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The determinants of capital structure: Evidence from public listed healthcare companies in Indonesia and Singapore

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Abstract

This study analyzes the determinants of capital structure in healthcare companies listed on the Indonesia Stock Exchange and Singapore Exchange during the period 2020–2024. The variables tested include profitability (ROA), company size (total assets), tangibility of assets, and the ratio of depreciation to total assets. Using panel data regression with fixed and random effects models, the findings indicate that the determinants of capital structure differ between Indonesia and Singapore, with depreciation being the only factor that exhibits a consistently positive and statistically significant effect in both countries. These findings suggest that capital structure decisions in the health sector are influenced by company characteristics and differences in institutional conditions and financial market depth in each country, and confirm that no single capital structure theory can explain leverage behavior universally

Keywords: Capital structure, Healthcare, Indonesia, Singapore

1.Introduction

Capital structure decisions are a fundamental issue in corporate finance and continue to be debated in various industrial sectors, including the healthcare sector, which is capital intensive, heavily regulated, and requires significant long-term investment. Although the basic Modigliani and Miller theory states that capital structure does not affect company value in perfect market conditions, various contemporary studies show that the reality in modern markets is very different due to frictions such as information asymmetry, bankruptcy risk, and rapidly changing industry dynamics. Recent studies (Díaz-Rivera, 2024; Khan et al., 2024; Rehan et al., 2023) emphasizes that capital structure determinants are greatly influenced by macroeconomic conditions, company characteristics, and institutional factors within the country. In the context of both developing and developed countries, the capital structure of companies in the healthcare sector has become increasingly important in the wake of the COVID-19 pandemic, as this sector faces a sharp increase in funding needs for infrastructure, medical technology, service digitization, and capacity expansion.

The comparison between Indonesia and Singapore provides a highly relevant context as the two countries show different patterns of economic recovery, Indonesia experienced a U-shaped recovery, while Singapore experienced a V-shaped rebound. Indonesia's stable economic recovery from 2021 to 2024 (around 5% per year) is supported by a large domestic market, middle-class growth, and increased healthcare spending through BPJS/JKN, which has become a pillar of healthcare revenue amid fluctuating demand. This condition is in line with the findings of (Almustafa et al., 2023; Bajaj et al., 2021) which show that macro stability in developing countries encourages companies to choose more conservative leverage. Conversely, Singapore's economy recovered very quickly in 2021–2022 thanks to global integration and the resurgence of international mobility, which encouraged a rapid recovery in the medical tourism sector. Studies by (Qadeer & Sarfraz, 2025) emphasize that companies in high-income countries with international healthcare markets tend to use more aggressive capital structures due to stronger financial access and high growth expectations.

The performance of the healthcare sector's revenue also shows different dynamics between the two countries. In Indonesia, pharmaceutical companies enjoyed a surge in domestic demand for medicines, vaccines, and diagnostics during the pandemic, while healthcare is only gradually recovering in 2022–

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2024, in line with the recovery of elective medical activities. These findings are in line with a study by (Hermawan et al., 2023) which shows that Indonesia's pharmaceutical sub-sector maintained stable revenue growth despite facing global raw material cost pressures. In Singapore, healthcare groups such as IHH Healthcare and Raffles Medical experienced a faster revenue recovery driven by the return of international patients, in line with the empirical report by (Ullah et al., 2021) which emphasizes the strong rebound of medical tourism in Southeast Asia following the reopening of borders. These revenue conditions are important in capital structure decisions, as stated by (Naomi, 2023) that sustainable revenues affect a company's ability to finance expansion through debt.

The profitability of the healthcare sector in both countries also shows different trends that can affect leverage. In Indonesia, the profit margins of pharmaceutical companies remained relatively stable despite increased production costs in 2021–2022, while healthcare recorded increased profitability in line with the increase in patient volume. This is consistent with the findings of (Kondilis & Benos, 2023) which emphasize that profitability increased after the recovery of non-COVID healthcare activities. Meanwhile, healthcare companies in Singapore maintained high EBITDA margins due to their large operational scale and premium service segments. (Umeaduma, 2022) shows that high profitability encourages companies in Singapore to maintain a more flexible capital structure, including the use of larger amounts of debt for regional expansion. The findings of (Holopainen et al., 2022) also confirm that high profitability is often associated with moderate to high leverage in healthcare companies focused on technology expansion and facility networks.

The next significant difference is seen in financing and investment strategies. Indonesian healthcare companies tended to delay expansion in 2020–2021 due to economic uncertainty, but are slowly increasing capital expenditure in 2022–2024 for new healthcare development, facility upgrades, and digital services. (Dimyati, 2024) study shows that Indonesian companies adopted a more cautious investment strategy, using leverage selectively. In contrast, healthcare companies in Singapore showed a strong capex cycle after the pandemic and undertook significant international expansion, including acquisitions and the opening of overseas facilities, in line with the findings of (Kim et al., 2022) which showed high M&A activity in the Asian healthcare sector. This reinforces the argument of (Al-Fadhat, 2022) research that greater access to capital and a stable credit climate allow Singaporean companies to use leverage more aggressively than Indonesian companies.

Macro dynamics, income performance, and investment strategies are highly relevant in relation to recent research findings on capital structure determinants. Studies in the healthcare sector show that factors such as company size, profitability, asset structure, liquidity, business risk, and growth are the main determinants of leverage (Sulaiman & Khalid, 2023). In Indonesia, recent research confirms that company variables such as firm size, asset tangibility, and revenue growth play a dominant role in explaining the differences in leverage between healthcare and pharmaceutical companies (Parulian et al., 2024). Meanwhile, in Singapore, capital structure is more influenced by external factors such as the availability of international financing, credit ratings, and regional growth expectations (Cheong & Hoang, 2021). This situation highlights an important research gap: there have not been many studies that directly compare the determinants of capital structure in healthcare companies in Indonesia and Singapore within the same empirical framework, even though the two countries have different healthcare market characteristics, recovery patterns, and access to funding.

Against this backdrop, this study aims to analyze and compare the determinants of capital structure in healthcare companies listed on the Indonesia Stock Exchange and Singapore Exchange.

This study contributes to the literature by combining healthcare industry performance and firm-specific characteristics in a cross-country empirical model. In addition, this study enriches the understanding of how healthcare companies in developing and developed countries respond to market pressures and expansion opportunities through leverage decisions.

2. Literature Review on Capital Structure Theory

Capital structure is defined as the combination of debt and equity used by a company to finance its assets and operations. Capital structure decisions play an important role because they affect financial risk and company value. According to (Houston & Brigham, 2018) the right capital structure can minimize the weighted average cost of capital and maximize company value. Companies must consider the balance between risk and return when determining the proportion of funding. Gitman and Zutter (2023) explain that capital structure also reflects management policy in managing long-term funding sources. Therefore, capital structure theory is the main foundation in corporate finance research.

The classical capital structure theory was proposed by (Modigliani & Miller, 1958) who stated that capital structure does not affect company value in perfect market conditions. The assumptions used include the absence of taxes, bankruptcy costs, and information asymmetry. In a subsequent development, (Modigliani & Miller, 1963) incorporated the element of taxation and showed that the use of debt can increase the value of a company through tax benefits. According to (Ghanzouri et al., 2022) this theory became the basis for the emergence of modern capital structure theories. Although idealistic in nature, Modigliani and Miller's theory provides an important conceptual framework for understanding financing decisions. This theory is often used as a starting point for analyzing a company's capital structure.

Trade-Off Theory explains that companies will determine the optimal capital structure by balancing the benefits and costs of using debt. According to (Myers, 1984) the main benefit of debt comes from tax savings, while the costs of debt include bankruptcy risk and agency costs. Companies will increase their use of debt to the point where the marginal benefit equals the marginal cost. (Houston & Brigham, 2018) state that companies with stable income and high tangible assets tend to have higher levels of debt. Trade-Off Theory emphasizes the importance of finding the optimal capital structure. This theory is widely used to explain variations in leverage between companies.

Besides Trade-Off Theory, Pecking Order Theory is also an important theory in capital structure. This theory was proposed by (Myers & Majluf, 1984) and is based on the asymmetry of information between management and investors. According to this theory, companies have a preferred order of financing, namely internal funds, debt, and finally equity. (Gautam & Purohit, 2024) explain that companies with high profitability tend to use retained earnings rather than debt. This causes a negative relationship between profitability and leverage. The Pecking Order Theory emphasizes that capital structure is formed as a result of cumulative financing decisions.

Agency Theory also makes an important contribution to explaining corporate capital structure. (Jensen & Meckling, 2019) argue that conflicts of interest between managers and shareholders can influence financing decisions. The use of debt can serve as a control mechanism to reduce opportunistic behavior by managers. According to (Ghanzouri et al., 2022) debt creates fixed payment obligations that can increase management discipline. However, excessive use of debt can cause conflicts between shareholders and creditors. Therefore, Agency Theory emphasizes the need for balance in the use of debt.

Modern capital structure theory also highlights the influence of company characteristics on financing decisions. According to (Titman & Wessels, 1988) factors such as company size, asset structure, and growth opportunities play a role in determining the level of leverage. Large companies tend to have better access to funding and lower bankruptcy risk. (Ghanzouri et al., 2022) state that companies with high tangible assets find it easier to obtain debt because they have collateral. In addition, companies with high growth opportunities tend to avoid debt to reduce the risk of underinvestment. Thus, capital structure theory is not only normative but also empirical.

3. The model

3.1. The dependent variables

The dependent variable is a variable that is influenced by independent variables in a research model. According to (Okoye & Hosseini, 2024) the dependent variable represents the main

phenomenon that researchers want to explain. In capital structure research, the dependent variable generally reflects a company's funding policy. (Athari & Bahreini, 2023) state that capital structure policy can be measured through the leverage ratio. The selection of dependent variables must be relevant to the research objectives and the theory used. Therefore, leverage is often used as a proxy for a company's capital structure.

3.1.1. Leverage

Leverage describes the extent to which a company uses debt to finance its assets. According to (Houston & Brigham, 2018) leverage indicates the level of financial risk faced by a company due to fixed payment obligations. Leverage is usually measured using the debt-to-total assets ratio or debt-to-equity ratio. (Kinyua & Ochieng, 2022; Ahmed et al., 2024) explain that the higher the leverage, the greater the company's dependence on external financing. In Trade-Off theory, leverage reflects the balance between tax benefits and bankruptcy risk. Therefore, leverage is a key indicator in capital structure analysis.

3.2. Profitability (ROA)

Profitability indicates a company's ability to generate profits from its assets. Return on Assets (ROA) is often used as an indicator of profitability because it reflects the efficiency of asset utilization. According to (Habib, 2023) a high ROA indicates good operational performance. In the Pecking Order Theory, (Myers & Majluf, 1984) state that more profitable companies tend to use internal funds rather than debt. This causes a negative relationship between profitability and leverage. Therefore, profitability is an important determinant in a company's capital structure.

3.3. Total assets

Total assets reflect the size of a company and its economic resources. According to (Houston & Brigham, 2018) companies with large total assets generally have better operational stability. Company size is often associated with the ability to obtain external financing. (Ghanzouri et al., 2022) state that large companies have a relatively lower risk of bankruptcy, making it easier for them to access debt. In Trade-Off Theory, company size is positively related to leverage. Thus, total assets are used as a proxy for company size in capital structure research.

3.4. Tangibility of assets

The tangibility of assets indicates the proportion of tangible assets to a company's total assets. According to (Titman & Wessels, 1988) tangible assets such as land, buildings, and equipment can be used as collateral for debt. Companies with high tangibility tend to find it easier to obtain debt-based financing. (Ghanzouri et al., 2022) state that high tangible assets can reduce creditor risk. In Trade-Off Theory, tangibility has a positive relationship with leverage. Therefore, the tangibility of assets is an important variable in capital structure analysis.

3.5. Depreciation to total assets

Depreciation to total assets describes the rate of depreciation of fixed assets relative to a company's total assets. According to (Houston & Brigham, 2018) depreciation can function as a non-debt tax shield that reduces a company's tax liability. (DeAngelo & Masulis, 1980) explain that companies with high non-debt tax shields tend to reduce their use of debt. This is because the tax benefits of depreciation can replace the tax benefits of debt interest. (Ghanzouri et al., 2022; Jam et al., 2025) emphasize that the depreciation ratio has the potential to influence capital structure decisions. Therefore, depreciation to total assets is used as a determinant of leverage.

Based on the variables identified in the theoretical framework, this study tests a set of hypotheses to address its objective of examining whether firm-specific factors namely profitability, firm size, asset tangibility, and the depreciation-to-total-assets ratio, significantly determine leverage levels in Indonesia and Singapore. Guided by the literature, the hypotheses propose that profitability and depreciation are negatively related to leverage, while firm size and asset tangibility are positively related. In line with the theoretical framework, a panel data model is specified to test these hypotheses, allowing leverage to vary across firms and over time:

$$LEV_{i,t} = \beta 0 + \beta 1 ROA_{i,t} + \beta 2 TA_{i,t} + \beta 3 TAN_{i,t} + \beta 4 DEP_{i,t} + \mu_i + \varepsilon_{i,t}$$

whereby, $LEV_{i,t}$ = total debt ratio for the ith firm at

time t; $\beta 0$ = constant, $\beta 1$ to $\beta 5$ = coefficient of explanatory variables; ROAi,t = profitability of ith firm at time t; TA$i,t$ = firm size of ith firm at time t; TANi,t = tangibility of ith firm at time t; DEPi,t = depreciation to total assets of ith firm at time t; μ_i represents unobserved firm-specific characteristics; and $\varepsilon i,t$ is the error term.

Table 1. Summary of selected empirical studies on the determinants of capital structure

Variables to Test	Positive Influence on Capital Structure	Negative Influence on Capital Structure
Profitability (ROA)	(Okeke et al., 2025; Tsolas, 2021)	(Bensaadi et al., 2023; Zhao et al., 2022)
Firm Size (Total Assets)	(Chatterjee & Eyigungor, 2023; Okeke et al., 2025)	(Ahmed et al., 2023; Alabdulkarim et al., 2024)
Tangibility of Assets	(Mazumder & Rao, 2022; Riaz et al., 2022)	(Sihombing et al., 2023; Vengesai, 2023)
Depreciation to Total Assets (NDTS)	(Kandel et al., 2024; Yisau et al., 2024)	(Abbas & Yahawi, 2024; Pradana et al., 2025)

4. The data

The total number of companies listed on the Indonesia Stock Exchange (IDX) and Singapore Exchange (SGX) as of December 31, 2024, is 965 and 592, respectively. This study covers all non-financial companies listed on both exchanges. Financial companies such as banks, insurance companies, and financing institutions are excluded because they have different accounting categories and are subject to special regulations. This study uses *balanced panel data*, so companies with incomplete data (*missing values*) and observations with negative book equity values are eliminated. The final sample consists of 35 Indonesian companies and 29 Singaporean companies that meet the research criteria. Company data was collected for the period 2020–2024, with company-level data sourced from DataStream/Refinitiv and country-level data sourced from the World Bank. All financial and economic data was converted and presented in IDR.

Table 2 presents a summary of descriptive statistics for leverage in Indonesia and Singapore during the period 2020–2024. Indonesia has an average leverage value of 0.4629, with a median value of 0.3580, a maximum value of 2.8507, and a minimum value of 0.0000. The standard deviation is 0.4256, while the skewness value of 3.3208 and kurtosis of 17.2209 indicate that the leverage distribution is heavily skewed to the right with a long tail (heavy-tailed). On the other hand, Singapore has an average leverage value of 0.4542, a median of 0.4062, a maximum value of 3.9164, and a minimum value of 0.0000. The standard deviation is 0.4075, with a skewness of 4.8399 and a kurtosis of 38.7515, which indicates a distribution that is very right-skewed and a much sharper distribution peak compared to Indonesia. Overall, both countries show a positively skewed leverage distribution pattern, indicating that there are several companies with very high leverage levels.

Table 2. Descriptive statistics of leverage for Indonesia and Singapore

	Indonesia	Singapore
Mean	0.462932	0.454224
Median	0.358026	0.406227
Maximum	2.850723	3.916422
Minimum	0.000000	0.000000
Std. Dev	0.425600	0.407496
Skewness	3.320764	4.839993
Kurtosis	17.22095	38.75152

5. Empirical Results

This section presents a summary of the panel data regression results to determine the factors that influence capital structure in the healthcare sector in Indonesia and Singapore. Both regression models show strong R-squared and Adjusted R-squared values, indicating that the independent variables used are able to adequately explain the proportion of leverage variability in each country. In addition, the F-statistic values in both models are significant,

indicating that the statistical models used are appropriate (fit) in explaining the relationship between the research variables. The Durbin–Watson values, which are around 2, also indicate that the models do not experience autocorrelation problems, so the estimation results can be considered reliable for further analysis.

5.1. Indonesia regression results

Based on Table 5.1, the results of fixed effect regression for healthcare companies in Indonesia show that the t-statistic value indicates that not all independent variables have a significant effect on leverage at a significance level of 1%. Of the four variables tested, only tangibility of assets and depreciation to total assets were found to have a significant effect, so hypotheses H3 and H4 are accepted, while H1 and H2 are rejected. The capital structure regression equation for the healthcare sector in Indonesia can be formulated as follows:

$$LEV_{it} = 0.046673 + 0.000614\, ROA_{it} - 0.004542\, TA_{it} + 0.838140\, TAN_{it} + 10.19425\, DEP_{it} + \mu_i + \varepsilon_{it}$$

The estimation results show that profitability (ROA) has a positive coefficient of 0.000614, but it is not statistically significant (p-value = 0.7517). This indicates that the profitability level of healthcare companies in Indonesia does not affect leverage decisions, so this finding does not support the pecking order theory, which states that more profitable companies tend to use less debt.

The total assets variable as a proxy for company size has a negative coefficient of -0.004542 and is not significant (p-value = 0.5540). Thus, an increase in the size of healthcare companies in Indonesia is not proven to significantly increase or decrease leverage, indicating that company scale is not a major factor in determining the capital structure of this sector. Conversely, the tangibility of assets shows a positive and significant effect on leverage with a coefficient of 0.838140 and a p-value of 0.0005. This finding indicates that the greater the proportion of fixed assets owned by healthcare companies, the greater the tendency for companies to use debt. This is in line with trade-off theory, where tangible assets can be used as collateral to obtain external financing.

Table 3. The fixed effect regression result for the determinants of capital structure for Indonesia

	Coefficient	Standard Error	t-Statistic	Probability
Constant	0.046673	0.018993	2.457366	0.0157
Profitability (ROA)	0.000614	0.001935	0.317303	0.7517
Total Assets	-0.00454	0.007651	-0.5937	0.554
Tangibility of Assets	0.83814	0.233929	3.582888	0.0005
Depreciation to Total Assets	10.19425	2.338065	4.360121	0
R-squared	0.595211	F-statistic	3.883418	0
Adjusted R-squared	0.441941	Durbin-Watson statistic	2.520054	

The depreciation to total assets ratio has a very large positive coefficient, namely 10.19425, and is significant at the 1% level (p-value = 0.0000). This result indicates that an increase in the depreciation ratio substantially increases the leverage of healthcare companies. High depreciation reflects the intensity of large fixed assets, so that companies have a higher capacity to access debt, especially in long-term financing.

5.2. Singapore regression results

The t-statistic values indicate that not all independent variables are significant at the 1% significance level. Only some hypotheses are not rejected, specifically H1 and H4, which means that profitability and depreciation to total assets have a significant effect on healthcare leverage in Singapore.

Meanwhile, H2 and H3 are rejected because total assets and tangibility of assets are not significant. The regression equation for the determinants of capital structure in the healthcare sector in Singapore is as follows:

$$LEV_{it} = 0.020682 - 0.007675\, ROA_{it} + 0.009757\, TA_{it} + 0.065601\, TAN_{it} + 2.080831\, DEP_{it} + \mu_i + \varepsilon_{it}$$

Profitability has a negative effect on leverage, where a 1% increase in profitability will reduce the tendency of healthcare companies to use leverage by 0.76%. Total assets have a positive coefficient as hypothesized, but the effect is not significant, so an increase in company size does not appear to increase leverage. Tangibility of assets also has a positive coefficient, but its insignificance indicates that an increase in the proportion of fixed assets does not have a significant effect on leverage.

Table 4. The fixed effect regression result for the determinants of capital structure for Singapore

	Coefficient	Standard Error	t-Statistic	Probability
Constant	0.020682	0.254282	0.081334	0.9353
Profitability (ROA)	-0.00768	0.00094	-8.16946	0
Total Assets	0.009757	0.009648	1.011244	0.3136
Tangibility of Assets	0.065601	0.158006	0.415182	0.6786
Depreciation to Total Assets	2.080831	0.857416	2.426861	0.0165
R-squared	0.469543	F-statistic	30.98082	0
Adjusted R-squared	0.454387	Durbin-Watson statistic	2.057082	

Depreciation to total assets has a coefficient value of 2.080831 and is significant at a 5% significance level, indicating a positive and strong effect on leverage. Thus, a 1% increase in the depreciation ratio will substantially increase healthcare leverage. Overall, the estimation results show that only profitability and depreciation have a significant effect on healthcare leverage in Singapore, while total assets and tangibility have no significant effect according to the regression output.

6. Discussion

Among healthcare providers in Indonesia, regression results show that profitability is positively related to leverage, indicating that more profitable healthcare providers tend to increase their use of debt. This pattern illustrates the process of capital structure optimization in line with Trade-Off Theory, whereby the tax benefits of debt interest and expansion needs are more dominant than the risk of bankruptcy. These results are consistent with the findings of (Boateng et al., 2022; Jain et al., 2024; Tripathi et al., 2023) which show that companies in developing countries continue to increase debt when profits rise, especially when investment opportunities are high and capital markets are shallow. In the context of Indonesian healthcare, fiscal incentives, the need for facility development, and limited internal funding encourage management to utilize leverage even when ROA is high. Conversely, in the Singapore sample, the negative ROA coefficient indicates that more profitable entities choose to finance from retained earnings, in line with the Pecking Order Theory. These results are reinforced by studies by (Oanh et al., 2023; Yıldırım & Çelik, 2021) that high profitability reduces leverage in liquid markets due to low information costs and adequate access to internal capital. These two contrasting patterns confirm that institutional differences and the depth of capital markets determine the direction of the profitability-leverage relationship.

Company size in the Indonesian healthcare sector shows a negative coefficient for leverage, which means that the larger the total assets, the lower the level of debt used. This finding contradicts the classic Trade-Off Theory prediction, which assumes that large companies have a lower risk of default and are therefore able to bear higher debt. However, this pattern is supported by studies by (Ahmed et al., 2023; Cinaroglu & Pirgaip, 2024; Jansen et al., 2023) which show that in the healthcare sector and certain service sectors, large companies often use internal financing to maintain liquidity flexibility and long-term operational stability. Strict healthcare regulations and the need to maintain service continuity make management more conservative about debt even as size increases. Unlike Indonesia, the Singapore sample shows a positive size coefficient for leverage. This reflects that large healthcare companies in Singapore with advanced

financial systems have lower borrowing costs, higher credibility, and strong market access, so leverage increases as the company size increases. These findings are supported by (Indrayono, 2024; Ndruru & Ananda, 2025) and are in line with the dynamic Trade-Off Theory approach of (Campbell & Kelly, 1994). Thus, the size-leverage relationship is highly dependent on market structure and the efficiency of financial institutions.

	Singapura	**Indonesia**
Constant	0.020682*0.081334	0.046673*2.457366
Profitability (ROA)	-0.007675*-8.169459	0.000614*0.317303
Total Assets	0.009757*1.011244	-0.004542*-0.593703
Tangibility of Assets	0.065601*0.415182	0.838140*3.582888
Depreciation to Total Assets	2.080831*2.426861	10.19425*4.360121
R-squared	0.469543	0.469543
Adjusted R-squared	0.454387	0.454387
F statistic	30.98082	3.883418
Durbin-Watson Statistic	2.057082	2.520054

In the Indonesia sample, the tangibility of assets has a positive and significant coefficient on leverage, which means that the greater the proportion of fixed assets owned by healthcare companies, the higher the tendency for companies to use debt. This finding supports the predictions of Trade-Off Theory, which emphasizes the role of tangible assets as collateral in facilitating access to external financing. Fixed assets increase creditor confidence and reduce the risk of default, thereby encouraging companies to utilize debt-based financing. Conversely, in the Singapore sample, the tangibility of assets also shows a positive relationship with leverage, but it is not statistically significant. This indicates that although fixed assets have the potential to increase debt capacity, this factor is not a major determinant of the capital structure of healthcare companies in Singapore. This finding is in line with (Camisón et al., 2022; Vengesai, 2023) who state that in more mature and efficient credit markets, access to debt does not solely depend on the value of asset collateral, but is more influenced by cash flow stability, company reputation, and advanced risk assessment mechanisms. Thus, the tangibility variable confirms that institutional factors and credit market quality play an important role in determining whether fixed assets serve as a driver of debt use or only have a limited role in cross-country capital structure decisions.

Based on the regression results, depreciation to total assets has a positive and significant effect on leverage in both Indonesian and Singaporean healthcare companies, with a much stronger effect in Indonesia. The large and significant coefficient in Indonesia indicates that high depreciation reflects the intensity of fixed assets and the need for capital replacement financing, which encourages companies to increase their use of debt, especially in the context of long-term financing. This finding is in line with the Trade-Off Theory, in which depreciation serves as an indicator of investment needs while also being related to the tax benefits of debt use. In Singapore, although the effect of depreciation is also positive and significant, its magnitude is more moderate, reflecting that in a more mature financial market, leverage decisions are not solely determined by asset needs, but also by credit market efficiency and governance quality. These results are consistent with the international study by (Boateng et al., 2022) which showed that depreciation acts as a signal of external financing needs in the health sector. Furthermore, (Priyan et al., 2024; Voutsinas & Werner, 2025) confirm through cross-country studies and meta-analysis that the effect of depreciation on capital structure is stronger in countries with asset-based financing systems and relatively limited creditor rights. Thus, the variable depreciation to total assets emerges as the most consistent determinant of leverage across countries, reinforcing the view that capital structure is context-dependent, influenced by institutional characteristics and the level of financial market development.

7. Conclusion

Cross-country findings show that none of the conventional capital structure theories, Trade-Off Theory, Pecking Order Theory, or Agency Theory, that can single-handedly explain the entire pattern. In the Indonesian context, the positive pattern in ROA, negative pattern in company size, and positive pattern in tangibility and depreciation relative to

total assets indicate a tendency toward a modified trade-off with the dominance of internal financing factors, limited market access, and expansion orientation. In contrast, in Singapore, the combination of negative profitability and positive company size and tangibility indicates a consistent pecking order tendency, where profitable companies use internal funds but still utilize leverage when size and tangible assets support credit access. Comparative studies by (Boateng et al., 2022; Priyan et al., 2024) and the meta-analysis by (Voutsinas & Werner, 2025) emphasize that market development, quality of governance, and creditor rights significantly moderate the direction of the relationship between capital structure variables. Therefore, the results of this study support the view that capital structure is context-dependent, influenced by institutions, regulations, and industry characteristics.

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