

Analysis of the influence of Business Risk, Profitability, Investment Decisions and Dividend Policy on Capital Structure in the Manufacturing Sector on the Indonesian Stock Exchange

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Abstract— The purpose of this study is to investigate the effect of business risk, profitability, investment decisions and dividend policy on the capital structure. This study addresses a gap in the existing literature, as previous studies have not provided conclusive results on this topic. The study uses secondary data from Indonesian listed industrial companies from 2019 to 2023, covering 44 companies and 220 data points. The sample size was determined using the purposive sampling method, in which samples are selected based on certain criteria. Analysis was performed using multiple linear regression with Eviews12 for data processing. The results show that business risk (Risk), profitability (ROE) and investment decisions (PER) significantly affect capital structure (DER), while dividend policy (DPR) has no significant effect on capital structure (DER).

Keywords— *Capital Structure, Business Risk, Profitability, Investment Decisions, Dividend Policy*

I. INTRODUCTION

This paper focuses on analyzing whether business risk, profitability, investment decisions & dividend policy affect the existing capital structure of the industry. The manufacturing sector of the Indonesian stock market includes industries that process raw materials into finished products. The most important sub-sectors are the food and beverage industry, the chemical and medical textile and clothing industry, and the automotive industry. The manufacturing industry plays an important role in Indonesia's economic development due to its large contribution to GDP. An important part of company management is financial management, whose task is to calculate investment and financial decisions that can achieve the company's goals. Capital structure has broad implications, especially when a company uses large amounts of debt. Thus, the burden borne by the company increases and increases the financial risk. Capital structure is an important financial element for any company because it supports the company's operations. The head of the company must have the opportunity to make decisions about the source of funding obtained, and the means used by the company do not burden the company. Therefore, companies must apply pecking order theory and exchange theory. The result of this research align with both the Pecking Order Theory and Trade-off Theory. Myers and Majluf introduced the Pecking Order Theory, which underpins capital structure theory by explaining a company's decision-making process regarding funding sources. This theory posits that companies prefer to use internal funds first and only turn to external funding when internal resources are insufficient. Among external funding options, debt is favored due to its lower costs compared to issuing equity. The Trade-off Theory, which evolved from the Modigliani-Miller theory, integrates bankruptcy and agency costs. According to Mamduh (2008), the Trade-off Theory suggests that managers balance the tax benefits of debt against the potential costs of bankruptcy when deciding on the capital structure. Consequently, debt is often viewed as the most cost-effective source of external funding, leading companies to utilize debt to achieve their long-term objectives (Wijaya, 2014). This article is structured as follows: Part

I contains an introduction; Part II describes the research methods used in this study; Part III presents results and discussions; and Section IV concludes the study.

II. RESEARCH METHODS

This research utilizes a panel data model with a quantitative research approach and secondary data obtained from the Indonesia Stock Exchange. The sample consists of 44 manufacturing sector companies for the 2019-2023 period. The sample was selected using purposive sampling, based on criteria such as meeting IPO standards, distributing dividend, and using the Rupiah. The following are the measurements for each independent and dependent variable: according to Horne et al. (2012), the dependent variable Capital Structure can be measured by (DER), According to Ghazali (2013) the independent variable Business Risk can be measured by risk, According to Kasmir (2012;205) the independent variable Profitability can be measured by Return on Equity (ROE), the independent variable for Investment Decisions according to Brigham and Houston (2011;150) can be measured by the Price-Earnings Ratio (PER), the independent variable for Dividend Policy according to Sudana (2015:26) can be measured by the (DPR).

Companies facing significant commercial risks typically depend on equity financing as a means of mitigating financial issues and preserving operational adaptability. According to research by Theresia (2007), Mohammed (2012), Wimelda and Marlinah (2013), Joni and Lina (2010), and Theresia (2007), business risk positively affects capital structure. This indicates that a company's structure of capital is frequently in need of more debt as business risk increase.

H1: Business risk hurts capital structure

A factor which influences capital structure is profitability. The ability of a company to turn a profit within a particular period of time is called out as profitability. The capacity of a business to turn a profit draws in capitalists. Capital structure has a significant and beneficial effect by profitability, according to Hardianto (2008) and Najjar (2011).

H2: Profitability hurts capital structure.

Investment can be made in a variety of ways, such as investing financial assets like shares, bonds, or deposits or physical assets like land, gold, machinery, or structures. The company's ability to execute investment decisions is significantly influenced by the amount of money available from both internal and external funding sources. According to Nugroho's (2006) research, capital structure benefits from investment decisions made. This implies that the debt ratio will increase corresponding to the Price-Earnings Ratio (PER).

H3: Investment decisions hurts capital structure.

Based on Natalia's (2014) research, businesses that don't distribute a lot of dividends to their shareholders typically keep more of their earnings in-house, which reduces their need for outside funding and lowers their capital structure. On the other combination, larger payments for dividends result in lower retained earnings, which forces businesses to use additional external capital (debt), increasing their capital structure. Other research by Sumani (2012), Ida (2013), and Ayu and Santi (2017) found an important relationship between dividend policy and capital structure.

H4: Dividend policy hurts capital structure.

III. RESULT AND DISCUSSION

RESULT

Table 1. Chow

Effect Test	Statistic	df	Prob.
Cross-section F	14.393522	(43.172)	0.0000
Cross-section Chi-square	335.654917	43	0.0000

Source: Eviews 12 (2024)

Prob of 0.0000 < 0.05 indicates that the FEM model is selected.

Table 2. Hausman

Test Summary	Chi-Sq Statistic	Chi-Sq d.f.	Prob
Cross-section random	8.215227	4	0.0840

Source: Eviews 12 (2024)

Prob of 0.0840 > 0.05 indicates that the REM model was selected.

Table 3. LM

	Cross-section	Test Hypothesis Time	Both
Breusch-Pagan	202.7950 (0.0000)	2.288561 (0.1303)	205.0835 (0.0000)
Honda	14.24061 (0.0000)	-1.512799 (0.9348)	8.999921 (0.0000)
King-Wu	14.24061 (0.0000)	-1.512799 (0.9348)	2.707419 (0.0034)
Standardized Honda	15.06077 (0.0000)	-1.338546 (0.9096)	5.104755 (0.0000)
Standardized King-Wu	15.06077 (0.0000)	-1.338546 (0.9096)	0.047586 (0.4810)
Gourieroux, et al.	--	--	202.7950 (0.0000)

Source : Eviews 12 (2024)

The Prob value is 0.0000, which is less than 0.05, indicating that the REM model was chosen.

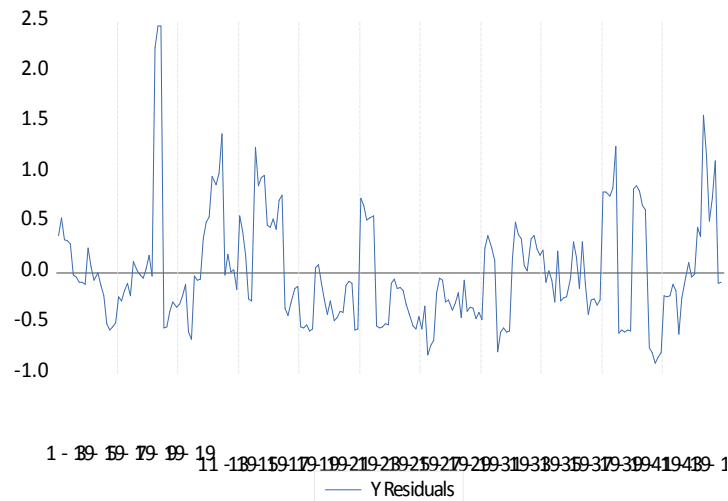
Table 4. Multicollinearity Test Correlation

	X1	X2	X3	X4
X1	1.000000	-0.041559	-0.109751	-0.075674
X2	-0.041559	1.000000	0.138181	0.242442
X3	-0.109751	0.138181	1.000000	-0.020885
X4	-0.075674	0.242442	-0.020885	1.000000

Source : Eviews 12 (2024)

The correlation coefficient between X1 and X2 is -0.041559, which is below 0,85. This indicates that there is no multicollinearity issue in the tabel above

Table 5. Heteroscedasticity Test



Source : Eviews 12 (2024)

$$Y = 0.66 - 0.05 \cdot X1 + 1.05 \cdot X2 - 1.02 \cdot X3 - 0.01 \cdot X4$$

The explanation is as follows:

1. A constant value of 0.66 means that, holding all other variables constant (Business Risk X1, Profitability X2, Investment Decisions X3, and Dividend Policy X4), the Capital Structure variable (Y) will increase by 66%.
2. The Business Risk variable (X1) has a beta coefficient value of -0.05. The Capital Structure variable (Y) will decrease by 5% if the Business Risk variable (X1) increases by 5% with all other variables equal. On the other hand, the Capital Structure variable (Y) will rise by 5% in the event that the Business Risk variable (X1) falls by 5%.
3. The profitability variable (X2) has a beta coefficient value of 1.05. The Capital Structure variable (Y) will increase by 105% if the Profitability variable (X2) increases by 105%, all other variables being held constant. On the other hand, a 105% fall in the Profitability variable (X2) will result in a 105% decrease in the Capital Structure variable (Y).
4. The Investment Decision variable (X3) has a beta coefficient value of -1.02. The Capital Structure variable (Y) will fall by 102% if the Investment Decision variable (X3) rises by 102% while keeping all other variables equal. On the other hand, the Capital Structure variable (Y) will rise by 102% in the event that the Investment Decision variable (X3) falls by 102%.
5. The Dividend Policy variable (X4) has a beta coefficient value of -0.01. The Capital Structure variable (Y) will fall by 1% if the Dividend Policy variable (X4) rises by 1% while keeping all other variables fixed. On the different together, the Capital Structure variable (Y) will rise by 1% in a situation that the Dividend Policy variable (X4) decreases by 1%.

Table 6. F Test and Determinant Coefficient

R-squared	0.184012
Adjusted R-squared	0.168831
S.E. of regression	0.548261
Sum squared resid	64.62697
Log likelihood	-177.4169
F-statistic	12.12105
Prob (F-statistic)	0.000000

Source : Eviews 12 (2024)

The calculated F value of 12.12105 is greater than the critical F value from the table (2.413638942). (sig.) is $0.00000 > 0.05$. Thus the null hypothesis (H₀) is rejected and the alternative hypothesis (H_a) is accepted. This means that the variables Risk, ROE, PER, and DPR have a significant effect on the Debt-to-Equity Ratio (DER) of manufacturing companies from 2019 to 2023. The R-square value is 0.168831 or 16.8831%. This shows that the condition of the independent variables (Risk, ROE, PER, and DPR) contributed 16.8831% to the variation in the DER variable in manufacturing companies from 2019 to 2023. The remaining 83.1169% of the variation was caused by other factors that not included in these variables.

Table 7. T test

Variable	Coefficient	Std. Error	t-Statistic	Prob
C	0.789379	0.054260	14.54817	0.0000
X1	-0.100716	0.114184	-0.882046	0.3787
X2	0.783306	0.165570	4.730977	0.0000
X3	-2.124314	0.371461	-5.718801	0.0000
X4	-0.000773	0.000454	-1.703233	0.0000

Source : Eviews 12 (2024)

a. The t-test on the risk variable (X1) yielded a calculated t value of 0.882046, which is less than the critical t value (1.970905601), and a significance value (sig.) of 0.3787, which is greater than 0.05. As a result, the alternative hypothesis (H_a) is rejected and the null hypothesis (H₀) is accepted. This indicates that, from 2019 to 2023, (DER) of manufacturing companies is not significantly impacted by the Risk variable (X1). These findings are consistent with the earlier study by Primantara & Dewi (2016), but differ from those of Muhammad Jalil (2018), who found that business risk significantly affects capital structure.

b. The t-test on the ROE variable (X2) produced a calculated t value of 4.730977, which is higher than the critical t value (1.970905601), and a significance value (sig.) of 0.0000, which is less than 0.05. Consequently, the alternative hypothesis (H_a) is accepted and the null hypothesis (H₀) is rejected. This suggests that, from 2019 to 2023, (DER) of manufacturing companies is highly influenced by the ROE (X2) variable. These results support earlier studies by Dewi & Sudiarta (2017) and Khoiriyah & Rasyid (2020), but contradict findings by Primantara & Dewi (2016) and Prastika & Candradewi (2019), which indicated that profitability had a minimal and negative effect on capital structure.

c. The t-test results for the PER variable (X3) showed a significance value (sig.) of 0.0000, which is less than 0.05, and a calculated t value of 5.718801, which is greater than the critical t value (1.970905601). Therefore, the alternative hypothesis (H_a) is accepted and the null hypothesis (H₀) is rejected. This indicates that, from 2019 to 2023, (DER) of manufacturing companies is significantly affected by the PER (X3) variable. Our findings are corroborated by previous research by Tansyawati & Asyik (2015), Arsyada, Sukirman & Wahyuningrum (2022), and Pertiwi & Artini (2014), which revealed a substantial impact of investment decisions on capital structure.

d. The t-test on the DPR variable (X4) resulted in a calculated t value of 1.703233, which is less than the critical t value (1.970905601), and a significance value (sig.) of 0.0900, which is greater than 0.05. Consequently, the null hypothesis (H0) is accepted and the alternative hypothesis (Ha) is rejected. This indicates that the DPR (X4) variable does not significantly affect (DER) of manufacturing companies from 2019 to 2023. These results do not align with the findings of Pertiwi & Darmayanti (2018), who reported a positive and significant effect of dividend policy on capital structure, but are supported by the research of Farisa & Widati (2017), which found no significant effect of dividend policy on capital structure.

IV. DISCUSSION

Business risk with a probability value of 0.3787 (greater than 0.05) shows no significant effect on capital structure. Typically, higher risk correlates with higher debt ratios as investors are often drawn to higher-risk companies, expecting higher returns. Profitability, with a probability value of 0.0000 (less than 0.05), significantly influences capital structure. Higher profitability leads to lower debt ratios, consistent with pecking order theory, meaning that larger firms find it easier to raise external capital. Companies with high profits usually rely less on debt. Investment decisions, also with a probability value of 0.0000 (less than 0.05), significantly impact capital structure. A higher (PER) is associated with higher debt ratios. This suggests that favorable investment decisions, reflected in rising share values and earnings per share, attract potential creditors. Dividend policy, with a probability value of 0.0090 (less than 0.05), also significantly affects capital structure. Distributing dividends reduces the internal cash reserves available for operations, thereby increasing the need for external funds for operational and investment purposes.

V. CONCLUSION

Higher business risk tends to correlate with increased use of debt, although companies with substantial business risk typically use less debt compared to those with lower risk. Profitability significantly influences capital structure. Higher profitability is associated with lower capital structure. This aligns with the pecking order theory, which posits that larger companies can more easily access the capital market for external funds, thus relying less on debt. Investment decisions have a significant effect on capital structure. Higher PER (Price-Earnings Ratio) corresponds to higher debt ratios. Increasing investment decisions, alongside rising share values and earnings per share, indicate a favorable company condition that attracts potential creditors. Dividend policy significantly affects capital structure. Companies distributing low dividends signal to the market that profits are low, This encourages the firm to seek external resources, usually in the form of debt, to meet its financial needs, resulting in a higher capital structure.

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