with the previous research conducted by Akbari et al., (2017); Chen et al., (2010); and Francis et al., (2015) that found a negative relationship between managerial ability and tax aggressiveness. This finding also means the more capable a manager in the company is, the less aggressive the company will be.

The existence of managerial ability has an effect on the survival of the company. Managers with good ability are able to obtain and use the information provided to produce decisions that are relevant to the company. Capable managers know that companies will receive big consequences if they are aggressive towards taxes, such as paying large fines, losing investors’ trust and even bankruptcy. So, when companies are facing environmental uncertainty, capable managers will respond not to be aggressive towards taxes but by choosing other strategies that are not too risky for the company.

CONCLUSIONS AND SUGGESTION

This study proved that there is a positive effect of environmental uncertainty on tax aggressiveness. Moreover, this research also proved that the role of managerial ability influences the relationship between environmental uncertainty and tax aggressiveness. The existence of managerial ability is able to weaken the relationship of environmental uncertainty on tax aggressiveness.

This result is in accordance with the previous research. First, this result is in accordance with the research conducted by Duong et al., 2017; Huang et al., 2017; and Li et al., 2016 make companies tend to be aggressive towards taxes. Then, this result is also consistent with the previous studies conducted by Akbari et al., (2017); Chen et al., (2010); Francis et al., (2015) who found a negative effect of managerial ability on tax aggressiveness.

This research has some benefits for DJP, as the party that collects taxes. This research can be a consideration for DJP to determine the tendency of companies that are aggressive towards taxes, by looking at the managerial ability of each company. It is necessary to know that, incapable managers tend to be aggressive towards taxes.

There is limitation in this study. This study used sales variable to measure the environmental uncertainty. Whereas, environmental uncertainty could not only have an impact on sales but also on any other aspects, such as total employees, product design, etc. So as, the next research can use other variables to measure the environmental uncertainty, such as employee turnover.

REFERENCES


