Book-Tax Conformity Level on the Relationship between Tax Reporting Aggressiveness and Financial Reporting Aggressiveness

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Abstract

The purpose of this study is to examine the effect of book-tax conformity level on the relationship between tax reporting aggressiveness and financial reporting aggressiveness. Different from Frank et al. (2009) and Lennox et al. (2013), this study considers endogeneity problem to minimize biased results. Using the companies listed on the Indonesia Stock Exchange for 2013-2016, this study found that there is endogeneity problem in the relationship between tax reporting aggressiveness and financial reporting aggressiveness, but no causality relationship. In this case, only tax reporting aggressiveness that affects financial reporting aggressiveness, but not otherwise. Consistent with the hypothesis, this study also found that firm with a low level of BTC is more weakened trade-offs between tax reporting aggressiveness and financial reporting aggressiveness than firm with high level of BTC. These results are consistent either with or without include the industry dummy.

JEL Classification: M41, K34.

Keywords: book-tax conformity, tax reporting aggressiveness, financial reporting aggressiveness, Indonesia.

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INTRODUCTION

The purpose of this study is to examine the relationship between tax reporting aggressiveness and financial reporting aggressiveness. Specifically, this study aims to examine the effect of book-tax conformity (BTC) level on the relationship between tax reporting aggressiveness and financial reporting aggressiveness. Conceptually, financial reporting aggressiveness is defined as upward earnings management. Meanwhile, tax reporting aggressiveness is defined as effort to downward taxable income.

The relationship between tax reporting aggressiveness and financial tax aggressiveness is interesting to investigate for two reasons. The first reason, there are two research streams that test this relationship. The first stream focuses on testing whether tax reporting aggressiveness affects financial reporting aggressiveness (Dhaliwal et al., 2004; Frank et al., 2009; Wang & Chen, 2012). From the investors' point of view, tax reporting aggressiveness is an activity that maximizing firm value (Kim et al., 2011). As residual claimants, shareholders tend to ask manager to do tax avoidance, so they can increase earnings after tax that will be received, through dividends. To align the shareholders' interest, tax avoidance activity can be used as a justification for managers to manage earnings (Desai & Dharmapala, 2009).

In contrast, the second stream focuses on testing whether financial reporting aggressiveness affects tax reporting aggressiveness (Frank et al., 2009; Lennox et al., 2012). Dhaliwal et al. (2004) states that when a company has an incentive to achieve a certain earnings target (e.g. to meet or beat analysts' forecast earnings), current tax expense accounts can be the last opportunity to make earnings management. However, managers can also decide to pay taxes based on earnings overstatement that have been reported in the financial statements. It is done to avoid the suspicion from savvy investors, capital market authorities, and the tax authorities (Erickson, et al, 2004; Desai, 2005; Desai and Dharmapala, 2006). However, current research has not considered the endogeneity problem. If there is endogeneity problem and it is not solved, then it can cause the biased result. This biased result can be reflected in inconclusive results at previous research.

The second reason, the relationship between tax reporting aggressiveness and financial reporting aggressiveness is also highly depend on BTC level. According to Shackelford and Shevlin (2001), the trade-offs of tax reporting and financial reporting faced by managers occur because apply the high BTC level. In otherwise, managers that do not face trade-offs occur because apply low BTC level (Desai, 2002; Manzon & Plesko, 2002; Mills et al., 2002; Boynton et al., 2005; Hanlon et al., 2005; Frank et al., 2009). However, there is no empirical evidence that show whether vary BTC level affect the relationship between tax reporting aggressiveness and financial reporting aggressiveness.

Using a sample of companies listed on the Indonesia Stock Exchange for 2013-2016, this study aims to fill the gap of previous research (Frank et al., 2009; Lennox et al., 2013). Frank et al., 2009 examines the relationship between tax reporting aggressiveness and financial reporting aggressiveness using ordinary least squares (OLS). If the study indicates any endogeneity problem, then OLS may provide biased results. Different from Frank et al. (2009), this study will examine the relationship between tax reporting aggressiveness and financial reporting aggressiveness using two-stage least squares (2SLS) to minimize the biased results.

In addition, this study also examines the relationship between tax reporting aggressiveness and financial reporting aggressiveness across different BTC level. According to Atwood, et al. (2010), the diversity of tax reporting will reflect level of diversity of taxable income permitted by taxation authorities in a country. The diversity of tax reporting will also reflect the extent of BTC levels permitted by a country. Therefore, this study only used data in one country, Indonesia, BTC level is measured by conformity between accounting standards and tax laws are allowed across industries. Previous studies have not shown empirical evidence related to the impact of BTC levels on the relationship between tax reporting aggressiveness and financial reporting aggressiveness. We predict that the higher BTC level, firm is likely to face trade-offs when making financial reporting and tax reporting (Shackelford & Shevlin, 2001). Instead, we predict that the lower BTC level, firm has opportunity to make tax reporting aggressiveness and financial reporting aggressiveness in the same period (Desai, 2002; Manzon & Plesko, 2002; Mills et al., 2002; Boynton et al., 2005 ; Hanlon et al., 2005; Frank et al., 2009).

This study contributes to the literature examining the relationship between tax reporting aggressiveness and financial reporting aggressiveness. This study found that there is endogeneity problem in the relationship between tax reporting aggressiveness and financial reporting aggressiveness, but no causality relationship. In this case, only tax reporting aggressiveness that affects financial reporting aggressiveness, but not otherwise.

In accordance with the predictions, this study also found that firm with a low level of BTC is more weakened trade-offs between tax reporting aggressiveness and financial reporting aggressiveness than firm with high level of BTC. These results are consistent either with or without include the industry dummy. These results support previous research.

The remainder of the paper is organized as follows. This paper will discuss the theoretical foundation and some previous research to develop the hypothesis. In the next section of this study will discuss the research design. Furthermore, we will present some of the findings in this study. Finally, this study will present conclusions, limitations of research, and development for future research.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Relationship between Tax Reporting Aggressiveness and Financial Reporting Aggressiveness

There are two research streams that test the relationship between tax reporting aggressiveness and financial reporting aggressiveness. The first stream focuses on testing whether tax reporting aggressiveness affects financial reporting aggressiveness (Dhaliwal et al., 2004; Frank et al., 2009; Wang & Chen, 2012). From the investors' point of view, tax reporting aggressiveness is an activity that maximizing firm value (Kim et al., 2011). As residual claimants, shareholders tend to ask manager to do tax avoidance, so they can increase earnings after tax that will be received, through dividends. To align the shareholders' interest, tax avoidance activity can be used as a justification for managers to manage earnings (Desai & Dharmapala, 2009). However, current research has not considered the endogeneity problem. If there is endogeneity problem and it is not solved, then it can cause the biased result. This biased result can be reflected in conclusive results at previous research.

However, that explanation has not considered the possibility of agency problem between managers as agents and shareholders as principals. In Jensen & Meckling (1976), managers also have an interest in maximizing their own well-being. Thus, it is possible for managers to not

always act aligned with interests of shareholders for several reasons (Desai & Dharmapala, 2009). First, manager needs large effort to make tax reporting aggressiveness. Managers should study the loopholes of tax regulations and apply them in day-to-day corporate transactions. Second, managers with risk-averse type do not want to imply tax reporting aggressiveness strategy because it can be detected by tax authorities and it have potential to be given sanctions.

In contrast, the second stream focuses on testing whether financial reporting aggressiveness affects tax reporting aggressiveness (Frank et al., 2009; Lennox et al., 2012). Dhaliwal et al. (2004) states that when a company has an incentive to achieve a certain earnings target (e.g. to meet or beat analysts' forecast earnings), current tax expense accounts can be the last opportunity to make earnings management. However, managers can also decide to pay taxes based on earnings overstatement that have been reported in the financial statements. It is done to avoid the suspicion from savvy investors, capital market authorities, and the tax authorities (Erickson, et al, 2004; Desai, 2005; Desai and Dharmapala, 2006).

Erickson et al. (2004) describe four potential tax treatment that can be applied by the manager when the company overstated earnings in its financial reporting. First, management may choose not to report the overstated earnings report the company and classifies tax on temporary differences between accounting standards and tax regulations. Second, manager can ignore overstated earnings from taxable income and classifies them as permanent differences between accounting standards and tax regulations. Third, manager can report the overstated earnings in tax reporting. Fourth, managers can report fictitious earnings on their financial statements and then as if paying taxes by the actual amount.

The current research has not considered the endogeneity problem. If there is endogeneity problem and it is not solved, then it can cause the biased result. This biased result can be reflected in inconclusive results at previous research. In general, managers may face trade-offs when making tax reporting and financial reporting (Shackelford & Shevlin, 2001). Managers deciding to upward earnings management in the financial reporting may incur tax costs to report higher book income. Similarly, manager deciding to downward taxable income to tax authorities may report lower income to shareholders and thereby incur financial reporting costs. In other words, financial reporting aggressiveness have negative impact on tax reporting aggressiveness, and vice versa.

Lennox et al. (2013) also found that the impact of tax reporting aggressiveness on the probability of firm with accounting fraud is negative and significant. This impact is caused by the increasing of opportunity to be monitored by tax authorities (Erickson, et al 2004). Dhaliwal et al. (2004) showed that firm will tend to reduce tax avoidance measures to meet or beat analysts' forecasts earnings.

In contrast, Desai (2005) states that manager's decision to make tax reporting aggressiveness and fraud will tend to occur simultaneously. Desai (2003) proved that the companies involved in tax shelters, tend to increase the accounting earnings. Frank et al. (2009) found that financial reporting aggressiveness have a positive impact on tax reporting aggressiveness, and vice versa. Based on previous research, we predict that there is an endogeneity problem in the relationship between tax reporting aggressiveness and financial reporting aggressiveness.

Relationship between Tax Reporting Aggressiveness and Financial Reporting Aggressiveness across BTC Levels

Based on previous research, the relationship between tax reporting aggressiveness and financial reporting aggressiveness is also highly depend on BTC level. Shackelford & Shevlin (2001) explains that theoretically trade-offs of tax reporting and financial reporting faced by managers can occur due to apply high level of BTC. In otherwise, managers that do not face trade-offs of tax reporting and financial reporting can occur due to apply low level of BTC (Desai, 2002; Manzon & Plesko, 2002; Mills et al., 2002; Boynton et al., 2005; Hanlon et Al., 2005; Frank et al., 2009). However, there is no empirical evidence that show whether vary BTC level affect the relationship between tax reporting aggressiveness and financial reporting aggressiveness.

According to Atwood, et al. (2010), the diversity of tax reporting will reflect level of diversity of taxable income permitted by taxation authorities in a country. The diversity of tax reporting will also reflect the extent of BTC levels permitted by a country. Mills & Newberry (2001) proves that firms with incentives for earnings management have low level of BTC. The magnitude of the difference between accounting earnings and taxable income can be a signal of low earnings quality for financial statements users (Chaney & Jeter, 1994; Joos et al., 2002; Hanlon, 2003a). Firm with high level of BTC have higher earnings quality than firms with low level of BTC (Hanlon, 2005).

Based on previous studies, we predict that the higher BTC level, firm is likely to face trade-offs when making financial reporting and tax reporting (Shackelford & Shevlin, 2001). Instead, we predict that the lower BTC level, firm has opportunity to make tax reporting aggressiveness and financial reporting aggressiveness in the same period (Desai, 2002; Manzon & Plesko, 2002; Mills et al., 2002; Boynton et al., 2005 ; Hanlon et al., 2005; Frank et al., 2009). Thus, the hypothesis developed in this study is:

H_1: Firm with low level of BTC is more weakened trade-offs between tax reporting aggressiveness and financial reporting aggressiveness than firm with high level of BTC.

RESEARCH METHODS

Data and Sample

This study uses companies listed on the Indonesia Stock Exchange. Indonesia was chosen as the setting of research because the level of protection of investors in Indonesia is relatively lower than other countries (Claessens & Yurtoglu, 2013; Doidge, et al., 2007; Klapper and Love, 2004; Mitton, 2002; Claessens et al., 2000). Thus, it appropriate setting to examine the relationship between tax reporting aggressiveness and financial reporting aggressiveness.

Data are taken from the Thomson Reuters Eikon database in the period 2013 to 2016. For data that are not available in database, we collect data manually from the financial statements downloaded from the official website of Indonesia Stock Exchange, namely www.idx.co.id. Industry classification is based on two-digit GICS code.

We selected the sample based on several criteria. First, we exclude firm that specifically regulated in taxation (e.g. Final Income Tax Payers and firm in the financial industry). Second, an industry at least consist of ten companies. Third, we exclude firm with incomplete data. Lastly, we exclude firm at 1% top and bottom of the sample to solve the outliers. The final sample consists of 1.212 firm-years or 303 firms. Table 1 presents the description of the sample used in this study based on the composition of industry.

Table 1
Sample Description: Industrial Composition

Dua-digit GICS *code*	Sektor Industri	Jml. Observasi
10	*Energy*	144
15	*Materials*	232
20	*Industrials*	200
25	*Consumer Discretionary*	304
30	*Consumer Staples*	196
35	*Health Care*	52
45	*Information Technology*	40
50	*Telecommunication Services*	44
Total		**1.212**

Measurement of Tax Reporting Aggressiveness

The measurement of tax reporting aggressiveness is following Frank et al. (2009). We consider firms to have aggressive tax reporting if they have high discretionary permanent book-tax differences. According to Frank et al. (2009), permanent book-tax differences are better measure than otherwise (such as total effective tax rates (ETRs), cash ETRs, total discretionary book-tax differences) for several reasons. First, permanent differences are more consistent with anecdotal evidence regarding the nature of aggressive tax shelter activity. Second, the permanent differences are more comparable to total accruals. Third, the measurement of tax reporting aggressiveness using temporary differences and cash ETRs could be correlated with the measurement of financial reporting aggressiveness. It may cause bias results.

There is equation used to estimate discretionary permanent differences (*DTAX*) which has been adjusted to the accounting standards and tax regulations in Indonesia:

$$PERMDIFF_{it} = \alpha_0 + \alpha_1 INTANG_{it} + \alpha_2 \Delta NOL_{it} + \alpha_3 LAGPERM_{it} + \varepsilon_{it} \quad (1)$$

where:

$PERMDIFF_{it}$ = Total book-tax differences less temporary book-tax differences for firm i in year t ($PTBI_{it}$ - (CTE_{it} / STR_{it}) - (DTE_{it} / STR_{it}).
$PTBI_{it}$ = Pre-tax book income for firm i in year t.
CTE_{it} = Current income tax expense of firm i in year t.
STR_{it} = Income Tax Rates in year t, 25%.
DTE_{it} = Deferred tax expense for firm i in year t.
$INTANG_{it}$ = Goodwill and other intangible assets for firm i in year t.
ΔNOL_{it} = Changes in net operating loss carryforwards for firm i in year t.
$LAGPERM_{it}$ = One-year lagged PERMDIFF for firm i in year t.
ε_{it} = Discretionary permanent difference ($DTAX_{it}$) for company i in year t.

To control firm size, all variables above are scaled by the average total assets in year t-1 and year t. Equation (1) are estimated for each industry-year based on two-digit GICS code. Table 2 presents the average estimation result of equation (1).

In equation (1), we include variable to control nondiscretionary permanent differences not related to tax planning (such $INTANG_{it}$). Meanwhile, ΔNOL_{it} variable is controlled for changes in net operating loss carryforwards related to the change in the valuation allowance account that impact on *PERMDIFF* but not related to tax planning. Finally, we include permanent nondiscretionary *LAGPERM* to control persistent differences over time. Thus, the residual (ε) from the equation (1) can be used as a proxy for discretionary permanent differences (*DTAX*).

Table 2
Estimation Results of Tax Reporting Aggressiveness

$$PERMDIFF_{it} = \alpha_0 + \alpha_1 INTANG_{it} + \alpha_2 \Delta NOL_{it} + \alpha_3 LAGPERM_{it} + \varepsilon_{it} \quad (2)$$

	Coefficient
Intercept	-0,006**
INTANG$_{it}$	-0,004
ΔNOL$_{it}$	0,632***
LAGPERM$_{it}$	0,451***
Adjusted R^2	22,2%

Notes:
, **, * are significant at the 90%, 95%, 99% confidence level.*
The dependent variable is PERMDIFFit that measured by total book-tax differences deducting temporary differences for firm i in year t. INTANGit is goodwill and other intangible assets for firm i in year t. ΔNOLit is the change in net operating loss carryforwards for firm i in year t. LAGPERM is a one-year lagged PERMDIFF for firm i in year t. ε is discretionary permanent difference (DTAX it) for company i in year t.

Measurement of Financial Reporting Aggressiveness

We measure financial reporting aggressiveness with modified-Jones model (Dechow et al., 1995) as follows:

$$TACC_{it} = \alpha_0 + \alpha_1(\Delta REV_{it} - \Delta AR_{it}) + \alpha_2 PPE_{it} + \eta_{it} \quad (2)$$

where:

$TACC_{it}$ = Total accruals ($PTBI_{it}$ - (CFO_{it} + ITP_{it}) for firm i in year t.
CFO_{it} = Cash flow from operations for firm i in year t.
ITP_{it} = Income taxes paid for firm i in year t.
ΔREV_{it} = Changes in sales for firm i of year t-1 to year t.
ΔAR_{it} = Changes in accounts receivables for firm i from year t-1 to year t.
PPE_{it} = Gross property, plant, and equipment for firm i in year t.
η_{it} = Discretionary accruals (*DFIN*) for company i in year t.

To control firm size, all variables above are scaled by the average total assets in year t-1 and year t. Equation (2) are estimated for each industry-year based on two-digit GICS code. This study uses pre-tax accruals in the TACC to eliminate the possibility of correlation with tax reporting aggressiveness. Table 3 presents the average estimation result of equation (2).

Table 3
Estimation Result of Financial Reporting Aggressiveness

$$TACC_{it} = \alpha_0 + \alpha_1(\Delta REV_{it} - \Delta AR_{it}) + \alpha_2 PPE_{it} + \eta_{it} \quad (3)$$

	Coefficient
Intercept	-0,012
(ΔREV_{it} - ΔAR_{it})	0,138***
PPE_{it}	-0,056***
Adjusted R^2	4,0%

Notes:
, **, * are significant at the 90%, 95%, 99% confidence level.*
The dependent variable is the TACCit that measured by pre-tax total accruals for firm i in year t. ΔREVit is the change in sales for the company i of year t-1 to year t. ΔARit is a change in accounts receivable for the company i of year t-1 to year t. PPEit is gross property, plant, and equipment for firm i in year t. ηit is discretionary accruals (DFIN) for company i in year t.

Measurement of BTC Subsample

To examine whether the different level of BTC is affect on the relationship between tax reporting aggressiveness and financial reporting aggressiveness, we measure the level of BTC following Atwood et al. (2010). According to Atwood, et al. (2010), the diversity of tax reporting will reflect level of diversity of taxable income permitted by taxation authorities in a country. The diversity of tax reporting will also reflect the extent of BTC levels permitted by a country. Therefore, this study only used data in one country, Indonesia, BTC level is measured by conformity between accounting standards and tax laws are allowed across industries. Thus, we measure the level of BTC based on the Root Mean Squared Error (RMSE) of equation (3) below:

$$CTE_{it} = \theta_0 + \theta_1 PTBI_{it} + e_{it} \quad (3)$$

To control firm size, all variables above are scaled by the average total assets in year t-1 and year t. Equation (3) are estimated for each industry-year based on two-digit GICS code.

In accordance with the explanation before, RMSE indicates management discretion in differential between financial reporting and tax reporting, either higher or lower. The larger RMSE, the lower level of BTC. Conversely, the smaller RMSE, the higher level of BTC. The subsample was obtained by rank the RMSE in each industry-year from the lowest to the highest value. We measured small BTC (*SBTC*) variable as a dummy variable in which "1" for firm with RMSE values that greater than median in year t, and "0" for otherwise.

For robustness check, we uses *RankBTC* variables measured by descending ranks where the highest value of RSME in year t is ranked as 0 and the lowest value of RSME in year t is ranked as n-1 (in this case n is the number of industries in year t). As Atwood et al. (2010), we then scaled the rankings with n-1 to rank it between 0 and 1. The greater *RankBTC,* the higher level of BTC. Conversely, the smaller *RankBTC,* the lower level of BTC.

Research Model

The model in this study is developed from Frank et al. (2009). Different from Frank et al. (2009), we examines the relationship between tax reporting aggressiveness and financial reporting aggressiveness by using 2SLS. Because of there are indications of endogeneity problem, the using OLS can provide biased results. There is the basic model used in this study:

$$DTAX_{it} = \beta_0 + \beta_1 DFIN_{it} + \beta_2 PTROA_{it} + \beta_3 NOL\_D_{it} + \beta_4 LEV_{it} + \beta_5 SIZE_{it} + \varepsilon_{it} \quad (4)$$

$DFIN_{it} = \beta_0 + \beta_1 DTAX_{it} + \beta_2 \Delta PTCFO_{it} + \beta_3 SIZE_{it} + \varepsilon_{it}$ (5)

where:

$PTROA_{it}$ = Pre-tax book income for firm i in year t divided by average total assets year t and t-1.

NOL_D_{it} = Dummy variable, where "1" if the NOL carryforwards for firm i in year t-1 is greater than 0, and "0" for otherwise.

LEV_{it} = Total debt firm i in year t divided by average total assets year t and t-1.

$\Delta PTCFO_{it}$ = Change in operating cash flows before income tax paid for firm i between year t and t-1 divided by the average total assets of year t and t-1.

$SIZE_{it}$ = Natural log of total assets for firm i in year t.

In equation (4) and (5), we included control variables associated with the incentive to tax plan ($PTROA_{it}$, NOL_D_{it}, and LEV_{it}), the incentive to manage earnings ($\Delta PTCFO_{it}$), and firm size ($SIZE_{it}$). However, to ensure their endogeneity problem, this study did endogeneity test and Granger causality test first. Based on the results of endogeneity test, it is known that there is endogenous problem in the relationship between tax reporting aggressiveness and financial reporting aggressiveness. However based on Granger causality test results in Table 4, we know that there is no causality relationship between tax reporting aggressiveness and financial reporting aggressiveness. In this case, only tax reporting aggressiveness that affects on financial reporting aggressiveness, but not otherwise.

Table 4
Granger Causality Test Results

Null Hypothesis	F-statistics	Prob.
$DFIN_{it}$ does not Granger cause $DTAX_{it}$	0,481	0,619
$DTAX_{it}$ does not Granger cause $DFIN_{it}$	0,059	0,059**

Notes:
****, **, *** are significant at the 90%, 95%, 99% confidence level.***
$DFIN_{it}$ is discretionary accruals for form i in year t. $DTAX_{it}$ is discretionary permanent difference for firm i in year t.

Because of any endogeneity problem, this research will solve it by using 2SLS. Equation (4) is the first-stage regression that estimates the predicted value of tax reporting aggressiveness (*DTAX*). Equation (5) is the second-stage regression that estimates the relation between predicted tax reporting aggressiveness (*PDTAX*) and financial reporting aggressiveness (*DFIN*). The estimation results of equations (4) and (5) are presented in Table 5. Table 5 Panel A shows the first-stage of regression and Table 5 Panel B shows the second-stage of regression.

In Table 5 Panel B it is known that tax reporting aggressiveness is positively and significantly affects financial reporting aggressiveness. These results support previous research that firms have the opportunity to making financial reporting aggressiveness and tax reporting aggressiveness in the same period (Desai, 2002; Manzon & Plesko, 2002; Mills et al., 2002; Boynton et al., 2005; Hanlon et al ., 2005; Frank et al., 2009). These results may be supported by the level of investor protection in Indonesia that relatively lower than other countries (Claessens & Yurtoglu, 2013; Doidge, et al., 2007; Klapper & Love, 2004; Mitton, 2002; Claessens et al., 2000).

Table 5
Relationship between Tax Reporting Aggressiveness and Financial Reporting Aggressiveness (2SLS)

$$DTAX_{it} = \beta_0 + \beta_1 DFIN_{it} + \beta_2 PTROA_{it} + \beta_3 NOL\_D_{it} + \beta_4 LEV_{it} + \beta_5 SIZE_{it} + \varepsilon_{it} \quad (4)$$

$$DFIN_{it} = \beta_0 + \beta_1 PDTAX_{it} + \beta_2 \Delta PTCFO_{it} + \beta_3 SIZE_{it} + \varepsilon_{it} \quad (5)$$

Panel A: First-stage	
	Coefficient
Intercept	-0,018
$DFIN_{it}$	0,106***
$PTROA_{it}$	0,125***
NOL_D_{it}	-0,008
LEV_{it}	-0,004
$SIZE_{it}$	0,001
Observation	1.212
Adjusted-R^2	11,4%
Panel B: Second-stage	
	Coefficient
Intercept	-0,589***
$PDTAX_{it}$	4,662***
$\Delta PTCFO_{it}$	-0,226***
$SIZE_{it}$	0,021***
Observation	1.212
Adjusted-R^2	88,7%

Notes:
, **, * are significant at the 90%, 95%, 99% confidence level.*
The dependent variable in the Panel A is $DTAX_{it}$ that measured by discretionary permanent difference for firm i in year t. The dependent variable in the Panel B is $DFIN_{it}$ that measured by discretionary accruals for firm i in year t. $PDTAX_{it}$ is predicted value in equation (4) for firm i in year t. $PTROA_{it}$ is pre-tax book income for firm i in year t divided by average total assets in year t and t-1. NOL_D_{it} is dummy variable, where "1" if the NOL carryforwards for firm i in year t-1 is greater than 0, and "0" for otherwise. LEV_{it} is total debt firm i in year t divided by average total assets in year t and t-1. $\Delta PTCFO_{it}$ is change in operating cash flows before income tax paid for firm i between year t and t-1 divided by the average total assets of year t and t-1. $SIZE_{it}$ is a natural log of total assets for firm i in year t.

To testing H_1, equation (5) was developed to show how the relationship between tax reporting aggressiveness and financial reporting aggressiveness across level of BTC. The following is the equation used:

$$DFIN_{it} = \beta_0 + \beta_1 PDTAX_{it} + \beta_2 SBTC_{it} + \beta_3 PDTAX_{it} * SBTC_{it} + \beta_4 \Delta PTCFO_{it} + \beta_5 SIZE_{it} + \varepsilon_{it} \quad (6)$$

where:

$PDTAX_{it}$ = Predicted value in equation (4) for firm i in year t.

$SBTC_{it}$ = Dummy variable, where "1" is firm with low level of BTC, and "0" for otherwise.

According to H_1, we predict that firm with low level of BTC has opportunity to prepare financial reporting aggressiveness and tax reporting aggressiveness in the same period (Desai, 2002; Manzon & Plesko, 2002; Mills et al., 2002; Boynton et al., 2005; Hanlon et al., 2005; Frank et al., 2009). Meanwhile, firm with high levels of BTC are likely to face trade-offs when

making financial reporting and tax reporting (Shackelford and Shevlin, 2001). Therefore, we predicts that coefficient β_3 in equation (6) is positive and significant.

RESULTS

Descriptive Statistics

In Table 6 Panel A is known that mean of $DFIN_{it}$ is 0,004 and its median is 0,006. It indicates that most of firms in the samples are financial reporting aggressiveness. The mean of $PDTAX_{it}$ is -0,001 and its median is -0,002. It indicates that most of firms in the sample are less aggressive in tax reporting. Nevertheless, the maximum value of $PDTAX_{it}$ indicates that there are still firm that report taxes aggressively. The mean of $\Delta PTCFO_{it}$ and $SIZE_{it}$ are 0,009 and 28,463. While the mean and median of $SBTC_{it}$ is 0,573 and 1,000. It indicates that 57.3% of firms in industries with low level of BTC.

In Table 6 Panel B is known that mean of $DTAX_{it}$ in the high level of BTC is significantly different from mean of $DTAX_{it}$ in the low level of BTC. In this case, firms with high level of BTC are more likely to make tax reporting aggressively than firms with low level of BTC. In Table 6 Panel B is also known that the mean of $DFIN_{it}$ in the high level of BTC is significantly different from the mean of $DFIN_{it}$ in the low level of BTC. Firms with high level of BTC are more likely to make financial reporting aggressively than firms with low level of BTC.

Table 6 Panel C shows the relationship between variables used in this study. $PDTAX_{it}$ is positively and significantly correlated with $DFIN_{it}$. This is an early indication that the greater tax reporting aggressiveness, the greater financial reporting aggressiveness. However, we still need to test its relations to find out how the influence of tax reporting aggressiveness on financial reporting aggressiveness.

Table 6
Descriptive Statistics and Pearson Correlation

Panel A: Descriptive Statistics

	$DFIN_{it}$	$PDTAX_{it}$	$\Delta PTCFO_{it}$	$SIZE_{it}$	$SBTC_{it}$
Mean	0,004	-0,001	0,009	28,463	0,537
Median	0,006	-0,002	0,007	28,451	1,000
Maximum	0,679	0,131	0,985	33,199	1,000
Minimum	-0,767	-0,179	-1,514	22,758	0,000
Std. Dev.	0,109	0,022	0,130	1,668	0,499

Panel B: $DTAX_{it}$ and $DFIN_{it}$ across Level of BTC

	Mean		*Sig. F-test*
	$SBTC_{it}$ = 1	$SBTC_{it}$ = 0	
$DTAX_{it}$	-0,004	0,002	p < 0,01***
$DFIN_{it}$	0,000	0.008	p < 0,01***

Panel C: Pearson Correlation

	$DFIN_{it}$	$PDTAX_{it}$	$\Delta PTCFO_{it}$	$SIZE_{it}$	$SBTC_{it}$
$DFIN_{it}$	1,000				
$PDTAX_{it}$	**0,766**[a]	1,000			
$\Delta PTCFO_{it}$	**-0,472**	**-0,190**	1,000		
$SIZE_{it}$	-0,006	**-0,085**	-0,028	1,000	
$SBTC_{it}$	-0,039	-0,014	0,005	0,001	1,000

Notes:
[a] Bold show the significant correlation.
$DFIN_{it}$ is discretionary accruals for firm i in year t. $PDTAX_{it}$ is predicted value in equation (4) for firm i in year t. $\Delta PTCFO_{it}$ is change in operating cash flows before income tax paid for firm i between year t and t-1 divided by the average total assets of year t and t-1. $SIZE_{it}$ is a natural log of total assets for firm i in year t. $SBTC_{it}$ is dummy variable, where "1" if firm with low level of BTC, and "0" for otherwise.

Regression Analysis

In Table 7 Panel A, the result of univariate test is show that $PDTAX_{it}$ has a positive and significant effect on $DFIN_{it}$ either at high level of BTC or low level of BTC. Although in Table 6 Panel B is known that firms with high level of BTC are more likely to make tax reporting aggressiveness and financial reporting aggressiveness, but in Table 7 Panel A is well known that the impact of $PDTAX_{it}$ on $DFIN_{it}$ in the low level of BTC is more positive and significant than in high level of BTC. The adjusted-R^2 of firms with low level of BTC is greater than firms with high level of BTC. This is an early indication that firms with low level of BTC more weaken trade-offs between tax reporting aggressiveness and financial reporting aggressiveness than firms with high level of BTC, consistent with H_1.

In Table 7 Panel B, we tested whether different level of BTC had an significant effect on the relationship between tax reporting aggressiveness and financial reporting aggressiveness. Table 7 Panel B column (1) shows that the coefficient $PDTAX_{it}$* $SBTC_{it}$ (β_3) has a positive and significant effect on $DFIN_{it}$. In accordance with predictions, firm with low level of BTC more weakened trade-offs between tax reporting aggressiveness and financial reporting aggressiveness than firms with high level of BTC levels. This is supported by the value of β_1 (firm with high level of BTC) which is smaller and significant than the value of $\beta_1+\beta_3$ (firm with low level of BTC) on Wald-test. Thus, H_1 is proven. These results support previous research. According to Shackelford and Shevlin (2001), the trade-offs of tax reporting and financial reporting faced by managers occur because apply the high BTC level. In otherwise, managers that do not face trade-offs occur because apply low BTC level (Desai, 2002; Manzon & Plesko, 2002; Mills et al., 2002; Boynton et al., 2005; Hanlon et al., 2005; Frank et al., 2009).

Because of BTC level are measured at industry level, this study also includes industry dummy variables to ensure that differential impact of tax reporting aggressiveness on financial reporting aggressiveness across different level of BTC are not caused by industrial factors. Table 7 Panel B column (2) shows that the coefficient $PDTAX_{it}$*$SBTC_{it}$ (β_3) still has a positive and significant influence on $DFIN_{it}$, although it has been controlled by industrial dummy variable. Thus, H_1 is proven.

Table 7
Relationship between Tax Reporting Aggressiveness and Financial Reporting Aggressiveness across Level of BTC

$$DFIN_{it} = \beta_0 + \beta_1 PDTAX_{it} + \beta_2 SBTC_{it} + \beta_3 PDTAX_{it} * SBTC_{it} + \beta_4 \Delta PTCFO_{it} + \beta_5 SIZE_{it} + \varepsilon_{it} (6)$$

Panel A: Univariate Test

	Sign	Subsample	
		$SBTC_{it}$ = 1	$SBTC_{it}$ = 0
$PDTAX_{it}$	+	3,996***	3,548***
Observation		651	561
Adjusted R^2		64,3%	48,4%
Sig. F-test	$PDTAX_{it}$ (1) = $PDTAX_{it}$ (0)	p < 0,001***	

Panel B: Multivariate Test

	Sign	(1)	(2)
Intercept	?	0,153***	0,190***
$PDTAX_{it}$	+/-	3,281***	3,254***
$SBTC_{it}$	?	-0,005*	-0,011***
$PDTAX_{it}$*$SBTC_{it}$	+ (H_1)	0,447***	0,519***
$\Delta PTCFO_{it}$		-0,283***	-0,284***
$SIZE_{it}$		-0,005***	-0,005***
Dummy Industri		No	Yes
Observation		1.212	1.212
Adjusted R^2		70,3%	71,0%
Wald-test:			
β_1=β_1+β_3		p < 0,01***	p < 0,01***

***Notes**:*
, **, * are significant at the 90%, 95%, 99% confidence level.*
The dependent variable is $DFIN_{it}$ that measured by discretionary accruals for firm i in year t. $PDTAX_{it}$ is predicted value in equation (4) for firm i in year t. $\Delta PTCFO_{it}$ is change in operating cash flows before income tax paid for firm i between year t and t-1 divided by the average total assets of year t and t-1. $SIZE_{it}$ is a natural log of total assets for firm i in year t. $SBTC_{it}$ is dummy variable, where "1" if firm with low level of BTC, and "0" for otherwise.

Robustness Check

As explained before, we also conducts robustness checks to ensure that the results in Table 7 are robust. In this case, we replaces $SBTC_{it}$ variable with $RankBTC_{it}$. The larger *RankBTC,* the higher level of BTC. Conversely, the smaller *RankBTC,* the lower level of BTC. Thus, equation (6) is modified as follows:

$$DFIN_{it} = \beta_0 + \beta_1 PDTAX_{it} + \beta_2 RankBTC_{it} + \beta_3 PDTAX_{it} * RankBTC_{it} + \beta_4 \Delta PTCFO_{it} + \beta_5 SIZE_{it} + \varepsilon_{it} (7)$$

where:

$RankBTC_{it}$ = Ranking of BTC for firm i in year t .

In accordance with H_1, we predict that the coefficient β_3 in equation (7) is negative and significant. In the higher level of BTC, firm tend to faced trade-offs when making financial

reporting and tax reporting (Shackelford & Shevlin, 2001). Conversely, in the lower level of BTC, firm tends to making financial reporting aggressiveness and tax reporting aggressiveness in the same period (Desai, 2002; Manzon & Plesko, 2002; Mills et al., 2002; Boynton et al., 2005; Hanlon et al. , 2005; Frank et al., 2009). Table 8 columns (1) and (2) show that the coefficient $PDTAX_{it}$*$RankBTC_{it}$ (β_3) is negative and significant effect on $DFIN_{it}$. These results are consistent with the results presented in Table 7 of Panel B columns (1) and (2). Thus, the model is robust and supports H_1.

Table 8
Robustness Check: Relationship between Tax Reporting Aggressiveness and Financial Reporting Aggressiveness across Level of BTC

$$DFIN_{it} = \beta_0 + \beta_1 PDTAX_{it} + \beta_2 RankBTC_{it} + \beta_3 PDTAX_{it} * RankBTC_{it} + \beta_4 \Delta PTCFO_{it} + \beta_5 SIZE_{it} + \varepsilon_{it} (7)$$

	Sign	(1)	(2)
Intercept	?	0,145***	0,172***
PDTAX$_{it}$	+/-	3,862***	3,909***
RankBTC$_{it}$	?	0,004	0,015*
PDTAX$_{it}$*RankBTC$_{it}$	- (**H$_1$**)	-0,740***	-0,834***
ΔPTCFO$_{it}$		-0,282***	-0,283***
SIZE$_{it}$		-0,005***	-0,005***
Dummy Industry		No	Yes
Observation		1.212	1.212
Adjusted R^2		70,3%	71,0%
Wald-test:			
β_1=β_1+β_3		p < 0,01***	p < 0,01***

***Notes**:*
, **, * are significant at the 90%, 95%, 99% confidence level.*
The dependent variable is $DFIN_{it}$ that measured by discretionary accruals for firm i in year t. $PDTAX_{it}$ is predicted value in equation (4) for firm i in year t. $\Delta PTCFO_{it}$ is change in operating cash flows before income tax paid for firm i between year t and t-1 divided by the average total assets of year t and t-1. $SIZE_{it}$ is a natural log of total assets for firm i in year t. $RankBTC_{it}$ is ranking of BTC for form i in year t.

CONCLUSION

This study was conducted to fill the gap of previous studies. Different from Frank et al. (2009) and Lennox et al. (2013), this study considers endogeneity problem to minimize biased results. This study was also examine the relationship between tax reporting aggressiveness and financial reporting aggressiveness across different level of BTC. Using the companies listed on the Indonesia Stock Exchange, this study found that there is endogeneity problem in the relationship between tax reporting aggressiveness and financial reporting aggressiveness, but no causality relationship. In this case, only tax reporting aggressiveness that affects financial reporting aggressiveness, but not otherwise. In accordance with the predictions, this study also found that firm with a low level of BTC is more weakened trade-offs between tax reporting aggressiveness and financial reporting aggressiveness than firm with high level of BTC. These results are consistent either with or without include the industry dummy. These results support previous research.

This study has several limitations. First, the period research used is quite short. Second, the proxy of tax reporting aggressiveness and financial reporting aggressiveness used in this study is very limited. For further research is expected to add the period to get better results. In addition, next research is expected to use some proxy for tax reporting aggressiveness and financial reporting aggressiveness, for generalization purposes. Finally, further research is

expected to consider the role of corporate governance on the relationship between tax reporting aggressiveness and financial reporting aggressiveness.

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