



# The Effect of Profitability, Leverage, Incentive, and Gender Diversity on Tax Avoidance in Coal Sub-sector Companies Listed on the Indonesia Stock Exchange (IDX)

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**Abstract.** Based on financial report data published by coal sub-sector companies on the IDX website from 2018 to 2020, this study attempts to assess the effect of profitability, leverage, incentives, and gender diversity on tax avoidance. In this study, sampling was done with the use of the STATA program and multiple regression analysis tests on the target population. The total number of samples analyzed in this research was 63. The findings of this study reveal that profitability has a favorable and significant impact on tax avoidance, based on the tests that were conducted. Gender diversity and leverage, on the other hand, have a positive and minor effect on tax avoidance, while incentives have a negative and large effect.

**Keywords:** Profitability · Leverage · Incentives · Gender Diversity · Tax Avoidance

## 1 Introduction

Currently, taxes are the largest source of state revenue, namely IDR 1,618.1 trillion of the total state revenue of IDR 1,894.7 trillion in the 2018 State Budget [1]. The large role of taxes for the welfare of the state and its people encourages the government to increase revenue from the tax sector. In Indonesia, the mining sector is the sector that is the top contributor to investors and state revenue. As said by Indonesian geologists, Indonesia has many natural resources that can be a great source of income for the state. As a result of large income accompanied by government regulations for this sector that are still overlapping, fraud can occur in corporate governance, including tax avoidance. The phenomenon of tax avoidance in the current era of globalization is increasingly being discussed in various countries, including Indonesia. In Indonesia, one sector that is very prone to tax avoidance is the extractive/mining industry sector, especially for the oil and gas and the coal sub-sectors. The Bakrie Group's coal mining companies, PT Kaltim Prima Coal, PT Bumi Resources Tbk, and PT Arutmin Indonesia, have all been involved in the tax dodging problem in Indonesia. These three corporations are said to have avoided paying Rp 2.176 trillion in taxes. Companies often take out tax

management in order to lower the tax burden to a minimum while remaining within the right tax rules.

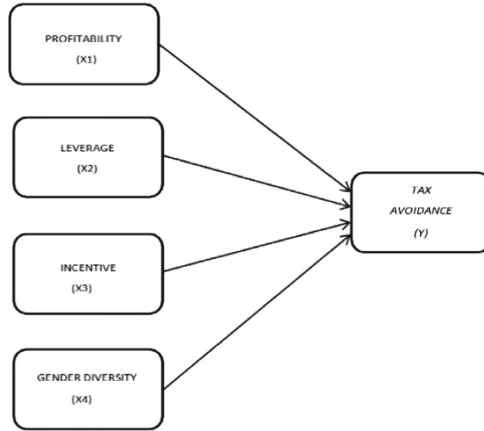
Tax management, according to Pohan [2], is an endeavor to execute the management function in terms of achieving the efficacy and efficiency of enforcing tax rights and duties. Since January 1, 1984, The tax collection system in Indonesia has shifted from an official assessment to a self-assessment. In this self-assessment, companies (taxpayers) are obliged to calculate, deposit, and report their tax obligations. That way, if the company's net profit is generated optimally, then this will affect the company's profitability ratio. Profitability ratios are often described by return on assets. This indicates that the larger the company's net profit (profits before taxes), the more tax avoidance is necessary by management to decrease the cost of taxes to be paid. In addition to the profitability strategy, leverage or debt is a policy taken by management to finance the company, which has a significant role in the level of tax avoidance. In a business context, leverage refers to a company's utilization of assets and sources of finances to maximize the possible advantages for stakeholders.

Meanwhile, to motivate management to do tax avoidance well, it is not uncommon for company owners (shareholders) to make policies such as providing incentives. With the incentive costs incurred, it will reduce the tax burden. Another element, particularly the impact of gender diversity on the board of directors, has an influence on tax evasion actions, which can get an impact on a valuation of the company. This is because women tend to have a small risk in their portfolio investments [3], and are associated with low levels of earning management [4], preferring the action conservative accounting [5], and lower risk in funding and investment decisions.

Agency theory is a contract where the owner of the company (principal) gives orders to the manager (agent) to make the right decisions for the owner of the company (principal). This agency relationship causes problems between the owner of the company and management called a conflict of interest (agency conflict), meaning that a conflict can arise at the desire of management (agent) to act at the expense of the interest of the owner of the company (principal). A dispute occurs in this study between the government (principal) as tax collector and the firm (agent) as taxpayer. The principal does not know the company's internal conditions because it does not involve managing the company. The principal only expects significant tax revenues from taxpayers because taxes are a source of state revenue used for state facilities and infrastructure, so significant funds are needed, in contrast to agents' views who wish to generate significant profits and low tax burdens. Therefore, the agent hardly tries to minimize the tax burden.

According to Sinulingga [6], "the theoretical framework is a conceptual model that shows a logical relationship between factors/variables that have been identified as important for analyzing research problems".

This study will focus on the relationship between profitability, leverage, incentives, and gender diversity on tax avoidance in coal sub-sector companies listed on the IDX. The conceptual framework in this study can be described as in Fig. 1.



**Fig. 1.** Conceptual Framework of

## 2 Research Method

Cause-and-effect research is a type of study that looks at causal links by looking at the consequences and the possible variables (causes) behind them. This study looked at firms in the coal sector that were listed on the Indonesia Stock Exchange (IDX). The information will be gathered from the Indonesia Stock Exchange's website. From 2018 through 2020, this quantitative data was found in corporate financial statements. This study used the target population as a source of sampling. The target population is the determination of the population based on the conditions specified in the study. The criteria of the target population in this study were (1) Listed on the Indonesia Stock Exchange until 2020, (2) Issuer shares have actively conducted trading during the observation period from 2018 to 2020, (3) Issued Financial Statements from 2018 to 2020 and reported the financial statements that have been audited by independent auditors who have obtained a license from the Financial Services Authority (OJK).

The census technique of sampling was used in this study, and the complete target population was sampled. So there were twenty-one (21) companies in this study's sample. The documentary technique was used in this study to collect data on the financial statements of coal sub-sector enterprises, which were obtained from the IDX's official website.

The Table 1 summarizes the operational definitions used in this study. Multiple regression analysis (multivariate analysis) with the help of the STATA program was utilized to examine the hypothesis formulated in this study.

**Table 1.** Operational Definition

No.	Variables	Operational Definition	Indicators	Measurement Scale
1.	Profitability (X <sub>1</sub> )	Profitability is a metric that assesses a company's capacity to manage its assets in order to make profits over time.	ROA = $\frac{\text{Net Profit Before Tax}}{\text{Total Assets}} \times 100\%$ (1)	Ratio
2.	Leverage (X <sub>2</sub> )	The amount of debt used to finance a corporation is referred to as leverage.	DER = $\frac{\text{Bitch Debt}}{\text{Equity}} \times 100\%$ (2)	Ratio
3.	Incentives (X <sub>3</sub> )	Incentives compensation programs that link pay with productivity.	Incentives = $\frac{\text{Salary+Allowances+Bonus}}{\text{Sales}} \times 100\%$ (3)	Ratio
4.	Gender Diversity (X <sub>4</sub> )	Basically, gender diversity is influenced by nature inherent in men and women as individuals who affect their environment.	Gender diversity is measured by a dummy variable. If a value of 1 means that there are female directors in a company and a value of 0 means that there are male directors in a company	Nominal
5.	Tax Avoidance (Y)	Tax avoidance is a strategy for reducing the tax burden by minimizing taxation on transactions that aren't tax objectives.	CETR = $\frac{\text{Cash Taxes Paid}}{\text{Pretax Income}} \times 100\%$ (4)	Ratio

**Table 2.** Descriptive Statistics base on profitabilities (x1), leverage (x2), incentives (x3), gender differences (x4), tax avoidance (x5) variables

Variable	Minimum	Maximum	Mean	Std. Dev.
Profitabilities (x1)	-57,568	45,558	4,175	13,754
leverage (x2)	9,654	3.405,558	239,342	543,611
insentif (x3)	0,173	306,599	20,404	51,936
gender diversity (x4)	0,00	1.00	0,524	0,503
tax avoidance (y)	-2.165,680	355,295	-19,288	294,112

### 3 Results and Discussion

#### 3.1 Descriptive Statistical Analysis Descriptive

The maximum value, lowest value, average value (mean), and standard deviation value were utilized in statistical analysis to define the description of data. Profitability (x1), leverage (x2), incentives (x3), gender diversity (x4), and tax evasion were the variables used to calculate descriptive statistics in this study (y). The sample description is as follows, based on descriptive statistical analysis.

The smallest value of profitability (x1) is -57.568, while the maximum value of profitability (x1) is 45.558, according to Table 2. With a standard deviation of 13.754, the average profitability (x1) is 4.175. The lowest value of leverage (x2) is 9.654, while the highest value of leverage (x2) is 3.405,56.

With a standard deviation of 543.611, the average leverage (x2) is 239.342. The least value of the incentive (x3) is known to be 0.173, while the greatest value of the incentive (x3) is known to be 306.599. With a standard deviation of 51.936, the mean incentive (x3) is 20.404. The smallest value of gender diversity (x4) is 0.000, and the maximum value of gender diversity (x4) is 1.000, as is well known.

The average gender diversity (x4) is 0.524, with a standard deviation of 0.503. It is known that the minimum value of tax avoidance (y) is -2165.680, while the maximum value of tax avoidance (y) is 355.295. The mean tax avoidance (y) is -19.288, with a standard deviation of 294.112.

#### 3.2 Classical Assumption

##### 3.2.1 Normality Test

The Shapiro-Wilk (SW) test is used to determine the normality of the residuals in this investigation. The assumption of normality is met if the probability value  $p > 0.05$ . If the probability is less than 0.05, the assumption of normality is violated.

The probability value (column Prob > z) is 0.63917, as determined by Table 3. Because the probability value of 0.63917 exceeds the 0.05 criterion of significance. This indicates that the normality assumption has been met.

**Table 3.** Normality Test with Saphiro Wilks

Variables	Obs	W	V	z	Prob > z
data_resid ~ 1	63	0,98500	0,848	-0,356	0,63917

**Table 4.** Multicollinearity Test with VIF

Variable	VIF	1/VIF
x1	1.13	0.882053
x2	1.1	0.905334
x3	1.08	0.925456
x4	1.05	0.952549

Source: Stata

**Table 5.** Autocorrelation Test with Runs Test

Runtest data residual
N (data_resid ~ 1 < = -.0551916547119617) = 32
N (data_resid ~ 1 > -.0551916547119617) = 31
Obs = 63
N (runs) = 32
Z = -.13
Prob  z  = 0.9

Source: STATA

### 3.2.2 Multicollinearity Test

The VIF result in this study revealed the symptoms of multicollinearity. According to Ghozali [7], if the VIF number is greater than 10, it shows multicollinearity. Table 4 displays the results of the multicollinearity test.

Table 4 shows that there are no signs of multicollinearity among the independent variables. This is due to the VIF value being less than 10 [7].

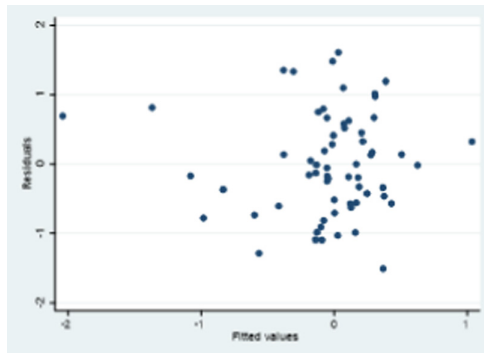
### 3.2.3 Autocorrelation Test

The Runs test can be used to test assumptions about residual independence (non-autocorrelation). It is inferred that there is no autocorrelation if the probability value of the Runs test is greater than 0.05.

Based on Table 5, the probability value (Prob > |z|) of the Runs test is 0.9 > 0.05, so it is concluded that there is no autocorrelation.

**Table 6.** Multiple Regression Result

Source	SS	df	MS	Number of obs = 63		
				F(4, 58) =	5.82	
Model	13.4454745	4	3.36136863	Prof > F =	0.0005	
Residual	33.5102065	58	0.577762182	R-squared =	0.2863	
Total	46.9556811	62	0.757349695	Adj R-squared =	0.2371	
				Root MSE =	0.76011	
nY	Coef.	Std. Err.	t	P > t	[95% Conf. Interval]	
X1	0.0239647	0.007473	3.21	0.002	0.0090059	0.0389235
X2	0.0002747	.00018 66	1.47	0.146	-0.0000988	0.0006483
X3	-0.0049807	0.0019321	-2.58	0.013	-0.0088483	-0.0011132
X4	0.1025487	0.1964643	0.52	0.604	-0.2907173	0.4958147
_cons	-0.1636957	0.1616041	-0.99	0.324	-0.4931865	0.1657952



**Fig. 2.** Heteroscedasticity Test

**3.2.4 Heteroscedasticity Test**

To detect the existence or absence of heteroscedasticity, look for a certain pattern on the scatter plot between the residuals on the Y-axis and the fitted values on the X-axis [7]. The study’s foundation, according to Ghozali [7], is that if a certain pattern occurs, such as points forming a regular pattern, heteroscedasticity has occurred. If there is no visible pattern and the points are evenly spaced above and below the number 0 on the Y axis, there is no heteroscedasticity.

There is no discernible pattern in Fig. 2, and the points are scattered above and below the number 0 on the Y axis, indicating that there is no heteroscedasticity.

### 3.2.5 Hypothesis Testing

The coefficient of determination analysis, simultaneous effect testing (F-test), and partial effect testing (t-test) were carried out in hypothesis testing.

Based on the test results in Table 6, the following equation is obtained.

$$Y = -0.163 + 0.0239X_1 + 0.00027X_2 - 0.00498X_3 + 0.1025X_4 + e \quad (1)$$

The coefficient of determination (R-squared)  $R^2 = 0.2863$  is calculated using Table 6. This figure can be understood as profitability (x1), leverage (x2), incentives (x3), and gender diversity (x4) all affecting tax avoidance (y) by 28.63%, with other factors influencing the remaining 71.37%.

The F is used to see if the independent variables have a combined or simultaneous effect on the dependent variables. Table 6 shows that the probability value ( $\text{Prob} > F$ ) = 0.0005 0.05, implying that profitability (x1), leverage (x2), incentives (x3), and gender diversity (x4) all have a significant effect on the tax evasion variable at the same time (y).

## 4 Conclusion

According to the study's findings, profitability has a positive effect on tax evasion, with a coefficient value of 0.0239, and is significant, with a probability value ( $P > |z|$ ) = 0.002 0.05. With a coefficient of 0.00027, leverage has a favorable impact on tax evasion, but it is not statistically significant, with a probability value ( $P > |z|$ ) = 0.146 > 0.05. As evidenced by the coefficient value of -0.00498, and the probability value ( $P > |z|$ ) = 0.013 0.05, the Temporary Incentive has a negative and significant influence on tax evasion. Furthermore, while gender diversity has a positive impact on tax evasion (y) with a coefficient of 0.10254, it is not statistically significant ( $P > |z|$ ) = 0.604 > 0.05. Profitability, leverage, incentives, and gender diversity all have a considerable impact on the tax evasion variable, as can be seen.

## References

1. Departemen Keuangan Republik Indonesia. (2018). State Budget September 2018: Primary balance in a positive level 4 times in a row. *Kementerian Keuangan*. <https://www.kemenkeu.go.id/en/publications/news/state-budget-september-2018-primary-balance-in-a-positive-level-4-times-in-a-row/>
2. Pohan, C. A. (2013). *Tax management – tax and business planning strategy*. PT. Gramedia Pustaka Utama.
3. Jianakoplos, N. A., & Bernasek, A. (1998). Are women more risk averse? *Economic Inquiry*, 36(4), 620–630.
4. Barua, A., Davidson, L. F., Rama, D. V., & Thiruvadi, S. (2010). CFO gender and accruals quality. *Accounting Horizons*, 24(1), 25–39.
5. Francis, B., Hasan, I., & Wu, Q. (2013). The benefits of conservative accounting to shareholders: Evidence from the financial crisis. *Accounting Horizons*, 27(2), 319–346.
6. Sinulingga, S. (2017). *Research methods*. USU Press.
7. Ghazali, I. (2013). *Application of multivariate analysis with SPSS program*. Diponegoro University.



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