

# The relationship between book-tax differences and earnings growth within Indonesian manufacturing firms

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## Abstract

Previous studies have investigated the relationship between book-tax differences and earnings growth. However, prior studies provide mix results pertaining to the relationship between these two constructs. This study investigates the relationship between book-tax differences and earnings growth within manufacturing firms in Indonesia. In this study, book-tax differences were measured by two different components; i.e., permanent differences and temporary differences, while earnings growth was measured by changes in pretax income and changes in net income. Meanwhile, size of firm, return on asset, operating cash flows and accrual income served as control variables. The sample of this study comprises of manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the years 2010 - 2014. This study focuses on listed companies from manufacturing industry to reduce the effect of industry differences. The criteria applied in the sample selection: the targeted sample is non-regulated companies and is listed IDX in 2010 – 2014, yielding a sample of 390 firm-year observations from the fiscal years 2010 to 2014. The results show that permanent book-tax difference is positively and significantly associated with change of pre-tax income, while temporary book-tax difference is negatively and significantly related to change of pre-tax income. The results further indicate that permanent book-tax difference is positively and significantly associated with change of net income, while temporary book-tax difference is negatively and significantly related to change of pre-tax income.

**Keywords:** book-tax differences, earning growth, Indonesian manufacturing firms

## 1. Introduction

Literature highlights the important of study pertaining to the relationship between book-tax differences and earnings quality. Accordingly, numerous studies have investigated the relationship between book-tax differences and earnings quality. For example, Phillips et al. (2003) investigate the ability of book-tax differences in detecting earnings management, and found that book-tax differences are able to provide information pertaining to earnings management. Lev and Nissim (2004) also examine the ability of book-tax differences in indicating earnings growth. Distinguishing book-tax differences into three components, the authors find that the book-tax differences is able to predicts future changes in earnings. Likewise, Hanlon (2005) investigate the ability of book-tax differences to predict the persistence of earnings for one-year-ahead earnings. The author finds that book-tax differences are good indicator for predicting the persistence of earnings. In particular, it was found that the higher the book-tax differences, the lower the earnings persistence.

Despite this widespread attention, studies' focusing on determinants of book-tax differences and its effects towards the persistence of earning in developing countries is limited. Current studies seem to focus more on the determinants of book-tax differences and its effects towards the persistence of earning in developed countries. In fact, developing and developed countries are different in term of their economy and society (Hofstede and Hofstede, 2004). Developing countries are characterized by weaker capital markets, limited regulatory enforcement, and more concentrated ownership. In particular, developing and developed countries are substantially different in term of their accounting standards. Such a condition leads to greater information asymmetry and makes it difficult for investors in assessing a firm performance and makes a rational investment decision (Ismail et al., 2011).

Previous studies have investigated the relationship between book-tax differences and earnings growth. However, these studies provide mix results pertaining to the relationship between these two constructs. For instance, Lev and Nissim (2004) examine the relationship between temporary book-tax differences and earnings growth. In this perspective, the authors find that temporary book-tax differences and earnings growth are not related. Hanlon (2005) also examine the relationship involving temporary book-tax differences and earnings growth, and finds a negative relationship between book-tax differences and earnings growth. In other words, firms with large temporary book-tax differences exhibit less earnings persistence.

This study investigates the relationship between book-tax differences and earnings quality within manufacturing firms in Indonesia. Considering earnings quality is an unobservable construct, literature has proposed a variety of proxies for earnings quality. For the purpose of this study, the persistence of earnings was utilized to measure the earnings quality. This study focuses on the manufacturing industry to reduce the effect of industry differences (Ahmad et al., 2015). The results of this study would provide more insight pertaining to the relationship between two components of book-tax differences and changes in pre-tax income and net income. The rest of the paper proceeds as follows. Section 2 provides a review of the relevant literature and hypotheses development. Section 3 describes the research methodology. Section 4 discusses the results. Section 5 offers conclusions.

## **2. Literature review and hypothesis development**

### **2.1 Book Tax Differences**

Book-tax differences in general could be referenced as the differences between financial statement income and federal taxable income (Moore, 2012). Book-tax differences arise because financial statement income is intended to assess the company's performance, while federal taxable income is intended to calculate the amount of tax to be paid. Book-tax differences are generally divided into two, namely the permanent differences and temporary differences. Permanent differences arise from income and expenses transactions that are recognized by accounting principles but not by tax rules, whereas temporary differences are caused by the difference in recognition time between the accounting principles and rules (Huang and Wang, 2013).

Several previous studies have addressed the presence of book-tax differences; suggesting that the measure is able to reflect the earnings quality. Referring to Jackson (2011), accounting rules provide more flexibility in presenting the financial statements relative to the tax laws. The author suggests that the higher the difference between accounting income and taxable income, the lower the earnings quality. Jackson (2011) further emphasizes the importance of investigating the book-tax differences and its ability to predict future earnings. The author points out that additional work is needed to provide more understanding pertaining to the relationship between book-tax difference and changes in earnings as well as the role of taxable income to determine the firm value.

#### **2.1.1 Temporary differences**

Temporary differences occur when both accounting rules and tax laws recognize the same amount of transaction, yet, they differ pertaining to the time of this recognition. A transaction might be recognized by accounting principles, but not by tax rules; or vice versa (Sonnier et al., 2012). This difference is temporary because it will be identified in the next accounting period. In other words, all transactions actually are recognized by the accounting and tax systems and are equal but they differ pertaining to their time of allocation. Temporary differences are usually caused by the differences in the methods used by the rules of accounting and tax rules, in terms of accrual and realization, depreciation and amortization, inventory valuation, and loss compensation calculations (Noor et al., 2009).

#### **2.1.2 Permanent differences**

According to Martinez and de Souza (2012), permanent differences are happening because of the recognition differences between accounting rules and tax regulations pertaining to certain incomes and expenses. Permanent differences arise when certain incomes and expenses are recognized by accounting principles, but not by tax regulations; or vice versa. Permanent differences generate permanent differences between accounting income and taxable income. Permanent differences usually arise because tax laws require that some transactions are not included in the calculation of taxable income. According to the Income Tax Law, some of the items that are permanent differences are final income tax (Article 4 paragraph 2), non taxable object (Article 4 paragraph 3), and the expenses that are not allowed to be gross income (Article 9 paragraph 1).

### **2.2 Earnings persistence**

Penman and Zhang (2002) distinguish earnings into two groups: sustainable earnings (earnings persistence or core earnings) and unusual earnings (transitory earnings). Earnings persistence is repeatedly generated income in the long term. Therefore, earnings persistence can be used as an indicator of future earnings. Meanwhile, transitory earnings are temporary generated income and are non-repeating income. Therefore, these types of earnings cannot be used as an indicator of future earnings. The persistence of earnings, together with the quality of accruals and smoothness, is a measure of earnings quality (Tang and Firth, 2012). According to Ecker et al.

(2006), earnings quality is a measure of information risk and is defined as “the mapping of current accruals into current, last year and next year cash flows”. Sustainable earnings persistence represents a high quality of earning (Dechow and Dichev, 2002).

Francis et al. (2004) classified attributes of earnings into two: accounting-based attributes and market-based. Accounting-based attributes of earnings include persistence, predictability, accrual quality, and smoothness; while market-based attributes of earnings encompass value relevance, conservatism, and timeliness. Nichols and Wahlen (2004) have link accounting earnings to stock returns. According to the authors, the link between accounting earnings to stock returns could be explained by the following arguments. First, financial reporting is able to provide shareholders with information pertaining to the firms' profitability; second, firms' profitability is able to provide information to shareholders pertaining to the dividends; and third, firms' stock price represents the future dividends. Tucker and Zarowin (2006) measure earnings persistence using earnings per share approach. In particular, the authors estimate the relationship between current and future earnings using the interaction between earnings per share and income smoothing. If the income smoothing improves the quality of earnings information, then the relationship between current and future earnings would be persistent. Given this, this study present working hypothesis in alternative form:

Hypothesis 1: Permanent book-tax differences is positively related to pretax income growth

Hypothesis 2: Temporary book-tax differences is negatively related to pretax income growth

Hypothesis 3: Permanent book-tax differences is positively related to net income growth

Hypothesis 4: Temporary book-tax differences is negatively related to net income growth

### 3. Research methodology

#### 3.1 Sample

The sample of this study comprises of manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the years 2010 - 2014. This study focuses on listed companies from manufacturing industry to reduce the effect of industry differences. The criteria applied in the sample selection: the targeted sample is non-regulated companies and is listed IDX in 2010 – 2014. This sample selection procedure yields a sample of 390 firm-year observations from the fiscal years 2010 to 2014.

#### 3.2 Variable measurement

##### 3.2.1 Dependent variable

This study uses earnings growth ( $\Delta NI$ ) as the dependent variable. Following Jackson (2009), this variable is defined as change in net income before extraordinary items obtained from the income statement.

$$\Delta NI = \frac{NI_{it+1} - NI_{it}}{\text{average total assets}}$$

in which:

$\Delta NI$  = changes in net income

$NI_{it+1}$  = net income of firms  $i$  in year  $t + 1$

$NI_{it}$  = net income of firms  $i$  in year  $t$

To examine the relationship between book-tax difference and earnings growth, this study utilized pretax income as the second dependent variable. Referring to Hanlon (2005), changes in pretax income is measured as follows.

$$\Delta PI = \frac{PI_{it+1} - PI_{it}}{\text{average total assets}}$$

in which:

$\Delta PI$  = changes in pretax income

$PI_{it+1}$  = pretax income of firms  $i$  in year  $t + 1$

$PI_{it}$  = pretax income of firms  $i$  in year  $t$

##### 3.2.2 Independent variable

The independent variable of this study is book-tax differences. In particular, this study utilized two different measures as follows:

*Permanent book-tax differences*

Permanent differences arise when certain incomes and expenses are recognized by accounting principles, but not by tax regulations; or vice versa. Permanent differences generate permanent differences between accounting income and taxable income. Permanent differences usually arise because tax laws require that some transactions are not included in the calculation of taxable income (Martinez and de Souza, 2012).

#### *Temporary book-tax differences*

Temporary differences occur when both accounting rules and tax laws recognize the same amount of transaction, yet, they are differ pertaining to the time of this recognition. A transaction might be recognized by accounting principles, but not by tax rules; or vice versa. Temporary differences are usually caused by the differences in the methods used by the rules of accounting and tax rules, in terms of accrual and its realization, depreciation and amortization, inventory valuation, and loss compensation calculations (Jackson, 2009).

### 3.2.2 Independent variable

This study includes four control variables that are frequently used in previous studies to control for other relevant variables influencing discretionary accruals (Lev and Nissim, 2004; Jackson, 2009). These four control variables are size of firm, return on asset, operating cash flows, and accrual income.

#### *Size of firm*

The first control variable included in the model is size of firm. This variable is used to control the likely impact of firm size on the persistence of earnings. Manzon and Plesko (2002) claimed that size of firm is able to provide “noise” effect on the persistence of earnings.

#### *Return on asset*

Return on assets, defined as a firm' net income divided by its total assets, is one of the profitability ratios utilized to measure a firms' ability to generate earnings using its existing total assets. Return on assets is a potential factor that influences the persistence of earnings (Lev and Nissim, 2004).

#### *Operating cash flows*

Operating Cash Flow (OCF) could be referenced as the amount of cash arising from a firm operations relating to the revenue, expenses, income and expenses. OCF illustrates how companies gain earnings and convert it into cash. Penman (2001) suggest that earnings persistence is also determined by the components of cash flow contained in the current earnings

#### *Accrual income*

Accrued income (AI) is earned income or other revenue by a company during a specified accounting period that has to be received yet. Accrued income is also acknowledged as a determinant of earnings persistence (Penman, 2001).

### 3.3 Estimation models and regression formula

In addition to conduct a number of univariate tests, this study employed a multiple regression analysis (MRA) to examine the relationship between book-tax differences and earnings growth. For this reason, this study regress changes in earnings growth on variables indicating permanent and temporary book-tax differences and four control variables. Specifically, this study estimates the coefficients of the following regression model:

$$\Delta PTI_{it} = \beta_0 + \beta_1 PBDT_{it} + \beta_2 TBTD_{it} + \beta_3 SIZE_{it} + \beta_4 ROA_{it} + \beta_5 OCF_{it} + \beta_6 AEF_{it} + e_i \quad \dots (1)$$

$$\Delta NI_{it} = \beta_0 + \beta_1 PBDT_{it} + \beta_2 TBTD_{it} + \beta_3 SIZE_{it} + \beta_4 ROA_{it} + \beta_5 OCF_{it} + \beta_6 AEF_{it} + e_i \quad \dots (2)$$

in which:

$\Delta PTI_{it}$  = Change of pretax income of firms  $i$  in year  $t$

$\Delta NI_{it}$  = Change of net income of firms  $i$  in year  $t$

$PBDT_{it}$ = Permanent book-tax difference of firms  $i$  in year  $t$

$TBTD_{it}$ = Temporary book-tax difference of firms  $i$  in year  $t$

$SIZE_{it}$  = Size of firms  $i$  in year  $t$

$ROA_{it}$  = Return on asset of firms  $i$  in year  $t$

$OCF_{it}$  = Operating cash flow of firms  $i$  in year  $t$

$AIF_{it}$  = Accrual income of firms  $i$  in year  $t$

$e_i$  = standard error

#### 4. Results and discussion

##### 4.1 Book-tax differences and pre-tax income change

The results presented in Table 1 show that permanent book-tax difference ( $\beta=0.344$ ;  $p<0.01$ ) is positively and significantly associated with change of pre-tax income. This result is consistent with previous studies (e.g., Jackson, 2009; Lev and Nissim, 2004) who found that permanent book-tax difference has a positive relationship with  $\Delta$ PTI. The results, further show that temporary book-tax difference ( $\beta=0.344$ ;  $p<0.01$ ) is negatively and significantly related to change of pre-tax income. This result is in line with Jackson (2009) who found that temporary book-tax difference is negatively related to earnings before taxes. Researchers such as Sloan (1996) and Hanlon (2005) hold that companies with large temporary book-tax difference tend to have earnings that are not persistent. This negative coefficient value is the impact of the reversal of temporary book-tax difference in the future so that the temporary book-tax difference has a negative relationship with  $\Delta$ PTI.

Table 1  
 The result of MRA (dependent variable –  $\Delta$ PTI)

Variable	Coefficient	t-statistic	VIF
Intercept	0,310***	3.06	1.62
PBTD	0.344***	3.17	1.29
TBTD	-0.381***	-3.34	1.48
SIZE	0.102	1.10	1.42
ROA	-0.109	-1.14	1.28
OCF	0.214**	2.55	1.37
AI	0.221**	2.78	1.69
Adjusted R-Squared	0.546		
F-value	22.556		
p-value	0.000		
Durbin-Watson	3.392		

Note:

PBTD – permanent book-tax differences; TBTD – temporary book-tax differences; SIZE – firm size; ROA – rate of return; OCF – operating cash flow; AI – accrual income; \*\*\*: significant at the level of 0.01; \*\*: significant at the level of 0.05.

##### 4.2 Book-tax differences and net income change

The results presented in Table 2 show that permanent book-tax difference ( $\beta=0.340$ ;  $p<0.01$ ) is positively and significantly associated with change of net income. This result is consistent with previous studies (e.g., Jackson, 2009; Lev and Nissim, 2004) who found that permanent book-tax difference has positive relationship with change of net income. This relationship indicates that the permanent book-tax difference is dominated by items that will be added in the fiscal reconciliation: i.e., non deductible tax burden or subsidiaries loss. Furthermore, the results show that temporary book-tax difference ( $\beta=0.368$ ;  $p<0.01$ ) is negatively and significantly related to change of pre-tax income. This result is in line with Jackson (2009) who found that temporary book-tax difference is negatively related to net income changes. Literature suggests that the effects of temporary book-tax difference will appear on the load or deferred tax benefit. In other words, temporary book-tax difference is future deductible temporary differences.

Table 2  
 The result of MRA (dependent variable –  $\Delta NI$ )

Variable	Coefficient	t-statistic	VIF
Intercept	0,321***	3.27	1.27
PBTD	0.340***	3.36	1.71
TBTD	-0.368***	-3.92	1.29
SIZE	0.217**	2.43	1.64
ROA	0.330***	3.30	1.44
OCF	0.221**	2.51	1.52
AI	0.248**	2.66	1.35
Adjusted R-Squared	0.517		
F-value	20.356		
p-value	0.000		
Durbin-Watson	3.250		

Note:

PBTD – permanent book-tax differences; TBTD – temporary book-tax differences; SIZE – firm size; ROA – rate of return; OCF – operating cash flow; AI – accrual income; \*\*\*: significant at the level of 0.01; \*\*: significant at the level of 0.05.

## 5. Conclusion

Previous studies have investigated the relationship between book-tax differences and earning persistence. However, previous studies provide mix results pertaining to the relationship between these two constructs. In addition, most of these studies were conducted in the developed countries. Little is known pertaining to the relationship in emerging economies such Indonesia. The purpose of this study is to examine the effect of book-tax differences on earnings growth within the Indonesian manufacturing companies listed on Indonesia Stock Exchange. In this study, book-tax differences were measured by two different components: permanent differences and temporary differences. Meanwhile earnings growth was measured by changes in pretax income and changes in net income. This study hypothesis that permanent differences positively related to changes in pretax income; and negatively associated with changes net income.

The sample of this study comprises of manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the fiscal years 2010 to 2014. This study focuses on listed companies from manufacturing industry to reduce the effect of industry differences. The results of this study indicate that permanent book-tax difference is positively and significantly associated with change of pre-tax income, while temporary book-tax differences is negatively and significantly related to change of pre-tax income. The results further show that permanent book-tax difference is positively and significantly associated with change of net income, while temporary book-tax difference is negatively and significantly related to change of pre-tax income. However, this study has limitations. First, the sample involved in this study only covers five years of Indonesian data, and second, this study does not include other economical factors on the figures related to earnings growth. Therefore, future research could include other factors that may affect the occurrence of earnings growth.

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