

Original Paper


<https://doi.org/10.15826/jtr.2023.9.3.151>



### Real Earnings Management Sine Qua Non Book-Tax Differences in Tax Avoidance of Mining Sector Companies in Indonesia

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#### ABSTRACT

This study aims to prove the effect of book income that can be manipulated through real earnings management activities on book-tax differences that appear to be interrelated but have not been widely studied. Researchers want to prove the coupling relationship (sine qua non) between real earnings management and book-tax differences based on rational choice theory as the main theory. Tests were conducted on 43 sample companies in the mining sector listed on the Indonesia Stock Exchange in 2018–2021. The analytical method used is panel data regression with the help of EViews (Econometric Views) version 12. The results prove that there is an effect of abnormal cash flow and abnormal discretionary expenses on book-tax differences, while abnormal production costs have no effect. Furthermore, the same result is also obtained when the reverse test is conducted, namely book-tax differences in real earnings management. The reciprocal test gives the result that book-tax differences affect abnormal operating cash flows and abnormal discretionary expenses but do not affect abnormal production costs. Meanwhile, the alignment of the reciprocal relationship between abnormal cash flow operations and abnormal discretionary expenses to book-tax differences shows the relationship (sine qua non) between real earnings management and book-tax differences. The contribution of this research proves that book-tax differences are the output of real earnings management, so the amount can be used as an indicator if a company manipulates earnings. Therefore, it is important for the government, especially the Directorate General of Taxes as a policymaker to start considering the amount of book-tax differences in a certain range that is permitted for companies. In addition, it can be followed up by issuing additional tax regulations if needed to minimize tax avoidance.

#### KEYWORDS

sine qua non, real earnings management, book-tax differences, mining companies, coupling


JEL G32; H26

УДК 336.62

### Взаимосвязь манипулирования реальными доходами и налоговыми разницами как индикатор уклонения от уплаты налогов компаниями горнодобывающего сектора в Индонезии

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#### АННОТАЦИЯ

Данное исследование направлено на то, чтобы доказать влияние бухгалтерского дохода, которым можно манипулировать с помощью деятельности по управлению реальными доходами, на налоговые разницы. Исследователи хо-

тят доказать взаимосвязь (непременное условие) между управлением реальными доходами и различиями в налоговых разницах, основываясь на теории рационального выбора в качестве основной теории. Тестирование было проведено на 43 выборочных компаниях горнодобывающего сектора, зарегистрированных на Индонезийской фондовой бирже в 2018–2021 гг. В качестве аналитического метода используется панельная регрессия данных с помощью EViews (Econometric Views) 12-й версии. Результаты доказывают, что существует влияние аномального денежного потока и аномальных дискреционных расходов на бухгалтерские налоговые разницы, тогда как аномальные производственные затраты не оказывают никакого влияния. Более того, тот же результат получается и при проведении обратного теста, а именно налоговые разницы возникают при управлении реальными доходами. Взаимный тест дает результат, что налоговые разницы влияют на аномальные операционные денежные потоки и аномальные дискреционные расходы, но не влияют на аномальные производственные затраты. Между тем, соответствие взаимной связи между аномальными операциями с денежными потоками и аномальными дискреционными расходами с бухгалтерскими налоговыми разницами показывает взаимосвязь (непременное условие) между управлением реальными доходами и балансовыми налоговыми разницами. Результаты этого исследования доказывают, что налоговая разница является результатом управления реальной прибылью, поэтому эту сумму можно использовать в качестве индикатора того, что компания манипулирует прибылью. Таким образом важно, чтобы правительство, особенно Главное налоговое управление как орган, определяющий налоговую политику, начали регламентировать сумму различий налоговых разниц в определенном диапазоне, который разрешен для компаний. Кроме того, за этим может последовать принятие дополнительных налоговых правил, если это необходимо для минимизации уклонения от уплаты налогов.

#### КЛЮЧЕВЫЕ СЛОВА

обязательное условие, управление реальной прибылью, бухгалтерские налоговые разницы, горнодобывающие компании, взаимосвязь

### 1. Introduction

In Indonesia, tax revenue is the largest contributor to state revenue. More than 70% of state revenue in the Indonesian State Budget (APBN) each year is from taxes [1].

In addition, the mining sector is one of the sectors that is expected to support tax revenue because the mining sector has great potential for tax revenue considering that Indonesia has a natural wealth of mining materials. However, when viewed from the Gross Domestic Product (GDP) and tax revenue, the contribution of the sector only reached 6.6% and 4.3% in 2020. This small contribution resulted in a tax coefficient from the mining sector of only 0.66% [2].

The small contribution to tax revenue can be caused by problems in the mining sector itself, such as the company's motivation to avoid taxes [3].

For example, PT Adaro Energy Tbk is one of the mining companies that was hit

by the issue of tax avoidance in 2019. The company is alleged to have transferred profits from its coal business to a subsidiary in Singapore called Coltrade Service International. Indications of tax avoidance were contained in a report by international NGO Global Witness published on July 4, 2019. The strategy of the parent company (PT Adaro) in Indonesia to sell coal from mining in Indonesia at a lower price to its subsidiary, Coltrade Services International (Singapore), allows the transfer of profits to the subsidiary, thus reducing the parent company's tax bill by USD125,000,000 in the period 2009–2017, or USD14,000,000 per year<sup>1</sup>.

In addition, indications of profit shifting through transfer pricing (TP) activities are carried out due to the motivation

<sup>1</sup> Thomas V.F. Dugaan Adaro Menghindari Pajak Mengingatkan pada Kasus Asian Agri. Available: <https://tirta.id/dugaan-adaro-menghindari-pajak-mengingatkan-pada-kasus-asian-agri-edHZ> (accessed: 17.10.2023).

to attract many investors and also the desire to report low taxes in order to reduce the company's burden. Another way, as one of the characteristics that attracts investors, is the tendency of company management to try to report high accounting profit (book income) in the capital market.

However, in addition, the company wants to minimize the amount of tax that must be paid by adjusting the amount of profit before tax (taxable income) in accordance with the company's financial condition.

The difference between book income and taxable income gives rise to the book-tax difference [4]. Book income arises from business transactions that refer to the Statement of Financial Accounting Standards (PSAK), while taxable income arises after fiscal reconciliation that refers to the Tax Law.

Therefore, taxable income that is lower than book income is an important point desired by management for tax planning purposes. This is because the company's net income will run opposite the taxable income rate. If net income increases, then taxable income is expected to be reported lower than the net income generated, so that the tax will be paid lower. The net income reported by management can be manipulated through earnings management, as has been proven by [5], which reveal that earnings management carried out by the company can result in an increase in the company's net profit and a decrease in taxable income.

In practice, earnings management can be done with two methods: accrual-based earnings management and real earnings management [6]. Real earnings management is an earnings management method that is often chosen by companies because it is more difficult to detect by auditors and tax authorities [7].

In the practice of real earnings management, companies manipulate earnings during the accounting period by arranging real activities, such as (1) sales manipulation, (2) manipulation by reducing discretionary spending, and (3) manipulation through the production process with excess production [8]. Thus, real earnings management activities have a direct im-

pact on current and future cash flows and are also more complicated to recognize for average investors as well as auditors or regulators [9].

If real earnings management manipulation succeeds in reducing taxable income, book-tax differences will automatically be manipulated. If book-tax differences are manipulated, it can be used as a tool for tax avoidance. However, there are not many studies that reveal the movement of real earnings management that will always affect the movement of book-tax differences, or vice versa. In general, previous studies directly linked real earnings management or book-tax differences with tax avoidance.

In order to prove the coupling between real earnings management and book-tax differences in this study, it is still necessary to test the reciprocity between book-tax differences and real earnings management. Testing book-tax differences against real earnings management is expected to provide mutually influencing results, so it will also prove that book-tax differences are actually the result of real earnings management, and book-tax differences cannot change if real earnings management does not change.

This test has not been conducted by previous researchers, so the purpose of proving the relationship between the two is to explain the nature of the coupling relationship (*sine qua non*), or maybe just the opposite, decoupling. The results of this study also provide support and evidence that Rational Choice Theory is relevant as a basis for choosing real earnings management decisions and book-tax differences. Real earnings management is proxied by three forms of real activities, namely operating cash flow, production costs, and discretionary expenses.

Furthermore, tax avoidance in this study is proxied by tax-effect book-tax differences, referring to [10]. The use of tax-effect book-tax differences is more appropriate when referring to tax conditions in Indonesia than income-effect book-tax differences because it can accommodate the corporate income tax rate imposed on mining sector companies.

*This study aims to prove the effect of book income that can be manipulated through real earnings management activities on book-tax differences that appear to be interrelated but have not been widely studied.*

*Research hypotheses:*

*H1: Real earnings management proxied by abnormal operating cash flow has a positive effect on book-tax differences as a form of tax avoidance.*

*H2: Real earnings management proxied by abnormal production costs has a positive effect on book-tax differences as a form of tax avoidance.*

*H3: Real earnings management proxied by abnormal discretionary expenses has a positive effect on book-tax differences as a form of tax avoidance.*

*H4: Tax avoidance with book-tax differences has a positive effect on abnormal operating cash flow which is a proxy for real earnings management.*

*H5: Tax avoidance with book-tax differences has a positive effect on abnormal production costs as a proxy for real earnings management.*

*H6: Tax avoidance with book-tax differences has a positive effect on abnormal discretionary expenses as a proxy for real earnings management.*

The results of this study can be used as a reference for the Directorate General of Taxes of Indonesia to develop regulations, make policies, and even as a basis for conducting tax audits of companies that are indicated to avoid taxes using real earnings management activities. This can be done by setting limits on the level of volatility of allowable book-tax differences in order to provide supervisory action against tax avoidance activities, especially through real earnings management in Indonesia.

## 2. Literature Review

### 2.1. The gap between book income and taxable income

Research conducted by [10] have proven that the gap between book income and taxable income reported (book-tax differences) is an indication of accounting and tax manipulation in financial statements.

Similarly, [11] proves that companies with strong incentives and prospects for earnings management and tax management have a high level of abnormal book-tax differences. The magnitude of abnormal book-tax differences indicates the level of management manipulation, which suggests that book-tax differences are a useful proxy for earnings management and tax management after controlling for accounting-tax misalignment.

The research of [12] shows that both corporate tax avoidance and free cash flow increase management's real earnings manipulation activities. Research by Geraldina's [13] found that the use of accrual earnings management and real earnings management can be mutually substitutable. Meanwhile, research [7] implies that to achieve the objectives of aggressive tax reporting and aggressive financial reporting in the same reporting period, managers use accrual-based earnings management tools and real transactions as a complement or substitute for each other.

Similarly, [14] prove that the mismatch between financial accounting standards and tax law results in discretion for the company's management to manipulate book income and taxable income in the same reporting period. Machdar [15] proves that abnormal operating cash flows and abnormal discretionary expenses in real earnings management affect tax avoidance. Kaldonski [16] also proves that real earnings management is basically a form of inflating profits that are already tax compliant.

This research is conducted to prove again the relationship between real earnings management and book-tax differences, so the researcher named the movement between real earnings management and book-tax differences as a coupling relationship. This is because book-tax differences and real earnings management will always affect each other and will not be able to stand alone, so if real earnings management changes, then book-tax differences will also change in the same direction, and vice versa.

The coupling relationship between real earnings management and book-tax

differences used for tax avoidance in this study can be reviewed using Rational Choice Theory. Real earnings management and book-tax differences can be a choice that is considered rational by the management of the company both to achieve personal and organizational goals. One of the goals that management wants to achieve is to get an award for being able to advance the company by scoring high profits and a small tax burden.

This phenomenon can also be considered rational by shareholders. If it is related to the return or value of benefits, then shareholders prefer tax avoidance because there is a transfer of the value of benefits from other countries to them [17]. Thus, management's decision to manipulate real earnings management, which will also manipulate book-tax differences, will always be done, which leads to corporate tax avoidance.

## **2.2. Rational Choice and Division of Labor**

Rational Choice Theory, hereafter referred to as RCT, is the main theory used in this study. RCT was first contained in [18] work entitled *The Wealth of Nations*.

Smith [18] and Emile [19] believed that work specialization is one of the most important concepts in social science, not only for economics but for the study of society and institutions in general. Smith's explanation of economic growth lies in the emphasis on work specialization or professionalism as a source of society's ability to increase its productivity. Furthermore, Smith argued that the background interest in economic usefulness is the most important motivator in economic activity as a consequence of free competition in the context of universal "natural law". The "invisible hand" occurs when work specialization develops, shapes, and intervenes in market institutions, expanding the relationship of endless resource exchange even across borders and encouraging effective cooperation. Thus, individuals, as actors of change, have the opportunity to determine preferences for decision-making in defense of economic gains [20].

Smith's theory finally provides implications for organizational policy makers by emphasizing two important features of an interdependent decision cycle, namely: first, policies that benefit the organization and achieve organizational sustainability [21]. Second, organizational characteristics are about how policies are developed and implemented and whether they are beneficial to the organization itself. Individuals (agents) as members of the organization have preferences that rationally refer to the ultimate goals of the organization, so that individual behavior patterns are actions based on rational choices that are influenced by the organizational environment in which they are located or external environmental pressures on the organization.

## **2.3. Rational Choice, Institutions and Managers (Human Agency)**

In the last decade, the widespread economic phenomena and issues that must be resolved by both economists and researchers have required them to broadly not only look from the side of economic and accounting numbers but also using social (human) methods and approaches, which are considered the most appropriate to address economic problems that have clearly involved social issues.

Boettke [22] argues that various issues due to economic imperialism are actually not sterile from social issues, so they cannot handle the fact that problems that occur in society or institutions are manifestations of social interaction. Consequently, individual actors naturally and rationally try to maintain their existence as a response to the social environment, which ultimately forms perceptions and choices in order to obtain individual or group benefits [23]. It is further argued that individuals are the source of institutions, meaning that individuals will naturally form both formal and informal structures based on their interests and benefits as members of the organization. This view implies that the institution or organization is a product of social interaction within it and, at the same time, an instrument for shaping individual preferences to act both

for individual interests and the interests of the institution or organization. For example, in the context of tax aggressiveness, managers deliberately make decisions to control behavioral costs to ensure the company's (financial) performance targets are achieved.

Theoretically, managers' opportunistic behavior is documented through earnings management as instrumental rationality, which is a strategy, technique, or tool (instrument) to prepare reporting on financial performance that precisely hides the company's actual performance for certain purposes [24]. Earnings management can be broadly categorized into three dimensions, namely accrual earnings management, real earnings management, and fraudulent accounting. On the one hand, managers manipulate the real activities of normal operations for tax savings or even avoidance. Minimizing the tax burden and accounting profit that remain high is the focus of the company's management. Accounting profit will increase when the company's tax burden is smaller. The management will do various things to achieve this goal by minimizing the risk of being detected by the tax authorities (Directorate General of Taxes) and auditors. Real earnings management is the most rational choice, according to management, to avoid taxes and maintain high profits. The rational

choice of management in the form of real earnings management or tax avoidance in the form of book-tax differences is both used to achieve the goal of increasing profits, which indirectly leads to minimizing the tax burden. When the practice of real earnings management increases, the book-tax differences will increase, and vice versa. The harmony of the relationship between real earnings management and book-tax differences means that these two things will run together or side by side (*sine qua non*).

However, manipulation of real activities actually provides information to stakeholders that the objectives of financial reporting have been met, whereas in fact, financial information is not of high quality [7]. Company management is a key actor in the application of real earnings management, meaning that management will continue to practice earnings management even though they know the potential to harm other parties (shareholders).

Reflecting on RCT, Scott [25] argues that subjective (individual) actions are generally based on the basic nature of humans as organic humans who always prioritize personal interests, and all actions will be considered rational when they believe they can realize the interests of other parties, including achieving the goals of group or organizational existence (Figure 1).

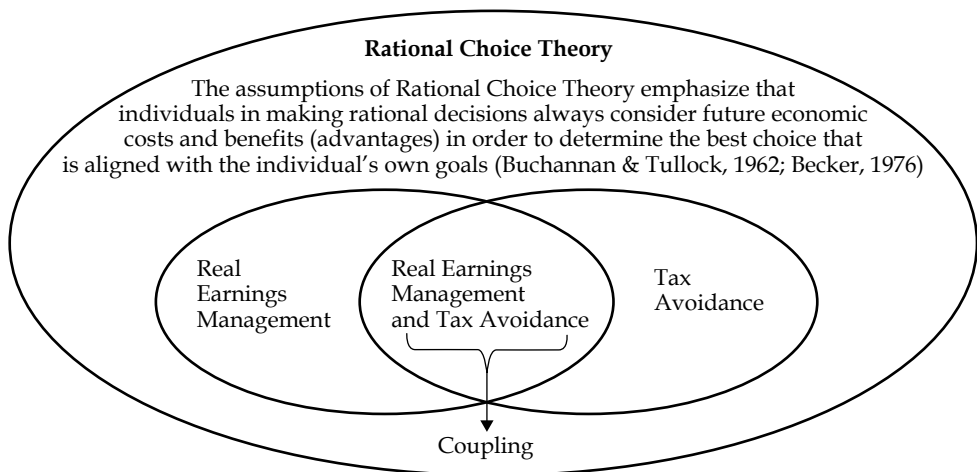


Figure 1. Coupling Real Earnings Management and Book-Tax Differences According Rational Choice Theory

Hypotheses 1, 2, and 3 are formulated to prove the effect of real earnings management with proxies of abnormal operating cash flow, abnormal production costs, and abnormal discretionary expenses on book-tax differences.

#### **2.4. Real Earnings Management in abnormal operating cash flow and Book-Tax Differences**

The important point of RCT is an individual choice that focuses on maximizing economic benefits based on rational preferences by including methods that are considered the most efficient to achieve organizational and individual economic goals [26].

RCT is subject to the incremental method or economic progressiveness method (EPM). Real earnings management is a form of earnings management that emphasizes the economic progressiveness method through real activities to engineer corporate profits. One part of the real activity that is a component of real earnings management is operating cash flow [5]. Sales are one of the main keys to cash inflows in the company's operating activities. If the sales amount is small, then the flow from operating activities can potentially be smaller because the amount of cash inflow is reduced. Treatment of sales in real earnings management can make cash inflows in operating activities increase or decrease.

Furthermore, the increasing and decreasing operating cash flows will also have an impact on the reported taxable profit, so that the tax burden borne can be greater or smaller. The hypothesis that can be formulated based on this description is as follows:

*H1:* Real earnings management proxied by abnormal operating cash flow has a positive effect on book-tax differences as a form of tax avoidance.

#### **2.5. Real Earnings Management in Production Cost and Book-Tax Differences**

Production costs are part of the real activities contained in real earnings management [5]. Higher production costs reflect that the company increases production activities to produce more products than

usual. More production will cause the cost per unit to be smaller, and vice versa.

Furthermore, the size of the cost per unit that can be charged in tax calculations will have an impact on the reported taxable profit. The hypothesis that can be formulated based on this description is as follows:

*H2:* Real earnings management proxied by abnormal production costs has a positive effect on book-tax differences as a form of tax avoidance.

#### **2.6. Real Earnings Management in Discretionary Expenses and Book-Tax Differences**

Real earnings management is a form of earnings management that focuses on real activities to engineer corporate profits. One form of real activity that is part of real earnings management is discretionary expense manipulation [5]. Discretionary expenses are expenses that do not really affect the company's real activities, so they can be written off when the company's financial condition is not healthy. An increase or decrease in discretionary expenses will affect the taxable profit reported by the company. The tax borne by the company will be smaller when the discretionary expenses that can be charged in the calculation of taxable profit are greater.

The hypothesis that can be formulated based on this description is as follows:

*H3:* Real earnings management proxied by abnormal discretionary expenses has a positive effect on book-tax differences as a form of tax avoidance.

Furthermore, in order to prove that book-tax differences are actually the result of real earnings management manipulation, it is necessary to test in the reverse direction, i.e., to test the effect of book-tax differences on the three components of real earnings management. The proof can be formulated into three further hypotheses, namely H4, H5, and H6.

#### **2.7. Book-Tax Differences and Real Earnings Management (Abnormal Operating Cash Flow)**

Tax avoidance can be done in various ways, one of which is through book-tax differences. The difference between account-

ting and tax profits is the key to book-tax differences. The differences that occur can be negative or positive. When the resulting book-tax differences are positive, it can be concluded that profit according to accounting is greater than profit according to tax, and vice versa [27]. One way that companies can print book-tax differences with a positive value is through the treatment of sales as a component of real earnings management. Book-tax differences that are positive will have an impact on the company's operating cash flow from sales that can be included in the process of calculating profit according to tax. This will lead to a tendency for the tax burden borne by the company to be lower. The hypothesis that can be formulated based on this description is as follows:

*H4:* Tax avoidance with book-tax differences has a positive effect on abnormal operating cash flow which is a proxy for real earnings management.

### **2.8. Book-Tax Differences and Real Earnings Management (Abnormal Production Costs)**

When the resulting book-tax differences are negative, it can be indicated that the profit according to accounting will be smaller than the profit according to tax [27]. Treatment of production costs is one way that companies can print book-tax differences with positive values. The company's desire to print book-tax differences with a positive value requires that the production cost per unit that can be charged in the calculation of profit according to tax be large.

This will result in the tax burden borne by the company becoming lower. The hypothesis that can be formulated based on this description is as follows:

*H5:* Tax avoidance with book-tax differences has a positive effect on abnormal production costs as a proxy for real earnings management.

### **2.9. Book-Tax Differences and Real Earnings Management (Abnormal Discretionary Expenses)**

When the resulting book-tax differences are positive, than the treatment of discretionary expenses is one form of real earnings management that can be used

by companies to print book-tax differences with positive values. The company's desire to print book-tax differences with a positive value requires discretionary expenses that can be charged in the calculation of profit according to tax to be large.

This will result in the tax burden borne by the company becoming lower and lower. The hypothesis that can be formulated based on this description is as follows:

*H6:* Tax avoidance with book-tax differences has a positive effect on abnormal discretionary expenses as a proxy for real earnings management.

## **3. Method**

### **3.1. Data Collection and Sample**

All mining sector companies listed on the IDX for the period 2018–2021 became the population in the study. The research period from 2018 to 2021 was taken because the researcher used the PT Adaro Energy Tbk profit transfer case from 2009 to 2017 as a benchmark to see whether the activity was still carried out up to four years later or not.

The samples used are taken from the population and must meet several criteria, namely:

- 1) mining sector companies that are listed on the IDX consistently in the 2018–2021 period;
- 2) companies that publish audited financial reports consistently in the 2018–2021 period with a reporting period ending in December;
- 3) companies that did not experience suspension and delisting during the 2018–2021 period.

Researchers finally obtained 43 companies that fit the sample criteria to be used as data in this study. Details of the sample selection results that match the criteria can be presented as follows (Table 1).

### **3.2. Research Design**

The research design is an outline of the problem-solving plan developed by analyzing the data. The research design is prepared to determine or test the effect of the independent variable (X) on the dependent variable (Y) in order to answer all research hypotheses.



In addition, the ability of control variables to influence the dependent variable (Y) also needs to be tested to determine the level of strength of these variables. This study uses real earnings management (X) (Y) as the independent and dependent variables, while tax avoidance (Y) (X) becomes the dependent and independent variable.

The control variables used refer to [12], namely company age and company size. The research design in this study can be organized as follows (Figure 2).

**3.3. Dependent Variable**

The dependent variable used in this study is tax avoidance. The tax avoidance variable is represented by book-tax differences. The choice of proxy is based on the relationship between real earnings management and book-tax differences, which essentially focuses on earnings.

Furthermore, book-tax differences in this research are measured using the tax-effect book-tax differences ratio, which

is then poured into the regression equation to determine normal book-tax differences. Normal book-tax differences arise because there are differences between Financial Accounting Standards (SAK-IFRS) and Tax Regulations.

Tax-effect book-tax differences were chosen because they can accommodate the tax rate factor in accordance with conditions in Indonesia, which then require separate tax reporting. Research by [10] states the ratio of tax-effect book-tax differences as follows:

$$\begin{aligned} \text{Tax-effect book-tax differences} &= \\ &= (\text{Book Income} \times \text{Statutory Tax Rate}) - \quad (1) \\ &- (\text{Taxable Income} \times \text{Statutory Tax Rate}) \end{aligned}$$

Tax-effect book-tax differences are the difference between commercial and fiscal income: tax effect, book income means gross profit, taxable income is profit before tax, and statutory tax rate (STR) means the tax rate according to the Tax Law. The regression equation to find normal book-tax

Table 1

**Sample Selection Results**

No.	Description	Number
1	Mining sector companies listed on the IDX in 2021	57
2	Mining sector companies that experienced suspension in the 2018-2021 period	(5)
3	Mining sector companies that are not consistently listed on the IDX during the 2018-2021 period	(9)
4	Mining sector companies that did not publish complete financial reports during the 2018-2021 period	0
<b>Total Company Sample</b>		<b>43</b>

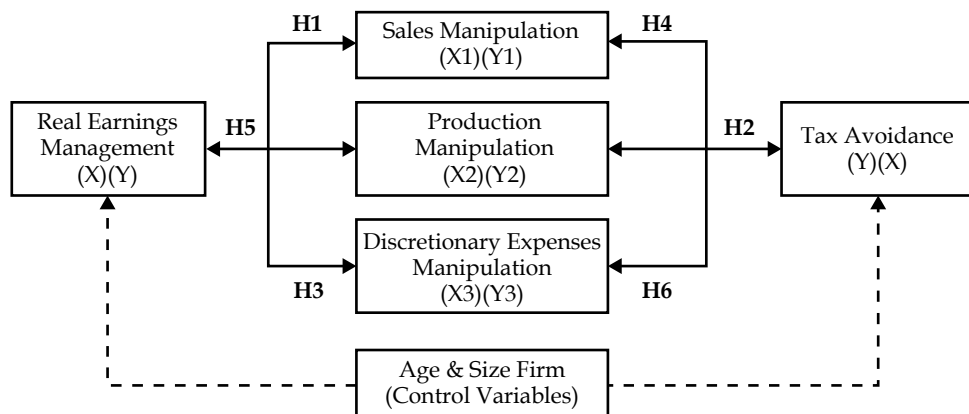


Figure 2. Research Design

differences used in this study is a combination of research [28; 10]. The equation can be written as follows:

$$\begin{aligned} \frac{BTD_{it}}{Assets_{it}} = & \alpha_0 + \beta_1 \left( \frac{\Delta INV_{it}}{Assets_{it}} \right) + \\ & + \beta_2 \left( \frac{\Delta REV_{it}}{Assets_{it-1}} \right) + \beta_3 \left( \frac{NOL_{it}}{Assets_{it}} \right) + \\ & + \beta_4 \left( \frac{TLU_{it}}{Assets_{it}} \right) + \beta_5 \left( \frac{LagBTD_{it}}{Assets_{it}} \right) + \varepsilon_{it}. \end{aligned} \quad (2)$$

$BTD_{it}$  means *tax-effect BTD*,  $INV_{it}$  indicates the change in fixed asset investment of company  $i$  in year  $t$ ;  $REV_{it}$  means the change in total revenue of company  $i$  in year  $t$ ;  $NOL_{it}$  means the net operating loss of company  $i$  in year  $t$ ;  $TLU_{it}$  indicates the fiscal loss compensated by company  $i$  in year  $t$ ; and  $LagBTD_{it}$  means the *tax-effect BTD* of company  $i$  in year  $t - 1$ .

### 3.4. Independent Variable

Real earnings management is an independent variable used in this study. Real earnings management is measured using the abnormal level of three activities as follows:

#### 1. Abnormal Operating Cash Flow.

Timing sales to be faster and/or making additional unsustainable sales through discounts or less stringent credit terms is key to sales manipulation [29]. Sales seem to increase due to the impact of sales manipulation, but there is actually a decrease in the company's current-year cash flow [30]. The decrease in cash flow indirectly leads to a smaller profit for the year, so taxable profit will decrease.

The amount of treatment results on sales is reflected in abnormal operating cash flow, which is the result of reducing actual operating cash flow to normal operating cash flow. The calculation of abnormal operating cash flow uses a regression equation taken from research [12]. The regression equation for abnormal operating cash flow can be written as follows:

$$\begin{aligned} \frac{CFO_{it}}{Assets_{it-1}} = & \alpha_0 + \beta_1 \left( \frac{1}{Assets_{it-1}} \right) + \\ & + \beta_2 \left( \frac{Sales_{it}}{Assets_{it-1}} \right) + \beta_3 \left( \frac{\Delta Sales_{it}}{Assets_{it-1}} \right) + \varepsilon_{it}. \end{aligned} \quad (3)$$

$CFO_{it}$  is the operating cash flow of company  $i$  in year  $t$ ,  $assets_{it-1}$  means total assets of company  $i$  in year  $t - 1$ ,  $sales_{it}$  is the total sales company  $i$  in year  $t$ , and  $Sales_{it}$  means the change in total sales of company  $i$  in year  $t$ .

#### 2. Abnormal Production Cost.

Abnormal production costs arise when there is an excessive amount of production to lower fixed costs per unit without offsetting increases in marginal costs and decreases in total costs per unit [29]. This indicates that Cost of Good Sold (COGS) will be reported lower and operating margins higher. Cost of production is derived from the sum of Cost of Good Sold with inventory changes. Companies can increase production costs that can be expensed in tax calculations so that taxable income becomes small.

Abnormal production costs will reflect the company's production manipulation. [12] revealed that reducing actual production costs and normal production costs will result in abnormal production costs. Research [12] states that abnormal production costs are formulated in the regression equation as follows.

$$\begin{aligned} \frac{PROD_{it}}{Assets_{it-1}} = & \alpha_0 + \beta_1 \left( \frac{1}{Assets_{it-1}} \right) + \\ & + \beta_2 \left( \frac{Sales_{it}}{Assets_{it-1}} \right) + \beta_3 \left( \frac{\Delta Sales_{it}}{Assets_{it-1}} \right) + \\ & + \beta_4 \left( \frac{\Delta Sales_{it-1}}{Assets_{it-1}} \right) + \varepsilon_{it}. \end{aligned} \quad (4)$$

#### 3. Abnormal Discretionary Expenses.

The key to discretionary expense manipulation is to minimize expenses, such as research and development (R&D), advertising, and maintenance in order to increase corporate profits [29].

However, management can increase discretionary expenses so that the reported taxable profit can be smaller. [12] revealed that discretionary expense manipulation is reflected by abnormal discretionary expense which is the result of reducing actual discretionary expense with normal discretionary expense.

The calculation of abnormal discretionary expenses in this study uses

a regression equation adopted from research [12] and can be written as follows.

$$\frac{DISEXP_{it}}{Assets_{it-1}} = \alpha_0 + \beta_1 \left( \frac{1}{Assets_{it-1}} \right) + \beta_2 \left( \frac{Sales_{it-1}}{Assets_{it-1}} \right) + \varepsilon_{it}. \quad (5)$$

### 3.5. Control Variables

Firm's age and firm's size are the control variables used in this study. The method of measuring company age is adopted from research [31], which is measured by the number of years since the company was listed or listed on the Indonesia Stock Exchange [32]. Company size is measured from the division between total long-term debt and total assets owned by the company [33]. Researchers consider that the results of this ratio can describe the size of the company. The smaller the value of the ratio, the company tends to have a large size because total assets are able to cover the company's long-term debt.

### 3.6. Data Analysis Method

Panel data regression analysis is the method chosen in this study. In this study, panel data regression was conducted six times, namely:

- 1) testing Equation I;
- 2) testing Equation II;
- 3) testing Equation III;
- 4) testing Equation IV;
- 5) testing Equation V;
- 6) testing Equation VI.

Regression conducted on each equation aims to test all hypotheses in this study. The equations can be presented as follows.

Book-tax differences as dependent variable:

Equation I is used to test hypothesis 1 (abnormal operating cash flow on BTM) which can be formulated as follows.

$$BTM_{it} = \alpha + \beta_1 AbCFO_{it} + \beta_2 FIRM SIZE_{it} + \beta_3 FIRM AGE_{it} + \varepsilon_{it}. \quad (6)$$

Equation II is used to test hypothesis 2 (abnormal production cost to BTM) which can be formulated as follows.

$$BTM_{it} = \alpha + \beta_1 AbPROD_{it} + \beta_2 FIRM SIZE_{it} + \beta_3 FIRM AGE_{it} + \varepsilon_{it}. \quad (7)$$

Equation III is used to test hypothesis 3 (abnormal discretionary expense to BTM) which can be formulated as follows.

$$BTM_{it} = \alpha + \beta_1 AbDISEXP_{it} + \beta_2 FIRM SIZE_{it} + \beta_3 FIRM AGE_{it} + \varepsilon_{it}. \quad (8)$$

Real earnings management as dependent variable:

Equation IV is used to test hypothesis 4 (BTM on abnormal operating cash flow) which can be formulated as follows.

$$AbCFO_{it} = \alpha + \beta_1 BTM_{it} + \beta_2 FIRM SIZE_{it} + \beta_3 FIRM AGE_{it} + \varepsilon_{it}. \quad (9)$$

Equation V is used to test hypothesis 5 (BTM on abnormal production costs) which can be formulated as follows.

$$AbPROD_{it} = \alpha + \beta_1 BTM_{it} + \beta_2 FIRM SIZE_{it} + \beta_3 FIRM AGE_{it} + \varepsilon_{it}. \quad (10)$$

Equation VI is used to test hypothesis 6 (BTM on abnormal discretionary expenses) which can be formulated as follows.

$$AbDISEXP_{it} = \alpha + \beta_1 BTM_{it} + \beta_2 FIRM SIZE_{it} + \beta_3 FIRM AGE_{it} + \varepsilon_{it}. \quad (11)$$

Equations I, II, and III are used to prove the relationship of real earnings management proxied by abnormal operating cash flow, abnormal production costs, and abnormal discretionary expenses to book-tax differences as a form of tax avoidance. It is not enough to prove it in one direction, but it must be done in two directions to find out the more specific relationship between real earnings management and book-tax differences and vice versa. This needs to be done to determine the coupling or decoupling between the two activities.

Equations IV, V, and VI in this study are formulated to prove the opposite relationship, namely book-tax differences to real earnings management. When real earnings management affects book-tax differences and book-tax differences affects real earnings management, it can be concluded that real earnings management and book-tax differences have a coupling relationship (sine qua non).

**4. Result**

**4.1. Descriptive Statistical Analysis**

Table 2 explains the descriptive statistics of each variable used in this study. The descriptive statistics for the research sample show that the mining sector companies used totaled 172.

The average value (mean) for BTD is -3.810565; abnormal CFO is -2.328884; abnormal PROD is -0.763576, abnormal DISEXP is -2.629598, company size is -1.736610; and company age is 14.68605. The minimum value for BTD is -6.846480; abnormal CFO is -6.296140; abnormal PROD is -3.882660; abnormal DISEXP is -3.637980; company size is -3.994140; and company age is 0.000000. Furthermore, the highest value (maximum) for BTD is -1.776710; abnormal CFO is 0.000000; abnormal DISEXP is -1.416070; company size is -0.418360; and company age is 31.00000. The median value of BTD is -3.810565;

abnormal CFO is -2.227985; abnormal PROD is -0.732540; abnormal DISEXP is -2.605795; company size is -1.681720; and company age is -13.50000. The standard deviation for BTD is 0.562571; abnormal CFO is 0.894990; abnormal PROD is 0.767292; abnormal DISEXP is 0.505047; company size is 0.868149; and company age is 7.909224.

**4.2. Hipotesis Test Result**

The focus of this research is to prove the reciprocal relationship between real earnings management proxied by sales manipulation, production manipulation, and discretionary expense manipulation to book-tax differences as a form of tax avoidance. Furthermore, the results will also be used as a basis to explain the coupling or decoupling relationship between real earnings management and book-tax differences. The test results and hypothesis interpretation can be presented in Table 3.

Table 2

**Descriptive Statistical Analysis Results**

Variable	Obs.	Mean	Minimum	Maximum	Median	Std. Dev.
BTD	172	-3.810565	-6.846480	-1.776710	-3.810565	0.562571
Abnormal CFO	172	-2.328884	-6.296140	0.000000	-2.227985	0.894990
Abnormal PROD	172	-0.763576	-3.882660	0.817990	-0.732540	0.767292
Abnormal DISEXP	172	-2.629598	-3.637980	-1.416070	-2.605795	0.505047
Firm Size	172	-1.736610	-3.994140	-0.418360	-1.681720	0.868149
Firm Age	172	14.68605	0.000000	31.00000	-13.50000	7.909224

Table 3

**Panel Least Square Results of Equation I and II**

Variable	Equation I			Equation II		
	Coefficient	t-statistic	Prob.	Coefficient	t-statistic	Prob.
C	-4.015311***	-9.824778	0.0000	-3.799914***	-20.72029	0.0000
AbCFO	0.12227*	2.925820	0.0041			
AbPROD				0.018462	0.261705	0.7939
FIRM SIZE	-0.225324***	-2.740324	0.0070	-0.140471**	-2.290338	0.0232
FIRM AGE	0.012227	0.459476	0.6467	-0.016376**	-2.028247	0.0441
F-statistic		5.336800			3.434067	
Prob. (F-statistic)		0.000000			0.018328	
R <sup>2</sup>		0.655884			0.057779	
Adjusted R <sup>2</sup>		0.532986			0.040954	
Observation		172			172	

\*\*\*, \*\*, \* indicates significant at level 1%, 5%, 10%

The regression model in Equation I is feasible to use because the Prob. (F-statistic) gives a result of 0.00 so that it is less than 0.05. In addition, the Adjusted  $R^2$  gives the result that the independent variables are able to explain 53.29% of the dependent variable so that 46.71% is explained by other variables outside the study. The test results show that abnormal operating cash flow positively affects BTD by 0.15 at 1% significance level. The control variable in this study, firm size, does not affect tax avoidance, while firm age negatively affects BTD by 0.22 at the 1% significance level. Thus, testing Equation I supports the acceptance of hypothesis 1, namely “real earnings management proxied by abnormal operating cash flow affects book-tax differences as a form of tax avoidance”.

Abnormal operating cash flows can arise when companies provide discounts or credit relaxation so that the level of sales increases. Mining sector companies tend to provide discounts or credit concessions to attract customers because the products sold are quite expensive and are only used by certain consumers. However, the increase in sales volume is not followed by an appropriate cash inflow because providing discounts or credit concessions will result in cash inflows from sales being smaller than they should be. This will result in the company's operating cash flow in the current year being smaller so that the profit recorded or reported by the company will also be lower. The low booked profit will also be followed by a low taxable profit.

However, book profit can be higher than taxable profit because the accrual basis method of recognizing transactions is allowed in accounting, while the tax authorities only allow the cash basis method. Receipts from future sales on credit can be included in the calculation of the current year's book profit, but must be excluded in the calculation of taxable profit. This in turn makes the taxable profit lower than the book profit, resulting in the tax expense tending to be lower.

The Prob. (F-statistic) value of 0.01 is less than 0.05 so that the Equation II re-

gression model is declared feasible to use. In addition, the ability of the independent variables to explain the dependent variable based on Adjusted  $R^2$  is 4.09% so that there are 95.91% explained by other variables outside the study.

The test results show that BTD is not influenced by abnormal production costs. In addition, company size and age, which are control variables, negatively affect BTD by 0.14 and 0.01 at 5% significance level. Thus, testing Equation II rejects hypothesis 2, stating that “abnormal production cost as a proxy for real earnings management does not affect book-tax differences as a form of tax avoidance”.

Abnormal production costs focus on the treatment of production costs incurred by the company. In the context of the mining sector, companies tend to produce according to demand or market conditions because the cost of production is not cheap. In addition, quality is important because mining products are quite high value so that companies will prioritize quality over quantity. This is done to maintain the sustainability of the company in the midst of market competition and coupled with the Covid-19 pandemic in 2020–2022 which makes the economy slump.

Efforts to minimize the tax burden must be in the minds of company management, but they do not do this through production manipulation because it is feared that it will disrupt the company's financial stability. When companies force themselves to increase production costs that can be charged in tax calculations so that there is a buildup of inventory when market demand is down, it will backfire on the company's own finances (Table 4).

The regression model in Equation III (Table 4) is feasible to use because Prob. (F-statistic) gives a result of 0.00 so it is less than 0.05. In addition, Adjusted  $R^2$  gives the result that the independent variable is able to explain 6.15% of the dependent variable so that 93.85% is explained by other variables outside the study. The test results show that abnormal discretionary expenses positively affect tax avoidance by 0.23 at the 10% significance level.

Table 4

## Panel Least Square Results of Equations III and IV

Variabel	Equation III			Equation IV		
	Coefficient	t-statistic	Prob.	Coefficient	t-stat	Prob.
C	-3.175826	-8.623141	0.0000	0.314920	0.361591	0.7183
AbDISEXP	0.230643*	1.969853	0.0505			
FIRM SIZE	-0.100033	-1.590000	0.1137	0.002677	0.019714	0.9843
FIRM AGE	-0.013752*	-1.699713	0.910	-0.074707*	-1.769913	0.0792
BTD				0.404665***	2.925820	0.0041
F-statistic		0.741229			5.200580	
Prob. (F-statistic)		0.003353			0.000000	
R <sup>2</sup>		0.078056			0.650025	
Adjusted R <sup>2</sup>		0.061593			0.520534	
Observation		172			172	

\*\*\*, \*\*, \* indicates significant at level 1%, 5%, 10%

The control variable in this study, firm size, does not affect tax avoidance, while firm age is found to negatively affect BTD by 0.01 at the 10% significance level. Thus, testing Equation III supports the acceptance of hypothesis 3, namely “real earnings management proxied by abnormal discretionary expenses affects book-tax differences as a form of tax avoidance”.

Mining sector companies tend to have high discretionary expenses to support operational activities, such as expert services expenses, freelance labor salary expenses, and research and development expenses. Discretionary expenses in the mining sector are not solely used for tax avoidance purposes, but are mostly used to support the sustainability and progress of the company.

In addition, companies that have high discretionary expenses may not use BTD to reduce tax expenses because the expenses calculated according to accounting are not much different according to tax. In addition, the decisions or views of company leaders in the mining sector can also be one of the reasons discretionary expenses are not used to minimize the tax burden.

Likewise, the Prob. (F-statistic) value of 0.00 is less than 0.05 so that the Equation IV regression model is declared feasible to use. In addition, the ability of the

independent variables in explaining the dependent variable based on Adjusted R<sup>2</sup> is 52.05% so that there are 47.95% explained by other variables outside the study. The test results show that BTD affects abnormal operating cash flow positively by 0.40 at 1% significance level. Abnormal operating cash flow is not affected by company size, but is negatively affected by company age by 0.07 at the 10% significance level. Company size and age are control variables in this study. Thus, testing Equation IV supports the acceptance of hypothesis 4, namely “tax avoidance with book-tax differences affects abnormal operating cash flow as a proxy for real earnings management”

Companies that wish to print high BTD will focus on the company’s cash flow. Cash flow from operating activities is a concern for the company because it will indirectly affect the reported book profit and taxable profit. Companies that want to obtain high BTD will make taxable profit low and book profit remain high. This will unconsciously bring the company into the practice of real earnings management through abnormal operating cash flow with a focus on sales. High BTD can be achieved when cash inflows mainly from operating activities in the current year are small because the reported taxable profit is also small.

However, book profit can be made larger than taxable profit through the credit sales mechanism as a treatment of sales. Credit sales receipts from the future can be accounted for in book profit because it is allowed to adopt the accrual basis, while in tax they must be excluded because only the cash basis is allowed.

The regression model in Equation V (Table 5) is declared feasible to use because the Prob. (F-statistic) value is 0.04, making it less than 0.05.

In addition, the Adjusted R<sup>2</sup> gives the result that the independent variables are only able to explain 3.08% of the dependent variable so that 96.92% is explained by other variables outside the study. The test results show that abnormal production costs are not affected by BTD. Furthermore, firm size negatively affects abnormal production costs by 0.15 and is significant at the 5% level, while firm age does not affect it. Therefore, hypothesis 5 is rejected, stating that "tax avoidance with book-tax differences does not affect abnormal production costs as a proxy for real earnings management".

The way to achieve high book-tax differences is not done through abnormal production costs. This happens because abnormal production costs will force companies to increase production costs so that the products produced increase from before in order to minimize production costs per unit. For mining companies, this action can backfire on the company's finances because

abundant production and not followed by increased market demand will result in losses for the company when the product is not sold. Mining products that are stored for too long due to unsaleability will lead to a decrease in quality so that they must be disposed of and harm the company.

The Prob. (F-statistic) value of 0.00 is less than 0.05 so that the regression model Equation VI is declared feasible to use. In addition, the ability of the independent variables to explain the dependent variable based on Adjusted R<sup>2</sup> is 85.4% so that there are 14.6% explained by other variables outside the study. The test results show that BTD positively affects abnormal discretionary expenses by 0.10 at the 5% significance level. The control variable in this study, company size, negatively affects abnormal discretionary expenses by 0.07 at the 10% significance level, while company age has no effect. Therefore, testing Equation VI supports the acceptance of hypothesis 6, namely "tax avoidance with book-tax differences affects abnormal discretionary expenses as a proxy for real earnings management".

Discretionary expenses are one of the real earnings management components that are affected by the company's desire to print high book-tax differences. Treatment of discretionary expenses is indirectly carried out when the company wants book profit to be greater than taxable profit. This can happen because discretionary expenses have a great opportunity to be

Table 5

Panel Least Square Results for Equations V and VI

Variabel	Equation V			Equation VI		
	Coefficient	Std. Error	Prob.	Coefficient	Std. Error	Prob.
C	-0.621406*	-1.667581	0.0973	-2.491678***	-9.145630	0.0000
BTD	0.051789	0.688920	0.4918	0.108883**	2.516620	0.0131
FIRM SIZE	-0.154427**	-2.314096	0.0219	0.071732*	-1.688634	0.0938
FIRM AGE	-0.014504	-1.257669	0.2103	0.010378	0.785997	0.4333
F-statistic	2.815228			23.23509		
Prob. (F-statistic)	0.040848			0.000000		
R <sup>2</sup>	0.047866			0.892453		
Adjusted R <sup>2</sup>	0.030863			0.854043		
Observation	172			172		

\*\*\*, \*\*, \* indicates significant at level 1%, 5%, 10%

used as a deduction in the calculation of taxable profit because they are deductible expenses. Discretionary expenses such as depreciation can be worth more when charged in the calculation of taxable profit due to differences in rules between Financial Accounting Standards (SAK) and tax regulations.

**4.3. Coupling Analysis Results**

The results of hypothesis testing that have been carried out prove that between discretionary expenses and book-tax differences, the nature of the relationship is aligned (hand in hand) or coupled, and it can be said that if there is manipulation of discretionary expenses, it will automatically appear in nominal changes in book-tax differences, or “sine qua non”.

However, table 6 also shows that there is no influence between abnormal production costs and book-tax differences. This is because mining companies have policies that adjust their production costs based on needs, for example, meeting customer demand (increased sales), without being able to manipulate book-tax differences with the aim of tax avoidance.

Meanwhile, the coupling nature between abnormal operating cash flows and book-tax differences means that the two variables will go hand in hand. When abnormal operating cash flows increase, the resulting book-tax differences also increase, and vice versa. This indicates that sales that emphasize operating cash flow will always have a direct impact on the movement of the book value of book income and taxable income, which in turn results in book-tax differences.

Furthermore, factors that cause abnormal operating cash flows, such as discounting and credit relaxation, will also have an impact on book-tax differences. This also provides information that mining sector companies tend to conduct tax avoidance in the form of book-tax differences through real earnings management by treating sales, resulting in abnormal operating cash flows.

The same result occurs in the relationship between abnormal discretionary expenses and book-tax differences. Coupling properties are also formed in the relationship between discretionary expenses and book-tax differences. When abnormal discretionary expenses increase or decrease, it will be followed by an increase or decrease in book-tax differences.

This can happen because most types of expenses that can be categorized as discretionary expenses can be charged in the calculation of taxable income or are deductible expenses. Depreciation expense, contained in general and administrative expenses, is one form of discretionary expense that can allow a higher amount than when included in the tax calculation. The difference between the provisions of Financial Accounting Standards (FAS) and Tax Regulations is the basis for this.

**5. Discussion**

Previous research has only proven one-way testing, either from real earnings management to tax avoidance or only proving book-tax differences as an indicator of earnings management to tax avoidance. As in the case of [13] and [12], who prove that real earnings management activities are used for tax avoidance.

Table 6

**Coupling and Decoupling Analysis Results**

Variable	Dependen			
	AbCFO	AbPROD	AbDISEXP	BTD
AbCFO				+ Coupling
AbPROD				× No Effect
AbDISEXP				+ Coupling
BTD	+ Coupling	× No Effect	+ Coupling	



Meanwhile, [10] prove that book-tax differences can indicate manipulation in accounting. Or [11], which shows that the greater the book-tax differences, the greater the level of earnings management carried out in order to obtain tax savings through tax avoidance. The study cannot prove the relationship between real earnings management and book-tax differences, as the researcher wants to prove.

Therefore, the researcher wants to prove that not only does real earnings management affect book-tax differences, but from the researcher's observation, it needs to be proven that book-tax differences are also the result of real earnings management, so in addition to testing real earnings management on book-tax differences, the researcher also reciprocally tests book-tax differences on real earnings management.

Thus, the hypothesis testing of this study provides the following results: Hypotheses 1, 2, and 3 that test the effect of the three real earnings management proxies in influencing book-tax differences provide significant results, except for the abnormal production cost variable.

Meanwhile, hypotheses 4, 5, and 6 that test the effect of book-tax differences on the three real earnings management proxies also give significant results, except for the abnormal production cost variable, as explained earlier in the coupling test results section.

These results prove that there is a coupling relationship (*sine qua non*) from real earnings management activities to book-tax differences and vice versa. That is, book-tax differences are indeed the result of real earnings management manipulation from operating cash flow costs and discretionary expenses. This effect also shows that companies, especially in the mining sector, will always carry out earnings management by manipulating operational cash flow costs and discretionary expenses with the aim of conducting tax avoidance by adjusting the amount of the company's book-tax differences, where the amount of book-tax differences will automatically adjust based on real earnings management manipulation.

Real earnings management is an activity that refers to the PSAK, while book-tax differences are an activity that refers to the Tax Law. The result of real earnings management is book income, while book-tax differences are the difference between book income and taxable income. Taxable income itself can be obtained from the fiscal reconciliation process (the process of adjusting commercial financial statements in accordance with PSAK with the Tax Law, which produces fiscal financial statements).

Thus, the existence of fiscal reconciliation can be a dilemma for the government because the two rules (PSAK and Tax Law) become interrelated. If the calculations in the PSAK still have to be adjusted again with the tax regulations, there will always be weaknesses that can be utilized by company management to avoid taxes, such as book-tax differences.

This research is expected to contribute to the government, especially the Directorate General of Taxes, as a policymaker, to start paying attention to the volatility of book-tax differences for each company. Because it has been proven that book-tax differences are the result of earnings management manipulation.

However, this study still has limitations, namely not considering the existence of tax facilities in each type of mine, which may also affect the determination of the amount of book income recognized and the amount of taxable income of the company.

Wittek et al. [34] revealed that rational choice theory has two assumptions, namely, maximizing self-interest at a small cost and individualism methodology. The notion of coupling departs from the notion of decoupling, which is two variables that initially run in harmony or side by side but, for some reason, become misaligned or contradictory [35].

## **6. Conclusion**

In general, decisions made by organizations and managers (individuals) involve complex and broad conditions. Rational choice theory tries to build a framework for framing the complex

situation so that a rational framework will be obtained underlying the decisions made by individuals on all available options, for example, in tax avoidance to choose to use accrual-based earnings management or real earnings management.

In contrast to the accrual-based earnings management method, real earnings management is more often used as an option for tax avoidance because it tends not to be easily detected by external auditors and because many of the accounts contained in it can be determined by management policies to manage the company's operational activities, which of course are tailored to the specific needs of the company that are not the same as those of other companies.

Thus, of course, the decision that will be made by the company's management is one that is considered rational in accordance with the conditions of the company and also based on experience in previous years. However, when viewed in general, choices that are considered rational are based on individual experience; if there are choices that are considered rational but in an unstable environment, it can lead to high individual risk, and if faced with the company's need to audit financial statements, it will automatically have implications for the behavior of auditors or tax authorities, which are also irrational. Because, in principle, companies cannot control the behavior of external auditors and even tax authorities.

Therefore, rational choice theory cannot be separated from maximizing behavior, namely individuals as subjects in the context that they are in institutions or organizations, meaning that institutions or organizations are products and sources in making decisions to obtain maximum economic benefits for the organization, in this case the selection of tax avoidance methods. Rational choice theory is based on the assumption of preference consistency for low-risk faced by individuals (human or non-human) as decision-makers, meaning that rationally, if the risk cannot be predicted precisely

due to a lack of external information (an environment outside the organization) and cannot even be controlled effectively, then individuals will prefer risks that have high risk consistency (stable), which of course can be controlled properly by individuals.

The selection of the best strategy by management to maintain high profits and a low tax burden can be explained by rational choice theory. The theory emphasizes that the best choice is the one that can provide benefits for oneself to achieve certain goals on the basis of rational thinking. Real earnings management and book-tax differences can be a choice that is considered rational by management to achieve the goal of printing high profits and minimizing the tax burden. When these two things can be achieved, the management will get an award for being able to increase the value of the company, and this is also one of the goals of the management. Real earnings management and book-tax differences, which are rational choices of management, will certainly run in harmony or side by side to achieve the goal of maintaining high profits and minimizing the tax burden. When real earnings management increases, it will be followed by book-tax differences that also increase, and vice versa. The alignment of the relationship is known as coupling.

From the findings of the research, the government, especially the Directorate General of Taxes, can be more thorough in examining tax avoidance, especially with regard to real activities and book-tax differences. Furthermore, the Directorate General of Taxes can also calculate the book-tax differences that arise against companies suspected of tax avoidance. In addition, tax auditors owned by the Directorate General of Taxes can be given training related to the examination of real earnings management and book-tax differences. Knowledge and understanding of real earnings management and book-tax differences will be very useful when there are indications of mining companies doing tax avoidance through book-tax differences.

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### For citation

Lembut P.I., Oktariani F. Real Earnings Management Sine Qua Non Book-Tax Differences in Tax Avoidance of Mining Sector Companies in Indonesia. *Journal of Tax Reform*. 2023;9(3):430–450. <https://doi.org/10.15826/jtr.2023.9.3.151>

### Article info

Received November 10, 2023; Revised November 19, 2023; Accepted December 1, 2023

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### **Для цитирования**

Lembut P.I., Oktariani F. Real Earnings Management Sine Qua Non Book-Tax Differences in Tax Avoidance of Mining Sector Companies in Indonesia. *Journal of Tax Reform.* 2023;9(3):430–450. <https://doi.org/10.15826/jtr.2023.9.3.151>

### **Информация о статье**

Дата поступления 10 ноября 2023 г.; дата поступления после рецензирования 19 ноября 2023 г.; дата принятия к печати 1 декабря 2023 г.