

THE EFFECT OF LIABILITIES AND EQUITY ON NET PROFIT IN BASIC MATERIALS SUB-SECTOR COMPANIES LISTED ON THE MAIN BOARD OF THE INDONESIA STOCK EXCHANGE (IDX) 2022–2024

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Abstract:

This study aims to examine and analyze the effect of liabilities and equity on net profit in basic materials sub-sector companies listed on the Main Board of the Indonesia Stock Exchange (IDX) during the 2022–2024 period. This study adopts a quantitative approach with an explanatory design. The study population comprises 26 companies, from which 20 companies were selected via purposive sampling based on the availability and continuity of audited annual financial statements, yielding 60 observations. Multiple linear regression analysis was applied following the fulfillment of classical assumption tests (linearity, Kolmogorov-Smirnov normality, multicollinearity, Glejser heteroscedasticity, and Durbin-Watson autocorrelation) using SPSS. The partial test (t-test) results demonstrate that liabilities do not have a significant effect on net profit ($t\text{-count} = 0.701 < t\text{-table} = 2.002$; $\text{sig.} = 0.486 > 0.05$). Conversely, equity has a positive and statistically significant effect on net profit ($t\text{-count} = 2.861 > t\text{-table} = 2.002$; $\text{sig.} = 0.006 < 0.05$). Simultaneously (F-test), liabilities and equity exert a significant collective effect on net profit ($F\text{-count} = 12.683 > F\text{-table} = 3.159$; $\text{sig.} < 0.001$). The Adjusted R Square value of 0.284 indicates that 28.4% of the variance in net profit is explained by liabilities and equity, whereas the remaining 71.6% is influenced by other exogenous variables outside the estimated empirical model.

1. INTRODUCTION

The basic materials sector serves as a fundamental pillar of economic development in emerging markets, including Indonesia. This sector encompasses critical upstream industries such as mineral mining, metals, industrial chemicals, cement, and pulp and paper, which provide essential raw materials to strategic downstream industries including manufacturing, automotive, construction, and energy infrastructure. According to the Central Bureau of Statistics (BPS, 2024), basic metal manufacturing, chemical processing, and building material industries contribute significantly to gross

value added in national manufacturing. Moreover, strategic commodities such as nickel, coal, and bauxite represent primary export commodities generating vital foreign exchange reserves. Global market reports by the USGS (2023) indicate that Indonesia accounts for approximately 54% of global nickel production, positioning the nation as a key player in the international electric vehicle (EV) battery supply chain. This structural transformation aligns with downstream mineral industrialization policies aimed at advancing high-value domestic processing.

From a corporate finance perspective, companies operating in the basic materials industry are highly capital-intensive, requiring substantial capital expenditure for production facilities, heavy equipment, smelting infrastructure, and mineral exploration. To finance these substantial investments, corporations typically utilize a combination of debt (liabilities) and equity. The utilization of liabilities provides financial leverage that can accelerate operational expansion and potentially enhance earnings per share. However, an excessive reliance on debt introduces fixed financing obligations, contractual interest burdens, and solvency risks that may strain corporate liquidity, especially during commodity price downturns or macroeconomic volatility.

Conversely, equity financing represents internal funding derived from paid-in capital and retained earnings. In capital-intensive industries, equity acts as a critical financial cushion against global commodity fluctuations and operational risks. Unlike debt, equity financing does not impose mandatory interest payments or fixed maturity schedules, granting management operational flexibility in capital allocation. However, complete dependence on equity may restrict the potential return on equity by foregoing the benefits of financial leverage.

During the post-pandemic recovery period of 2022–2024, corporate net profits within the basic materials sub-sector listed on the IDX Main Board displayed pronounced volatility. While 2022 marked an initial recovery phase supported by firm commodity prices, performance in 2023 and 2024 faced headwinds from macroeconomic pressures, global monetary tightening, and exchange rate depreciations (from an average of Rp15,416/USD in 2023 to Rp16,162/USD in 2024). Emitents with high foreign currency-denominated liabilities experienced significant financing and operational cost pressures, whereas companies with robust equity structures exhibited greater resilience in maintaining profitability.

Prior empirical literature on the influence of liabilities and equity on corporate profitability presents inconsistent findings (research gap). Sahetapy (2023) found that liabilities had no significant effect on net profit, while equity exerted a significant positive impact. In contrast, Saputra et al. (2023) reported that equity was insignificant, whereas liabilities significantly influenced net profit. Furthermore, Rahman (2025) observed that liabilities were insignificant partially, but both variables significantly influenced net income simultaneously. Given these divergent empirical findings and the ongoing economic restructuring in the basic materials sector, this study aims to examine the partial and simultaneous effects of liabilities and equity on net profit in basic materials companies listed on the IDX Main Board during the 2022–2024 period.

2. RESEARCH METHOD

2.1 Research Design, Population, and Sample

This study employs a quantitative associative explanatory design. The study population consists of all 26 basic materials sub-sector companies listed on the Main Board of the Indonesia Stock Exchange (IDX) during the 2022–2024 observation period. A purposive sampling technique was applied based on specific inclusion criteria: (1) Listed under the basic materials sub-sector on the IDX; (2)

Continuously registered on the Main Board throughout 2022–2024; (3) Consistently published complete audited annual financial statements denominated in Indonesian Rupiah (IDR). Based on these criteria, 20 companies met the sample requirements over the 3-year period, resulting in a balanced panel of 60 observations.

Table 1. Research Sample List of Basic Materials Sub-Sector Companies

No	Ticker	Company Name	Sub-Industry / Main Products
1	ANTM	Aneka Tambang Tbk.	Mineral & Metal Mining
2	BRMS	Bumi Resources Minerals Tbk.	Mineral Mining
3	BRPT	Barito Pacific Tbk.	Petrochemicals & Energy
4	ESSA	ESSA Industries Indonesia Tbk.	Chemicals & Ammonia
5	INCO	Vale Indonesia Tbk.	Nickel Mining & Processing
6	INKP	Indah Kiat Pulp & Paper Tbk.	Pulp & Paper Manufacturing
7	INTP	Indocement Tunggul Prakarsa Tbk.	Cement & Building Materials
8	ISSP	Steel Pipe Industry of Indonesia Tbk.	Steel Pipes & Industrial Metals
9	LTLS	Lautan Luas Tbk.	Chemical Distribution & Manufacturing
10	MDKA	Merdeka Copper Gold Tbk.	Gold & Copper Mining
11	SMBR	Semen Baturaja Tbk.	Cement Industry
12	SMGR	Semen Indonesia (Persero) Tbk.	Cement & Building Materials
13	TINS	Timah Tbk.	Tin Mining & Smelting
14	TKIM	Pabrik Kertas Tjiwi Kimia Tbk.	Pulp & Paper Manufacturing
15	UNIC	Unggul Indah Cahaya Tbk.	Alkylbenzene & Chemicals
16	WTON	Wijaya Karya Beton Tbk.	Precast Concrete & Construction
17	PBID	Panca Budi Idaman Tbk.	Plastic Packaging Products
18	SAMF	Saraswanti Anugerah Makmur Tbk.	NPK Fertilizer & Agrochemicals
19	AVIA	Avia Avian Tbk.	Paints & Chemical Coatings
20	PDPP	Primadaya Plastisindo Tbk.	Plastic Packaging Products

2.2 Operational Definitions and Measurement of Variables

1. Liabilities (X1): Total contractual obligations including current liabilities and non-current liabilities owed by the entity to external creditors, measured in nominal IDR (Munawir, 2017).

2. Equity (X2): Total residual claims of shareholders on total corporate assets after settling all liabilities, measured in nominal IDR (Kieso et al., 2020).

3. Net Profit (Y): Net income after tax (EAT) generated from operational and non-operational activities during the fiscal year, measured in nominal IDR (Hery, 2017).

2.3 Data Analysis Techniques

Data were processed using IBM SPSS Statistics software through sequential procedures: (1) Descriptive statistical analysis; (2) Classical assumption tests including linearity (deviation from linearity > 0.05), One-Sample Kolmogorov-Smirnov normality test (Monte Carlo sig. > 0.05), multicollinearity test (Tolerance > 0.10 and VIF < 10), Glejser heteroscedasticity test (sig. > 0.05), and Durbin-Watson autocorrelation test ($dU < DW < 4-dU$); (3) Multiple Linear Regression Analysis using the model equation:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + e$$

and (4) Hypothesis testing comprising the partial t-test, simultaneous F-test, and coefficient of determination (Adjusted R^2).

3. DISCUSSION

3.1 Descriptive Statistical Analysis

Descriptive statistical results summarizing the central tendency and dispersion of the research variables across the 60 observations are presented in Table 2.

Table 2. Descriptive Statistics (N = 60)

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Liabilities (X1)	60	4.38	11.54	8.3274	1.73688
Equity (X2)	60	5.88	11.62	9.2753	1.43684
Net Profit (Y)	60	-4.33	9.51	5.9057	2.73081

As shown in Table 2, the Liabilities variable (X1) recorded an average value of 8.3274 with a standard deviation of 1.73688. Equity (X2) showed a mean value of 9.2753 with a standard deviation of 1.43684. Meanwhile, Net Profit (Y) exhibited a mean value of 5.9057, spanning from a minimum of -4.33 to a maximum of 9.51, accompanied by a standard deviation of 2.73081. The substantial dispersion in Net Profit reflects varying corporate resilience and market adaptability among sample firms during the post-pandemic macro adjustment phase.

3.2 Classical Assumption Test Results

1. Linearity Test: Linearity testing between Net Profit and Liabilities yielded a Deviation from Linearity significance value of 0.941 (> 0.05). Similarly, the test between Net Profit and Equity yielded a significance value of 0.246 (> 0.05). Thus, both explanatory variables fulfill the linear relationship requirement.

2. Normality Test: The One-Sample Kolmogorov-Smirnov test on unstandardized residuals produced a Monte Carlo 2-tailed significance of 0.518 (> 0.05). This confirms that regression residuals are normally distributed.

3. Multicollinearity Test: The Tolerance values for Liabilities and Equity are both 0.458 (> 0.10), with corresponding Variance Inflation Factor (VIF) values of 2.181 (< 10.00). These results confirm the complete absence of multicollinearity among the independent variables.

4. Heteroscedasticity Test: The Glejser test yielded significance values of 0.562 for Liabilities and 0.616 for Equity (both > 0.05), demonstrating that the empirical regression model is free from heteroscedasticity.

5. Autocorrelation Test: The Durbin-Watson (DW) statistic obtained is 1.765. For $n = 60$, $k = 2$, and $\alpha = 0.05$, the critical values are $dU = 1.651$ and $4-dU = 2.349$. Because $1.651 < 1.765 < 2.349$ ($dU < DW < 4-dU$), the model fulfills the non-autocorrelation assumption.

3.3 Multiple Linear Regression Analysis and Hypotheses Testing

The estimated regression coefficients and partial t-test statistics are summarized in Table 3.

Table 3. Multiple Linear Regression and Partial t-Test Results

Model / Variable	B	Std. Error	Beta	t-count	Sig.
(Constant)	0.529	1.288	-	0.410	0.683
Liabilities (X1)	0.117	0.168	0.114	0.701	0.486
Equity (X2)	0.580	0.203	0.466	2.861	0.006

From Table 3, the empirical multiple linear regression equation is specified as follows:

$$Y = 0.529 + 0.117 X_1 + 0.580 X_2 + e$$

The regression equation reveals: (1) The constant value of 0.529 indicates the baseline predicted net profit when liabilities and equity are held at zero; (2) The regression coefficient for liabilities ($b_1 = 0.117$) shows a positive slope; (3) The regression coefficient for equity ($b_2 = 0.580$) indicates a strong positive relationship with net profit.

Partial Hypothesis Testing (t-Test): With $df = n - k - 1 = 57$ and $\alpha = 0.05$, the critical t-table value is 2.002. The hypothesis test results indicate:

1. Liabilities (X1): $t\text{-count} = 0.701 < t\text{-table} = 2.002$ with a significance value of 0.486 (> 0.05). Therefore, H_0 is accepted and H_1 is rejected. Partially, Liabilities do not have a statistically significant effect on Net Profit.

2. Equity (X2): $t\text{-count} = 2.861 > t\text{-table} = 2.002$ with a significance value of 0.006 (< 0.05). Therefore, H_0 is rejected and H_2 is accepted. Partially, Equity exerts a positive and statistically significant effect on Net Profit.

Table 4. Simultaneous Test (F-Test) and Coefficient of Determination (R²)

R	R Square	Adjusted R ²	F-count	F-table	Sig. F
0.555	0.308	0.284	12.683	3.159	< 0.001

Simultaneous Hypothesis Testing (F-Test) and Model Goodness-of-Fit: As shown in Table 4, the F-count value is 12.683 > F-table of 3.159 (df = 57, $\alpha = 0.05$) with a significance probability of < 0.001 (< 0.05). Consequently, H3 is accepted, confirming that Liabilities and Equity simultaneously exert a statistically significant influence on Net Profit. The correlation coefficient (R = 0.555) indicates a moderately strong association, while the Adjusted R Square of 0.284 signifies that 28.4% of net profit variation is explained jointly by liabilities and equity.

3.4 Discussion

Effect of Liabilities on Net Profit: The empirical findings reveal that liabilities do not have a statistically significant effect on net profit in basic materials companies listed on the IDX during 2022–2024. Although the regression slope is positive ($b_1 = 0.117$), the financing costs associated with contractual interest payments, coupled with currency volatility on foreign-denominated debt, eroded the positive leverage effect. According to Brigham & Houston (2019), leverage creates positive shareholder value only when returns generated by debt-funded assets exceed the borrowing cost. In volatile commodity cycles, debt service obligations absorb operational cash flows, attenuating any statistical significance on net income. This finding is consistent with empirical evidence documented by Sahetapy (2023) and Rahman (2025).

Effect of Equity on Net Profit: The empirical results demonstrate that equity exerts a positive and statistically significant effect on net profit (t-count = 2.861; sig. = 0.006). A substantial equity base provides resilient, cost-effective internal funding without imposing mandatory debt service requirements (Hanafi & Halim, 2018). In capital-intensive sectors like basic materials, equity resilience allows firms to sustain long-term productive investments and navigate macroeconomic down-cycles effectively, directly driving bottom-line profitability. This finding corroborates the results of Sahetapy (2023).

Simultaneous Effect of Liabilities and Equity on Net Profit: The simultaneous test confirmed a significant joint impact of liabilities and equity on net profit (F-count = 12.683; sig. < 0.001). This underscores classical corporate finance theory (Weygandt et al., 2020), emphasizing that corporate profitability depends on the strategic alignment and balanced governance of both external debt and internal equity financing.

4 CONCLUSION

Based on the empirical analysis and discussion, the conclusions are as follows:

1. Liabilities partially do not have a statistically significant effect on net profit in basic materials sub-sector companies listed on the IDX Main Board during 2022–2024 (t-count = 0.701 < t-table = 2.002; sig. = 0.486).
2. Equity partially has a positive and statistically significant effect on net profit in basic materials sub-sector companies listed on the IDX Main Board during 2022–2024 (t-count = 2.861 > t-table = 2.002; sig. = 0.006).

3. Liabilities and equity simultaneously exert a statistically significant effect on net profit ($F\text{-count} = 12.683 > F\text{-table} = 3.159$; $\text{sig.} < 0.001$), contributing an explanatory power (Adjusted R^2) of 28.4%.

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