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A trade-off between tax reporting and financial reporting aggressiveness based on financial variables

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Abstract

Firms likely exhibit greater financial reporting aggressiveness to increase their earnings and eventually attract investors. However, firms also tend to reduce their taxable income to maximize their cash flow. Consequently, firms arguably manage their corporate income tax aggressively. This research aims to investigate whether firms with low debt levels are more aggressive in their tax reporting than in financial reporting, firms with financial deficits are more aggressive in their financial reporting than in tax reporting, and firms with better access to external/internal capital market are more aggressive in their tax reporting rather than in financial reporting. We use three financial variables, namely debt ratios, financial deficits, and access to internal or external capital markets as proxies for firms' financial condition. This study finds that all financial variables except financial deficits, motivate firms to engage in aggressive reporting decisions. Specifically, firms with higher debt ratios and easier access to external or internal capital markets will likely exhibit more aggressive tax reporting than financial reporting.

Abstrak

Perusahaan kemungkinan besar menunjukkan agresivitas pelaporan keuangan yang lebih besar untuk meningkatkan pendapatan mereka dan pada akhirnya menarik investor. Namun, perusahaan juga cenderung mengurangi pendapatan kena pajak untuk memaksimalkan arus kas mereka. Akibatnya, perusahaan bisa dibilang mengelola pajak penghasilan badan mereka secara agresif. Penelitian ini bertujuan untuk mengetahui apakah perusahaan dengan tingkat hutang yang rendah lebih agresif dalam pelaporan pajaknya daripada dalam pelaporan keuangan, perusahaan dengan defisit keuangan lebih agresif dalam pelaporan keuangannya daripada dalam pelaporan pajak, dan perusahaan dengan akses yang lebih baik ke pasar modal eksternal / internal. lebih agresif dalam pelaporan pajak mereka daripada dalam pelaporan keuangan. Kami menggunakan tiga variabel keuangan, yaitu rasio hutang, defisit keuangan, dan akses ke pasar modal internal atau eksternal sebagai proksi untuk kondisi keuangan perusahaan. Studi ini menemukan bahwa semua variabel keuangan kecuali defisit keuangan, memotivasi perusahaan untuk terlibat dalam keputusan pelaporan yang agresif. Secara khusus, perusahaan dengan rasio hutang yang lebih tinggi dan akses yang lebih mudah ke pasar modal eksternal atau internal kemungkinan akan menunjukkan pelaporan pajak yang lebih agresif daripada pelaporan keuangan.

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1. Introduction

Firms are often confronted with a trade-off between tax reporting and financial reporting aggressiveness. High book-tax conformity also likely causes managers to face a stronger trade-off between engaging in aggressive tax reporting or financial reporting (Rachmawati & Martani, 2017; Shackelford & Shevlin, 2001). Firms seek to report better financial performance by various methods, including managing their earnings upward (Koh & Lee, 2015) or commonly labeled as financial reporting aggressiveness. On the other hand, firms also have an incentive to manage their taxable income downward (Koh & Lee, 2015; Niskanen & Keloharju, 2000) to reduce their cash expenses. As a result, firms will aggressively reduce their taxable income. From the investors' perspective, tax reporting aggressiveness maximizes firms' value (Kim & Zhang, 2011). Other studies find that executive compensation is not associated with tax reporting aggressiveness that leads to declining future performance (Rego & Wilson, 2009). Moreover, managers tend to take advantage of tax loopholes by engaging in tax avoidance to maximize their taxable income deduction.

Usually, managers seek to have both financial reporting and tax aggressiveness. However, firms usually cannot be simultaneously aggressive in both reporting decisions because there will be a trade-off between tax and financial reporting aggressiveness. If managers try to maximize their firms' book income, their firms will be subject to higher tax expenses. However, managers need to minimize their firms' book income if they seek to manage their firms' taxable income downward. Furthermore, lower book income will reduce access to external financing because shareholders will anticipate increasing risk. According to Koh & Lee (2015), firms will manage their book income upward (downward) in financial statements if tax expenses are lower (higher) than financial reporting costs. Firms may manage their earnings upward aggressively by complying or not complying with existing accounting standards. Similarly, firms' aggressive downward taxable income minimization may or may not fall within fraudulent tax evasion (Mary, Luan, & Sonja, 2009). Therefore, it is interesting to investigate when firms tend to be aggressive in financial or tax reporting. Koh & Lee (2015) find that debt ratio affects financial and tax reporting decisions. They also show that long-term debt financing affects financial reporting aggressiveness, while firms with higher financing deficits or better access to external/internal capital markets tend to be aggressive in tax reporting. While they use the Korean data for their analysis, our study relies on the Indonesian data from firms listed on the Indonesian Stock Exchange (IDX). Prior studies show that those financial factors are related to firms' financial and tax reporting decisions.

This research investigates the trade-off between financial and tax reporting decisions by using the financial factors, namely debt ratio, financial deficit, and access to external/internal capital markets. However, this research combines debt ratio and long-term debt into a single variable because the Indonesian tax regulations do not limit the maximum amount of the tax deduction of interest expense. Thus, long term debt ratio and debt ratio arguably have similar effects on aggressive reporting decisions. Also, different capital market conditions and trading activities between developing and developed countries may explain the result differences. Also, Indonesia has different tax laws from South Korea, especially in tax deductions. In South Korea, the government sets high conformity between accounting and tax rules (Koh & Lee, 2015), but there is a lower degree of conformity in Indonesia. To our best knowledge, the trade-off between tax and financial reporting decisions in Indonesia is still relatively understudied. For example, Kamila (2014) analyzes the correlation between tax reporting and financial reporting aggressiveness and finds that tax reporting aggressiveness is positively correlated with financial reporting aggressiveness. Also, another study has linked CSR disclosure and

environmental performance with tax avoidance behavior (Sari & Tjen, 2017). Marsdenia & Martani (2018) analyzes the effect of Environmental CSR Disclosure on tax avoidance behavior of firms listed on the Indonesia Stock Exchange by using two modified measures of tax aggressiveness, namely effective tax rate and book-tax difference.

The Indonesia state budget in 2014-2015 recorded a continuous increase in tax revenues. Specifically, the realization of tax revenues in 2014 was IDR 1,146.9 trillion, and in 2018 it was IDR 1,146.9 trillion. However, the state's objective to maximize tax revenues is contrary to the objectives of firms as taxpayers. Firms seek to minimize taxes to generate higher profits to ensure their continuity and offer better returns to their owners. This empirical phenomenon is interesting to investigate further to examine firms' tax and financial reporting behavior.

This study uses the manufacturing sector as the research context to avoid the industry effect, i.e., the effect of different industry characteristics on the results. Besides, manufacturing firms dominate firms listed at the Indonesian Stock Exchange (IDX). Consequently, our results in the manufacturing sector are potentially generalizable to firms in other industries. A high proportion of manufacturing firms in IDX enables the multiplier effect in other sectors. Several previous studies also have used similar observations (Firmansyah & Bayuaji, 2019; Multazam & Rahamwaty, 2018; Prawira, 2017), but not focused on both tax reporting and financial reporting aggressiveness. In Indonesia, firms have to prepare two different sets of statements to the tax authority and shareholders as different stakeholders. However, these two statements often contradict each other that leads to a trade-off. If firms aim to attract potential investors by increasing profitability, they will have to pay higher taxes. Conversely, firms that seek to pay lower taxes will likely report lower earnings and offer negative signals to potential shareholders.

The research aims to answer the following questions. First, are firms with a lower debt ratio more aggressive in tax reporting than financial reporting, and are firms with a higher debt ratio more aggressive in tax reporting than financial reporting? Second, are firms with higher financial deficit more aggressive in financial reporting than tax reporting? Third, are firms with easier access to external/internal capital markets more aggressive in tax reporting than financial reporting? Moreover, this research informs auditors and financial report users of the importance of the disclosure and analysis of factors that affect firms' aggressive financial reporting or tax reporting behavior. This research also contributes theoretically to the behavioral accounting literature, especially firms' behavior in financial reporting and tax aggressiveness.

The paper starts by discussing the research background and novelty of this research. The next section presents the causal relationship between variables and hypothesis development. Then, the subsequent section explains the research methods, followed by the results and discussion. The last section concludes and presents limitations and future research avenue.

2. Hypothesis Development

Tax aggressiveness refers to actions to reduce taxable income (Frank, Lynch, & Rego, 2009). Tax is a mandatory financial contribution imposed to (institutional or individual) taxpayers by a government to fund governmental or public expenditures. Tax is the primary income source for governments. Law of the Republic of Indonesia No. 17 of 2003 concerning State Finance article 11 stipulates that state revenues consist of taxes, non-tax revenues, and grants. In this regard, firms are sometimes not tax-compliant because they consider the costs and benefits of paying taxes. Moreover, firms arguably seek to minimize their costs, including tax-related ones. Firms engage in tax aggressiveness by managing their earnings (Chen et al., 2010). Tax reporting aggressiveness aims to minimize taxable income through tax planning (Frank et al., 2009) and can be

classified into tax evasion and non-tax evasion. However, firms' tax aggressiveness will arguably reduce their book income. Meanwhile, shareholders prefer higher book income. Thus, tax aggressiveness will affect shareholders' interests because it will motivate managers to manage their firms' book and tax income or book-tax trade-off.

Publicly listed firms are required to publish their financial reporting periodically as their responsibilities to shareholders. The core component of financial reporting on which shareholders focus is firms' profit. Consequently, firms are motivated to enhance their reported earnings by engaging in financial reporting aggressiveness. Frank et al. (2009) emphasize that financial reporting aggressiveness increases firms' profits through earnings management, regardless of whether such actions comply or do not comply with accounting standards. However, firms' aggressive financial reporting decisions likely imply a trade-off with their tax reporting objective. In particular, firms' upward earnings management will increase their taxable income and, eventually, tax expense.

Most firms are arguably motivated to report higher earnings and lower taxable income to maximize their profits and minimize tax expense at the same time. However, it is difficult to maximize accounting earnings and minimize taxable income at the same time. Thus, managers need to decide the reporting objectives on which they prioritize. This study uses financial factors such as debt ratio, financial deficit, and access to the external or internal capital market to analyze firms' aggressive (tax vs. financial reporting) reporting decisions.

Debt ratio is the total liability divided by the total assets. Firms with higher total liability or lower total assets will exhibit higher debt ratios and vice versa. Debt ratio is associated with financial reporting costs because debt financing increases the risk of violating accounting-based debt covenants (Koh & Lee, 2015). These scholars argue that interest expense is non-tax deductible above a certain level of debt ratio. However, the Indonesian government does not set an upper limit of the tax-deductibility of interest expense. In this regard, debt ratio is closely related to tax expenses because firms with higher debt ratios will obtain higher tax deductions and eventually reduce their tax expense.

Financial deficit encourages firms to borrow money from banks or issue stocks or bonds to finance their operating and investing activities (Frank & Goyal, 2003). However, financially deficit firms are more difficult to do so because of their higher bankruptcy risk. Consequently, firms are motivated to enhance their reported earnings to enable them to acquire funds from banks or investors. However, increasing reported earnings will increase reporting costs. Additionally, aggressive financial reporting will increase taxable income and, eventually, tax expense.

Our last financial factor is access to external markets such as bond markets, stock markets, banks, and other financial institutions or internal capital markets such as affiliated firms or business group firms (Koh & Lee, 2015). Firms with better access to external capital markets are less motivated to engage in aggressive financial reporting because they have lower incentives to enhance their reported earnings. Besides, firms with better access to the internal capital market, such as affiliated firms, are also less motivated to engage in aggressive financial reporting because they rely less on external financing sources. Consequently, these firms have lower incentives to improve their reported earnings. Furthermore, firms with better access to external or internal capital market are likely to engage in tax avoidance than financial reporting aggressiveness because the benefits of minimizing costs are higher than obtaining funding from external or internal sources.

Tax is a mandatory financial contribution imposed to (institutional or individual) taxpayers by a government to fund governmental or public expen-

ditures. Firms are motivated to engage in incompliant tax reporting because they consider the costs and benefits of paying taxes. Taxes paid by firms financially support public services that are associated with community awareness (CSR). Consequently, taxes are not merely considered as operational costs. In this regard, firms can minimize their tax liabilities and, at the same time, still comply with tax regulations. However, intentionally strategic tax behaviors to reduce their taxes are considered tax evasion (Lanis & Richardson, 2012a). Thus, firms that minimize tax payments through methods unacceptable by their stakeholders likely create ethical problems in their operations.

Moreover, firms arguably aim to reduce their costs, including tax expense. Many firms engage in tax aggressiveness through earnings management (Chen et al., 2010). Tax reporting aggressiveness minimizes taxable income tax planning (Frank et al., 2009) that can be categorized into tax evasion or non-tax evasion. Moreover, Lanis & Richardson (2012b) argue that the terms of tax aggressiveness, tax evasion, and tax management refer to the same meaning. However, firms that engage in tax aggressiveness by reducing book income will also reduce their reported profits while shareholders prefer higher profits. Thus, tax aggressiveness will affect shareholders' interests because tax-aggressive firms manage their book income downward or commonly labeled as the book-tax trade-off.

Debt ratio is associated with financial reporting costs because debt financing increases the risk of violating accounting-based debt covenants (Koh & Lee, 2015). Debt ratio is also closely related to tax expenses because firms with higher debt ratios will receive more tax deduction and consequently reduce their tax expense.

The relationships between tax reporting and financial reporting and debt ratio are not simply monotonous. On the one hand, firms with higher debt ratios will arguably receive higher tax deduction. However, firms with debt ratios above a certain limit are more motivated to avoid taxes (Kweon et al., 2009). On the other hand, firms with lower debt ratios are motivated to engage in aggressive financial reporting to maximize their values, while firms with higher debt ratios will find it more difficult to engage in aggressive financial reporting and more motivated to engage in aggressive tax reporting.

H_1: firms with lower debt ratios are more aggressive in financial reporting; however, firms with higher debt ratios are more aggressive in tax reporting.

Shareholders arguably focus on firms' profits that affect firms' values. Consequently, firms are motivated to increase their reported profits by engaging in aggressive financial reporting. Frank et al. (2009) define that financial reporting aggressiveness increases firms' profits through earnings management either by complying or not complying with accounting standards. However, firms engaging in aggressive financial reporting are confronted with a trade-off with tax reporting objectives. In particular, firms that engage in upward earnings management will arguably exhibit higher taxable income and eventually pay higher taxes.

Financial deficit is an important factor that encourages firms to borrow from banks or issue stocks or bonds to finance their operating and investing activities (Frank & Goyal, 2003). However, deficit firms are more difficult to do so because of their higher bankruptcy risk. As a result, firms are motivated to enhance their reported earnings to enable them to acquire funds from banks or investors. However, increasing reported earnings will increase reporting costs. Additionally, aggressive financial reporting will increase taxable income and, eventually, tax expense.

Maresa (2014) examines the effect of firms' financial deficit on leverage and finds the significantly positive impact of financial deficit on leverage. On the other hand, this study analyzes the ef-

fect of financial deficit on reporting aggressiveness decisions. Firms with inadequate funding for capital expenditure are motivated to borrow from banks or issue securities (Koh & Lee, 2015). In this case, financial reporting considerations will be more important than tax reporting objectives because firms quickly need fundings for their business activities. Banks will not lend money to financially deficit firms because these firms exhibit higher bankruptcy risk. In a similar vein, shareholders are arguably reluctant to buy stocks of financially deficit firms because of the higher risk of decreasing share prices. Therefore, firms likely engage in aggressive financial reporting to convince banks or shareholders better.

H_2: firms with financial deficit engage in aggressive financial reporting

Firms can raise funds either from external or internal capital markets, including stock markets, banks and other financial institutions, and business group firms (Koh & Lee, 2015). Firms with better access to external capital markets are less motivated to engage in aggressive financial reporting because they have lower incentives to enhance their reported earnings. Besides, firms with better access to the internal capital market, such as affiliated firms, are also less motivated to engage in aggressive financial reporting because they rely less on external financing sources. Consequently, these firms have lower incentives to improve their reported earnings. Consequently, these firms have lower incentives to improve their reported earnings. Furthermore, firms with better access to external or internal capital markets are likely to engage in tax avoidance than financial reporting aggressiveness because the benefits of minimizing costs are higher than obtaining funding from external or internal sources.

Better access to internal or external capital markets is also crucial in facilitating firms to raise funds (Koh & Lee, 2015). Firms with better access to internal or external capital markets have lower incentives to enhance their reported profits because they can fund their expenditures more easily. In this regard, these firms can focus on engaging in tax aggressiveness to improve their values. Tax aggressiveness helps firms reduce their taxable income and, eventually, tax expenses. Thus, firms will arguably increase their values.

H_{3a}: firms with better access to external capital markets engage in aggressive tax reporting rather than financial reporting

H_{3b}: firms with better access to internal capital markets engage in aggressive tax reporting rather than financial reporting

3. Methods, Data, and Analysis

Our population is manufacturing firms listed on the Indonesia Stock Exchange (IDX) in 2012-2016. We select our sample by using the purposive sampling method with the following sampling criteria: (1) manufacturing firms that were listed on the Indonesia Stock Exchange (IDX) in five consecutive years (2012-2016). (2) Firms with complete data (debt ratio, long term debt, financial deficit, and access to external/internal capital market).

Dependent variable

The dependent variable of this study is aggressive reporting decisions (financial vs. tax reporting decisions). On the one hand, firms have incentives to have higher reported profit by engaging in aggressive financial reporting. On the other hand, firms also seek to minimize their tax expense by being aggressive in tax reporting. Both financial and tax reporting aggressiveness likely increase firms' values but also create a trade-off between both reporting aggressiveness.

We use book-tax difference (*BTD*) to measure tax reporting aggressiveness. Previous studies have also used other measures of tax aggressiveness, such as effective tax rate (*ETR*). However, *ETR* is potentially biased because reported tax expenses may include income tax expense, non-income tax expense,

and tax penalty. Thus, book-tax difference arguably better measures firms' tax avoidance behavior through financial reporting vis-a-vis tax reporting. *BTD* is calculated by deducting commercial profit with fiscal profit where fiscal profit is calculated by dividing current tax expenses by 25 percent. This study only uses positive *BTD* to measure tax reporting aggressiveness. We then rank *BTD* values from the lowest value to the highest one. We then use the median value of *BTD* to identify whether a firm engages in aggressive reporting. A firm with the *BTD* value that is below (above) the median value of *BTD* is considered to engage in low (high) tax reporting aggressiveness.

$$BTD = Commercial\ Profit - Fiscal\ Profit \quad (1)$$

Meanwhile, this study employs discretionary accrual (*DA*) as an indicator of earnings management to measure financial reporting aggressiveness. *TACC* is total accruals as the sum of discretionary and non-discretionary accruals where non-discretionary accrual is calculated by using total assets (*TA*), changes in sales minus changes in receivables ($\Delta ADJREV$), and gross property, plant and equipment (*PPE*) where $_t$ and $_i$ refer to year and firm, respectively (Koh & Lee, 2015). Discretionary accrual (*DA*) is total accruals minus non-discretionary accrual. Thus, various studies have used DA to measure aggressive earnings management behavior likely because accrual-based accounting enables firms to report their earnings aggressively by managing their numbers in financial reporting. Similar to *BTD*, we rank *DA* from the lowest value to the highest one. A firm the DA value that is lower (higher) than the median value of *BTD* is considered to engage in low (high) financial reporting aggressiveness.

$$TACCi,t = \alpha 1\frac{1}{TAi,t-1} + \alpha 2\frac{\Delta ADJREVi,t}{TAi,t-1} + \alpha 3\frac{PPEi,t}{TAi,t-1} + \varepsilon i,t \quad (2)$$

This research uses earnings management and tax management (*EMTM*) to measure a firm's aggressive reporting decisions (financial reporting vs. tax reporting aggressiveness). A firm with low *BTD* and high *DA* will be scored one for *EMTM*, indicating that this firm engages in aggressive financial reporting. Conversely, a firm with high *BTD* and low *DA* will be scored zero for *EMTM*, indicating that the firm engages in aggressive tax reporting. We leave out firms with both low (high) *BTD* and *DA* scores from the observations to focus more on forms facing a trade-off between tax aggressiveness and financial reporting aggressiveness. *EMTM* can measure the dichotomy of management policy choices because it has considered both elements of tax and financial reporting aggressiveness indicators at once in a proxy. The combination of the *EMTM* element's opposite score indicates the existence of management policy choices that tend to one of the aggressive behavior. *EMTM* itself has been used to measure the tendency of management policy choices (financial reporting vs. tax reporting aggressiveness) by previous studies such as (Koh & Lee, 2015; Seviana & Kristanto, 2020; Tjondro & Permata, 2019).

Independent Variable

Debt ratio

We measure debt ratio with leverage (*LEV*). *LEV* is the ratio total liability to total assets that indicates that firms with higher total liability or lower total assets will exhibit higher debt ratios and vice versa (Koh & Lee, 2015).

$$Lev = \frac{Total\ Debt}{Total\ Asset} \quad (3)$$

Financial deficit

Financial deficit is measured by the level of internal financing deficit (*DEFICIT*) that is formulated as follows:

$$DEFICIT = (Capital\ Expenditure + Net\ Increase\ in\ Working\ Capital + Dividend + Current\ Portion\ of\ Long\ Term\ Debt\ at\ Start\ of\ Period - Operating\ Cash\ Flow)/\ Asset \quad (4)$$

Where net increase in working capital equals to increase in account receivable change minus increase in inventory minus increase in account payables (Koh & Lee, 2015).

Access to external/internal capital market

Access to the external/internal capital market is measured by *ECM* and *ICM*, respectively. *ECM* is the sum of total liability and market value of equity divided by total assets (Koh & Lee, 2015). Whereas, *ICM* is debt from related parties divided by total assets.

$$ECM = \frac{(Liability + Market\ Value\ of\ Equity)}{Total\ Asset} \quad (5)$$

$$ICM = \frac{Debt\ from\ Related\ Parties}{Total\ Asset} \quad (6)$$

Control Variable

The control variables are variables that are controlled or made constant to mitigate the risk that the dependent variable is affected not only by the independent variables but also other factors (Sugiyono, 2017). This research includes several control variables such as firm size (*SIZE*) that is measured with the logarithmic value of total assets, profitability (*ROA*) that equals the ratio of net income to total assets and growth (*REV*) that refers to changes in sales to total assets. We predict that these control variables affect earnings management (Koh & Lee, 2015). These three variables are commonly used as the control variables. Further, these control variables are also potentially the alternative robustness test to ensure that firms' decisions are only affected by debt ratio, financial deficit, and access to external/internal capital markets.

$$SIZE = Log\ (Asset) \quad (7)$$

$$ROA = \frac{Net\ Income}{Total\ Asset} \quad (8)$$

$$REV = \frac{Changes\ in\ Sales}{Total\ Asset} \quad (9)$$

The following are the data analysis techniques in this research: (1) collecting data; (2) Measuring tax reporting aggressiveness level using *BTD*; (3) Measuring financial reporting aggressiveness level using *DA*; (4) Measuring reporting aggressiveness using *EMTM*.

This research uses logistic regression to analyze the effect of financial factors on firms' reporting aggressiveness (financial vs. tax reporting aggressiveness). We use the logit regression analysis method because the dependent variable is a dummy (non-metric) one that is measured with the nominal scale (dichotomous) while the independent variables are measured with the ratio scale (Gudono, 2015).

Model 1: $EMTM = \beta 0 + \beta 1LEV + \beta 2SIZE + \beta 3ROA + \beta 4REV + ei,t$ (10)

Model 2: $EMTM = \beta 0 + \beta 1DEFICIT + \beta 2SIZE + \beta 3ROA + \beta 4REV + ei,t$ (11)

Model 3: $EMTM = \beta 0 + \beta 1ECM + \beta 2ICM + \beta 3SIZE + \beta 4ROA + \beta 5REV + ei,t$ (12)

Where, *EMTM* is earning management and tax management level, *LEV* is leverage, *LTDEBT* is long term debt, *DEFICIT* is financial deficit, *ECM* is external capital market, *ICM* is internal capital market, *SIZE* is firm size, *ROA* is profitability, and *REV* is growth.

The hypothesis is empirically supported if the following criteria are met (Table 1).

4. Results

Table 2 describes our sample selection. The initial sample of this study is all manufacturing firms listed on the Indonesia Stock Exchange (IDR) from 2012 until 2016. This study generates 90 sample firms in five consecutive years based on the balanced panel

approach (Kerstens & Van de Woestyne, 2014). Thus, the data is sorted to obtain a consistent number of sample firms each year by following the criteria mentioned previously.

Our sample is 450 firm-year observations. This study classifies each observation into being aggressive in financial reporting (*EMTM*=1) with low *BTD*-high *DA* or aggressive in tax reporting (*EMTM*=0) with high *BTD*-low *DA*. As explained before, we eliminate firms with high *BTD*- high *DA* or low *BTD*-low *DA*. The total sample of *EMTM*=1 is 90, and the total sample of *EMTM*=0 is 90. Thus, the total sample used is 180 firm-year observations.

Table 1. Hypothesis acceptance criteria

Hypothesis	Acceptance Criteria
H_1	*LEV* has a significant negative impact on *EMTM* (equation 10)
H_2	*DEFICIT* has a significant positive impact on *EMTM* (Equation (11)
H_{3a}	*ECM* has a significant negative impact on *EMTM* (Equation 12)
H_{3b}	*ICM* has a significant negative impact on *EMTM* (Equation 12)

Notes: *LEV*= leverage is the ratio total liability to total assets; *DEFICIT*= financial deficit is the ratio (capital expenditure+net increase in working capital+dividend+current portion of long term debt at start of period-operating cash flow)/asset; *ECM*= External Capital Market is the sum of total liability and market value of equity divided by total assets; *ICM*= Internal Capital Market is debt from related parties divided by total assets; *EMTM*= Earnings Management and Tax Management is earning management and tax management level.

Table 2. Sample selection

	2012	2013	2014	2015	2016
Total firms	135	138	146	143	144
Total firms that provide financial report in 2012-2016	90	90	90	90	90
High *BTD*-Low *DA*	17	18	19	14	22
Low *BTD*-High *DA*	14	18	20	21	17
High *BTD*-High *DA*	37	28	25	22	21
Low *BTD*-Low *DA*	30	33	26	26	20

Notes: *BTD*= book-tax difference is commercial profit – fiscal profit; *DA*= discretionary accrual as an indicator of earnings management to measure financial reporting aggressiveness

Table 3. Descriptive statistic

	EMTM	*LEV*	*DEFICIT*	*ECM*	*ICM*	*SIZE*	*ROA*	*REV*
Mean	0.5487	0.5394	0.8449	69.4288	0.0799	0.0357	0.0673	0.0421
Std. Deviation	0.4998	0.2665	7.3080	341.36	0.2687	0.0027	0.1209	0.2151
Minimum	0.0000	0.18	-0.36	0.38	0.00	0.03	-0.13	-0.96
Maximum	1.00	2.49	77.00	2430.90	2.40	0.05	0.66	1.12

Notes: *EMTM*= Earnings Management and Tax Management is earning management and tax management level; *LEV*= leverage is the ratio total liability to total assets; *DEFICIT*= financial deficit is the ratio (capital expenditure+net increase in working capital+dividend+current portion of long term debt at start of period-operating cash flow)/asset; *ECM*= External Capital Market is the sum of total liability and market value of equity divided by total assets; *ICM*= Internal Capital Market is debt from related parties divided by total assets; *SIZE*= firm size is measured with the logarithmic value of total assets; *ROA*= profitability is the ratio of net income to total assets; *REV*= growth is the ratio changes in sales to total assets.

Table 3 presents the descriptive statistics of our research variables. This study classifies sample firms into financial reporting aggressiveness (*EMTM*=1) or tax reporting aggressiveness (*EMTM*=0) based on discretionary accruals and book-tax-differences. Besides, this study uses leverage by dividing total debts with total assets to measure debt ratio. The mean value of *LEV* is 0.5487. Meanwhile, this study measures financial deficit by using *DEFICIT* as the sum of capital expenditure, net increase in working capital, dividend, and current portion of long term debt at the start of the period minus operating cash flow divided by total assets where net increase in working capital equals an increase in account receivable change minus increase in inventory minus increase in account payables (Koh & Lee, 2015). According to Table 3, the mean value of *DEFICIT* is 0,8449. Lastly, we use *ECM* as a proxy of access to the external capital market and *ICM* as the indicator of access to the internal capital market. The mean value of *ECM* 69,43 and the mean value of *ICM* is 0.0799. For the control variables, the mean value of *SIZE* is 0.357, the mean value of *ROA* is 0.06703, and the mean of REV is 0.0421. Furthermore, *ROA* and *LEV* are insignificantly correlated (Pearson correlation 0.32; 2-tailed sign. 0.488), thus indicating that there is no serious multicollinearity issue.

Table 4 displays the results of estimating equation 11. According to table 4, the significance level of *LEV* is 0.088, and its beta value is -1.996. The findings indicate that debt ratio negatively affects *EMTM*. Besides, *ROA* has a negative impact on *EMTM*, but *REV* and *SIZE* do not affect *EMTM*. Thus, only *ROA* can be used as the control variable in the *LEV* equation.

Table 4. The results of estimating equation

	LEV	***ROA***	***REV***	***SIZE***
Beta	-1.996	-10.411	-1.070	124.803
Significance	0.088*	0.03**	0.446	0.120

Notes: *LEV*= leverage is the ratio total liability to total assets; *SIZE*= firm size is measured with the logarithmic value of total assets; *ROA*= profitability is the ratio of net income to total assets; *REV*= growth is the ratio changes in sales to total assets. *, **, *** significance at 10 percent, 5 percent, 1 percent respectively.

Table 5. the results of estimating equation

	DEFICIT	***ROA***	***REV***	***SIZE***
Beta	-0.485	-8.980	-1186	131.329
Significance	0.612	0.003***	0.406	0.111

Notes: *DEFICIT*= financial deficit is the ratio (capital expenditure+net increase in working capital+dividend+current portion of long term debt at start of period-operating cash flow)/asset; *SIZE*= firm size is measured with the logarithmic value of total assets; *ROA*= profitability is the ratio of net income to total assets; *REV*= growth is the ratio changes in sales to total assets. *, **, *** significance at 10 percent, 5 percent, 1 percent respectively.

Table 6. The results of estimating equation

	ECM	***ICM***	***ROA***	***REV***	***SIZE***
Beta	-0.137	-4.423	-10.853	0.507	1672
Significance	0.056*	0.028**	0.047**	0.796	0.000***

Notes: *ECM*= External Capital Market is the sum of total liability and market value of equity divided by total assets; *ICM*= Internal Capital Market is debt from related parties divided by total assets; *SIZE*= firm size is measured with the logarithmic value of total assets; *ROA*= profitability is the ratio of net income to total assets; *REV*= growth is the ratio changes in sales to total assets. *, **, *** significance at 10 percent, 5 percent, 1 percent respectively.

Table 5 describes the results of equation 12. These results suggest that financial deficit has no significant impacts on *EMTM*. Moreover, only *ROA* that has a significant impact on *EMTM*. Thus, *REV* and SIZE cannot be used as the control variables for *DEFICIT*.

Table 6 demonstrates the results of equation 13. The *ECM* coefficient is significantly negative at the 0.1 level. The significance value of *ECM* is 0.056, and its beta value is -0137. The results indicate that *ECM* has a negative impact on *EMTM*. Meanwhile, *ICM* has a significantly negative impact on *EMTM* at 0.0.5 level. In particular, the significance value of *ICM* is 0.028, and its beta value is -4.432. Furthermore, *ROA* and *SIZE* have significant impacts on *EMTM* with the significance values of 0.047 and 0.000, respectively. However, *REV* does not significantly affect *EMTM* with a significance value of 0.796. Thus, *REV* cannot be used as the control variable of *ECM* and *ICM*.

5. Discussion

Debt ratio

Firms with low (high) debt ratio likely engage in less (more) aggressive financial reporting as the debt ratio increases. Firms with high debt ratios put more emphasis on lowering tax expense that increases firms' value more effectively than managing book income because of high tax deduction from debt ratio. Conversely, firms with low debt ratio put more emphasis on managing book income. The average DER of our manufacturing sample firms is more than 50 percent, indicating that more than half of the firms' total assets are financed by debt. Some firms even have total debt higher than their total assets. Manufacturing firms likely use their high debt ratios to facilitate their investments both in tangible and intangible assets (such as research and development). Also, manufacturing firms may have lower internal capital that they need to acquire higher debts as external financing. Because debt offers tax shields (tax deduction) for firms in terms of interest payment (Soraya & Permanasari, 2017), higher debt ratios will increase firms' value. Frank et al. (2009) also demonstrate that debt ratio has a positive impact on tax reporting aggressiveness because high leverage incurs higher interest expense that arguably reduces net profits. Consequently, highly leveraged firms will obtain higher tax deduction and pay lower taxes to the government. Koh & Lee (2013) also suggest that firms with debt ratios above a certain level are more likely to engage in aggressive tax reporting as debt ratio increases.

Financial deficit

Firms with financial deficits are less likely to engage in aggressive financial reporting. Koh & Lee (2013) proved that financially deficit South Korean firms tend to engage in aggressive financial reporting rather than tax reporting because those firms need rapid funding to finance their operational activities. Thus, firms will manage their earnings upward to acquire bank loans or issue stocks. However, this research shows different results. Firms with financial deficits are less likely to be aggressive in financial reporting likely because firms' financial deficit is mostly caused by capital expenditures and not by financial distress. Capital expenditures such as factory expansion, land purchase, and building construction increase firms' values. Consequently, firms have lower incentives to enhance their reported income. This argument is in line with previous results on debt ratios that demonstrate that manufacturing firms' capital expenditure reflects their investment commitments on prospective projects (Darmanto & Ardiansari, 2017). Consequently, these firms do not need rapid funding for their operational activities and eventually are less motivated to engage in aggressive financial reporting.

ECM and ICM

Firms with better access to external capital markets are more likely to engage in aggressive tax

reporting rather than financial reporting. These firms have less concerns about their financing because they already have better access to the external capital market. Furthermore, firms with high market-to-book ratio put more emphasis on tax reporting aggressiveness rather than financial reporting aggressiveness to increase their values. Thus, firms with high market-to-book ratio have better access to the external capital market and have lower incentives to manage their book income to acquire external financing.

Further, our results related to the third hypothesis demonstrates that firms with better access to internal capital markets are likely to engage in aggressive tax reporting rather than financial reporting. Firms with better access to the internal capital market will find it easier to obtain funding from various facilities and subsidies from affiliated firms (Azizah & Kusmuriyanto, 2016). Firms with better access to internal capital markets, such as from affiliated firms, will have a larger portion of internal capital financing. Consequently, these firms are less (more) motivated to engage in financial reporting (tax reporting) because they have lower incentives to improve their reported income. Also, firms can increase their values by engaging in tax aggressiveness. Tax aggressiveness reduces taxable income and, consequently, tax expenses. Eventually, firms can increase their values.

6. Conclusion

This study analyzes the effects of firms' financial factors on aggressive reporting decisions that consist of financial reporting (earnings management) and tax reporting (tax avoidance) aggressiveness. Our results that demonstrate the effects of debt ratio and access to the capital market on aggressive reporting decisions are consistent with prior studies. However, our finding on the effect of financial deficit is not in line with prior studies. Overall, this study demonstrates the impacts of financial factors such as debt ratio, financial deficit, and internal/external capital market on aggressive reporting decisions. Our study informs tax officials about the factors that affect firms' aggressive reporting decisions. In particular, firms with low (high) debt ratio tend to engage in aggressive financial (tax) reporting. Besides, tax officers can identify that access to capital markets affects firms' aggressive reporting decisions. Firms with better access to internal/external capital markets tend to be aggressive in tax reporting rather than financial reporting. The discussion also benefits to the positive accounting theory that relates tax policies to firms' accounting policies.

This study only selects observations with high *BTD*-low *DA* or low *BTD*-high *DA* as the sample firms that significantly reduces the number of observations because much fewer firms classify these criteria. Future research can address this issue by using different methods to measure *EMTM* to generate more sample firms. Besides, this study has not included corporate governance variables in the analysis. These variables will arguably be the antecedents of publicly listed firms' aggressive behavior. Thus, we advise future studies to add these variables to have more varied perspectives for similar topics.

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