

# “Revisiting the role of capital structure and financial distress in shaping sustainable growth and firm value: Insights from Thailand’s listed service industry”

<b>AUTHORS</b>	Panern Intara  Pornpip Jirathumrong  Nattakan Rattanapan 
<b>ARTICLE INFO</b>	Panern Intara, Pornpip Jirathumrong and Nattakan Rattanapan (2025). Revisiting the role of capital structure and financial distress in shaping sustainable growth and firm value: Insights from Thailand’s listed service industry. <i>Investment Management and Financial Innovations</i> , 22(3), 152-162. doi: <a href="https://doi.org/10.21511/imfi.22(3).2025.12">10.21511/imfi.22(3).2025.12</a>
<b>DOI</b>	<a href="http://dx.doi.org/10.21511/imfi.22(3).2025.12">http://dx.doi.org/10.21511/imfi.22(3).2025.12</a>
<b>RELEASED ON</b>	Thursday, 07 August 2025
<b>RECEIVED ON</b>	Tuesday, 08 April 2025
<b>ACCEPTED ON</b>	Thursday, 24 July 2025
<b>LICENSE</b>	 This work is licensed under a <a href="https://creativecommons.org/licenses/by/4.0/">Creative Commons Attribution 4.0 International License</a>
<b>JOURNAL</b>	"Investment Management and Financial Innovations"
<b>ISSN PRINT</b>	1810-4967
<b>ISSN ONLINE</b>	1812-9358
<b>PUBLISHER</b>	LLC “Consulting Publishing Company “Business Perspectives”
<b>FOUNDER</b>	LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

51



NUMBER OF FIGURES

1



NUMBER OF TABLES

4

© The author(s) 2025. This publication is an open access article.



## BUSINESS PERSPECTIVES



LLC "CPC "Business Perspectives"  
Hryhorii Skovoroda lane, 10,  
Sumy, 40022, Ukraine  
[www.businessperspectives.org](http://www.businessperspectives.org)

**Type of the article:** Research Article

**Received on:** 8<sup>th</sup> of April, 2025

**Accepted on:** 24<sup>th</sup> of July, 2025

**Published on:** 7<sup>th</sup> of August, 2025

© Panern Intara, Porntip Jirathumrong,  
Nattakan Rattanapan, 2025

Panern Intara, M.B.A.,  
Assistant Professor of Business  
Administration, Department of  
Business Administration, Faculty  
of Management Sciences, Prince of  
Songkla University, Thailand.

Porntip Jirathumrong, M.B.A.,  
Assistant Professor of Business  
Administration, Department of  
Business Administration, Faculty  
of Management Sciences, Prince  
of Songkla University, Thailand.  
(Corresponding author)

Nattakan Rattanapan, M.B.A.,  
Department of Business  
Administration, Faculty of  
Management Sciences, Prince of  
Songkla University, Thailand.



This is an Open Access article,  
distributed under the terms of the  
[Creative Commons Attribution 4.0  
International license](https://creativecommons.org/licenses/by/4.0/), which permits  
unrestricted re-use, distribution, and  
reproduction in any medium, provided  
the original work is properly cited.

**Conflict of interest statement:**

Author(s) reported no conflict of interest

Panern Intara (Thailand), Porntip Jirathumrong (Thailand),  
Nattakan Rattanapan (Thailand)

# REVISITING THE ROLE OF CAPITAL STRUCTURE AND FINANCIAL DISTRESS IN SHAPING SUSTAINABLE GROWTH AND FIRM VALUE: INSIGHTS FROM THAILAND'S LISTED SERVICE INDUSTRY

## Abstract

The service industry sector is crucial to Thailand's employment and economic development. The firm value and sustainable growth of firms in this industry inevitably have a beneficial impact on the country. This study investigates the impact of capital structure and financial distress on sustainable growth and firm value among listed companies in Thailand's service sector. Using unbalanced panel data from 133 firms listed on the Stock Exchange of Thailand, the analysis encompasses 1,117 firm-year observations spanning the period from 2014 to 2023. Data were sourced from the SETSMART database of the Stock Exchange of Thailand. The empirical findings indicate that capital structure, measured by debt to equity ratio, demonstrates a significant negative influence on both sustainable growth ( $\beta = -1.8600, p < 0.05$ ) and firm value ( $\beta = -1.7600, p < 0.05$ ), suggesting that excessive leverage undermines long-term performance, while financial distress, as captured by the Z-score, shows positive impact on both sustainable growth ( $\beta = 1.1253, p < 0.01$ ) and firm value ( $\beta = 0.1578, p < 0.01$ ), indicating that reduced financial distress enhances corporate outcomes. These findings underscore important managerial implications. Service firms should optimize capital structure through balanced debt-equity ratios. Proactive financial distress management is crucial for sustaining growth. This study contributes to the corporate finance literature in emerging markets by empirically validating capital structure theories in Thailand's unique service sector context while providing practical guidance for financial decision-making.

## Keywords

capital structure, financial distress, sustainable growth,  
firm value, service industry, Stock Exchange of Thailand

## JEL Classification

G32, G23

## INTRODUCTION

The service sector plays a crucial role in driving economic development, serving as a fundamental pillar of growth in both advanced and emerging economies. In the context of Thailand, the service sector has emerged as the principal driver of economic activity, contributing approximately 58% to the country's GDP in recent years (World Bank, 2022). Furthermore, it holds substantial social and economic importance, as nearly half of the national workforce is employed in this sector (Office of the National Economic and Social Development Council, 2022). This sector encompasses six key business groups: commerce, healthcare, publishing, specialized services, tourism and recreation, and transportation and logistics (Stock Exchange of Thailand, 2024). In this competitive and evolving business landscape, firms increasingly aim to enhance shareholder value while achieving sustain-

able growth, which becomes a vital strategic focus, reflecting a firm's capacity for long-term viability. Emphasizing sustainability not only addresses future uncertainties but also strengthens firm value and supports long-term shareholder wealth preservation.

The ongoing global economic uncertainty, compounded by the recent pandemic, has exposed significant vulnerabilities within Thailand's service sector, particularly in tourism, transportation, and related industries. These industries experienced dramatic losses, including a decline in international tourism revenue from USD 90 billion in 2019 to just USD 24 billion in 2020 due to border closures and travel restrictions (Thaichareon et al., 2023). Firms listed on the Stock Exchange of Thailand, especially those in service-related industries, encountered sustained financial pressures beyond the immediate crisis. In 2024, SET-listed companies reported a 3.7% decline in net profits despite a 3.1% increase in total revenue (The Nation Thailand, 2024). Moreover, the average D/E ratio among non-financial SET-listed firms slightly decreased from 1.52 to 1.49, reflecting cautious financial restructuring amid heightened risk (The Nation Thailand, 2024). These financial indicators suggest deeper concerns regarding firms' capital structure decisions and their exposure to financial distress. In the face of ongoing economic uncertainty, understanding the dynamics of capital structure and financial health becomes increasingly vital for sustaining firm growth and preserving value, especially in sectors most vulnerable to external shocks.

Therefore, this study addresses the scientific problem of how capital structure and financial distress influence sustainable growth and firm value within Thailand's service industry. Investigating these relationships offers insights not only into firm-level financial strategies but also contributes to policy considerations for enhancing the resilience and long-term viability of one of the nation's most critical economic sectors.

---

## 1. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

The relationship between capital structure, financial distress, sustainable growth, and firm value has long been a focus of corporate finance literature. Numerous studies have affirmed that an optimal capital structure plays a crucial role in enhancing a firm's long-term performance and resilience. Specifically, capital structure positively influences sustainable growth by enabling firms to access resources that support strategic investments, innovation, and capacity expansion (Muh & Slamet, 2023; Ogulo, 2023). A well-balanced debt-to-equity (D/E) ratio can lower the cost of capital, improve financial flexibility, and foster investment in productivity-enhancing activities (Sasha et al., 2018). In capital-intensive sectors such as manufacturing, the use of long-term debt has been found to support long-term growth by offering tax advantages and structured repayment schemes (Godfrey, 2016; Modigliani & Miller, 1963; Frank & Goyal, 2009). These findings align with the view that debt, when optimally struc-

tured, contributes to value creation and sustainable business development (Myers, 2001; Rajan & Zingales, 1995; Arpana, 2020).

However, the literature is not entirely conclusive. Several scholars have raised concerns regarding the adverse effects of high leverage. Excessive debt may elevate the cost of capital, reduce liquidity, and increase the risk of financial instability, thereby undermining sustainable growth (Muhammad et al., 2021; Abdullahi, 2025; Vlora et al., 2024). These divergent findings suggest that the impact of capital structure on sustainable growth may be context-dependent and influenced by firm-specific or industry-specific factors.

The influence of capital structure on firm value has also been extensively investigated, with mixed empirical evidence. Some studies indicate a positive association, noting that optimal capital structure enhances firm value by minimizing the weighted average cost of capital (WACC), maximizing tax shields, and improving shareholder returns (Akartwipart, 2022; Phetkong, 2016; Okudo et al., 2022). Equity capital and long-term

debt, in particular, have been identified as value-enhancing components, especially in manufacturing and technology-intensive industries (Godfrey, 2016; Samuel et al., 2012; Adeyemi & Oboh, 2011; Nguyen et al., 2020). Conversely, other studies have highlighted the negative consequences of excessive debt, reporting that high D/E ratios increase financial risk and diminish firm value (Hairudin & Desmon, 2020; Okyana, 2014; Jarutruangutai & Nimtrakoon, 2024). In some cases, the relationship between capital structure and firm value has been found to be insignificant, suggesting that other mediating factors may play a role (Setiadharmas & Machali, 2017). These inconsistencies underline the importance of further investigation, especially in emerging markets where capital structures tend to differ from those in developed economies.

Financial distress has been identified as a critical mediating factor that affects both sustainable growth and firm value. Measured by tools such as the Altman Z-score, financial distress reflects a firm's likelihood of bankruptcy due to deteriorating liquidity and solvency conditions (Altman, 1968; Titman & Wessels, 1988). Firms experiencing financial distress often face elevated borrowing costs, constrained access to capital markets, and reduced investment in growth-oriented initiatives such as R&D and innovation (Fazzari et al., 1988; Opler & Titman, 1994). Moreover, management attention tends to shift toward short-term survival rather than long-term development, leading to operational inefficiencies (Shleifer & Vishny, 1992). Empirical studies have consistently shown that financial distress negatively impacts sustainable growth, limiting firms' capacity to expand and invest strategically (Kjell & Randi, 2010; Amatyakul et al., 2021; Latifa & Haitham, 2019).

In addition to growth constraints, financial distress significantly undermines firm value. Excessive debt and liquidity shortages increase volatility and reduce investor confidence (Campbell & Szilagyi, 2008; Garlappi et al., 2008). High bankruptcy risk often leads to capital flight and lower market valuations (Fama & French, 1992; Omaliko et al., 2023; Stundziene & Boguslauskas, 2006). According to agency theory, distressed firms may avoid profitable but

risky investments or alternatively pursue excessively risky projects in a bid to recover from financial setbacks, both of which can erode shareholder value (Jensen & Meckling, 1976; Myers, 1977; Stulz, 1990). However, some studies suggest that financial distress may serve as a disciplinary mechanism, encouraging operational restructuring and more efficient capital allocation (John et al., 2008; Koustav & Kalpataru, 2022), particularly in resilient sectors. Despite these exceptions, the prevailing view remains that financial distress poses a significant threat to both sustainable growth and firm value.

Taken together, these strands of literature suggest that while leverage can promote growth and value creation when managed effectively, its excessive use introduces financial vulnerabilities that may trigger distress, thereby impairing long-term performance. The inconclusive empirical findings, ranging from positive and negative to insignificant effects, highlight the need for more nuanced investigations that consider variables such as financial distress. In the context of Thailand's emerging economy, especially within the service sector, these relationships remain underexplored. This study addresses this gap by examining how capital structure and financial distress influence sustainable growth and firm value, providing insights into the conditions under which leverage is value-enhancing or value-destroying.

The purpose of this study is to examine the impact of capital structure and financial distress on sustainable growth and firm value of listed companies in the service sector of the SET. Based on this literature synthesis, the following hypotheses are proposed:

$H_1$ : *Capital structure negatively impacts a firm's sustainable growth.*

$H_2$ : *Capital structure negatively impacts firm value.*

$H_3$ : *Higher Altman Z-scores (lower FD) positively influence a firm's sustainable growth.*

$H_4$ : *Higher Altman Z-scores (lower FD) positively influence firm value.*

## 2. RESEARCH METHODOLOGY

The study population comprises firms in the service industry sector listed on the SET. The sample group was chosen via purposive sampling, specifically selecting listed firms with comprehensive financial and performance data. The service sector encompasses six principal business groups: commerce, healthcare, publishing, specialized services, tourism and recreation, and transportation and logistics. The sample comprises 133 firms with 1,117 firm-year observations throughout a decade from 2014 to 2023. The data utilized in the study were sourced from the SETSMART database of SET.

This study developed a research framework based on the literature synthesis and hypotheses formulation to examine the influence of capital structure and financial distress on sustainable growth and firm value. The framework illustrates the proposed relationships and provides the foundation for empirical testing.

This study examines capital structure and financial distress as independent variables, with sustainable growth and firm value as the dependent variables. Additionally, three firm-specific characteristics – firm size, sales growth, and cash flow – are included as control variables. All the variable measurements, notations, and descriptions used are shown in Table 1.

In analyzing the data, firstly, descriptive analysis is used to examine the characteristics of the data used in this study. The correlation between each variable is used to examine the multicollinearity problem. Finally, the multiple regression is used for the investigation. The baseline model for this study is shown in Equations (1) and (2)

$$SG_{i,t} = B_0 + B_1CS_{i,t} + B_2FD_{i,t} + B_3SIZE_{i,t} + B_4GROWTH_{i,t} + B_5CF_{i,t} + e_{i,t} \quad (1)$$

$$FV_{i,t} = B_0 + B_1CS_{i,t} + B_2FD_{i,t} + B_3SIZE_{i,t} + B_4GROWTH_{i,t} + B_5CF_{i,t} + e_{i,t} \quad (2)$$

$B_1$  in equations (1) and (2) is expected to be negative and statistically significant, which is consistent with  $H_1$  and  $H_2$ , which state that capital structure (CS) has a negative impact on firm's sustainable growth (SG) and that capital structure (CS) has a negative impact on firm value (FV), respectively. Similarly, the  $B_2$  in equations (1) and (2) are expected to be positive and statistically significant, which is consistent with  $H_3$  and  $H_4$  that state that Z-score, the inverse proxy of financial distress (FD), has a positive impact on a firm's sustainable growth (SG) and Z-score, the inverse proxy of financial distress (FD), positively impacts firm value (FV).

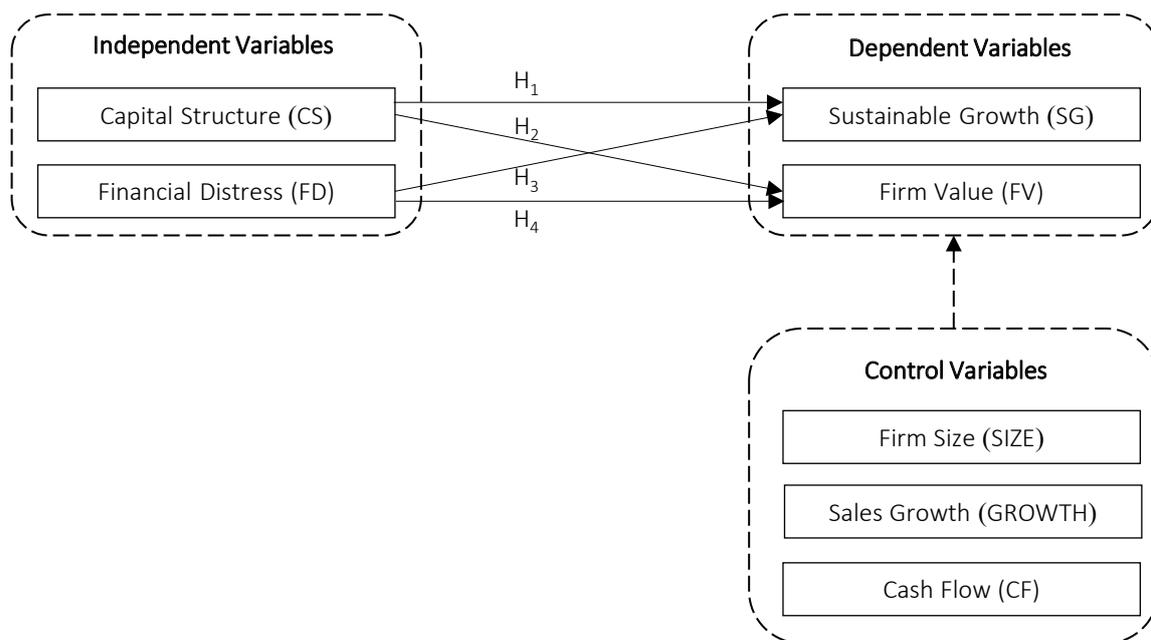


Figure 1. Research framework

**Table 1.** Variables description

Variables	Measurement	Description
Firm Value (FV)	$\frac{\text{Market Capitalization} + \text{Preferred Stock} + \text{Net Debt}}{\text{Book Value of Total Assets}}$	Tobin's Q or FV reflects capability and growth potential Evaluated through assets, operations, and market expectations
Sustainable Growth (SG)	$\frac{\text{Net Income}}{\text{Sales}} \cdot \frac{\text{Sales}}{\text{Total Assets}} \cdot \frac{\text{Total Assets}}{\text{Total Equity}} \cdot RR$	The highest growth rate of sales or revenue without changing operating and financing policies.
Capital Structure (CS)	$\frac{\text{Long term Debt}}{\text{Total Equity}}$	Long-term debt to equity ratio reflects the company's funding policy
Financial Distress (FD)	Altman Z-score Bankruptcy Model $Z\text{-Score} = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.6X_4 + 0.999X_5$ $X_1$ is the ratio of working capital to total assets. $X_2$ is the ratio of retained earnings to total assets. $X_3$ is the ratio of operating income to total assets. $X_4$ is the ratio of market capitalization to total liabilities. $X_5$ is the ratio of sales to total assets.	Risk of the company going bankrupt due to inability to provide services or pay debts Higher Altman Z-scores reflect reduced financial distress
Firm size (SIZE)	$\text{Ln}(\text{Total Assets})$	Natural logarithm of total assets reflects firm size
Sales Growth (GROWTH)	$\frac{\text{Sales}_1 - \text{Sales}_0}{\text{Sales}_0}$	Percentage change in sales reflects the ability to generate sales.
Cash flow (CF)	$\frac{\text{Operating Cash Flow}}{\text{Sales}_0}$	The ratio of cash flow from operating activities to sales reflects the company's liquidity

### 3. RESULTS

Table 2 shows the descriptive statistics of the variables of 113 firms with 1,117 firm-year observations. However, some preliminary tests were undertaken before conducting the regression analysis. Initially, this study uses the analysis of skewness and kurtosis to indicate the presence of normality. Hair et al. (2010) define normality as skewness between -3 and +3 and kurtosis between -7 and +7. Firstly, two variables in the model, sustainable growth and financial distress, were not normally distributed (untabulated results. SG's skewness was -7.35, and financial distress's skewness was 23.75). Then, the dataset was transformed by a 95% Winsorization approach.

The sustainable growth varies from -31.7880 to 29.719, with a mean of -0.0257, suggesting that service sector firms, on average, struggle to maintain growth. Firm value, as shown by Tobin's Q, firm value has an average of 2.2570 (more than 1), indicating that most firms possess a market value beyond their asset replacement costs. Nonetheless, its elevated standard deviation (5.1290) and highest value of 33.5420 signify considerable volatility. Capital structure has significant variation, ranging from -6.5410 to 10.8125, with a mean of 0.6700, indicating that most firms depend more on long-term debt than on equity, and some firms possess negative equity. Financial Distress in this study is measured using the Altman Z-score, where higher values indicate greater financial stability. The

**Table 2.** Summary of descriptive statistics

Variable	Mean	Median	Max	Min	S.D.	Obs
Sustainable Growth (SG)	-0.0257	0.0250	29.7190	-31.7880	0.2860	1,117
Firm Value (FV)	2.2570	1.0800	33.5420	0.0080	5.1290	1,117
Capital Structure (CS)	0.6700	0.3700	10.8125	-6.5410	1.2050	1,117
Financial Distress (FD)	9.6560	3.0850	28.2250	-12.2560	10.7901	1,117
Firm size (SIZE)	8.9050	8.6250	16.6850	5.0640	1.8520	1,117
Sales Growth (GROWTH)	13.1050	9.7920	46.7050	-19.7960	0.3030	1,117
Cash flow (CF)	0.1365	0.1570	2.0356	-8.3180	0.5080	1,117

mean financial distress, 9.6560, notably higher than the median (3.0850), suggests that most firms maintain moderate stability. The range of financial distress (-12.2560 to 28.2250) and high standard deviation (10.7901) reflect significant variation in financial health. Some firms face severe distress, indicated by low or negative Z-scores, while others demonstrate strong financial resilience. Sales Growth (GROWTH) averages 13.105%, ranging from -19.7960 to 46.7050. In contrast, Cash Flow (CF), defined as operating cash flow to sales, averages 0.1365, with values ranging from -8.3180 to 2.0356, indicating that some firms incur negative operating cash flows.

Table 3 reports the correlation coefficients among the study variables. SG is positively correlated with FV, FD, GROWTH, and CF, but negatively with CS. FV is positively related to FD, SIZE, and GROWTH, and negatively to CS, indicating that lower leverage, larger size, and stronger sales growth enhance firm value. CS shows negative correlations with FD and CF, but a positive one with GROWTH, suggesting that higher leverage is associated with greater distress and lower cash flow. The strongest positive correlation is between SG and GROWTH (0.5645), while the strongest negative is between CS and FD (-0.3550). Low correlation levels indicate no multicollinearity concerns.

Table 4 shows the results of the multiple regression analysis using the Pooled OLS model. Initially, the Breusch and Pagan LM test (1979) was used to determine the appropriateness of Pooled OLS. The null hypothesis is accepted (untabulated results, P-value > 0.05), indicating that pooled OLS is appropriate for this study. Therefore, the Pooled OLS model was preferred. The regression results are shown in Table 4.

**Table 3.** Correlation analysis

Variable	SG	FV	CS	FD	SIZE	GROWTH	CF
SG	1.0000						
FV	0.2310	1.0000					
CS	-0.1563*	-0.2565**	1.0000				
FD	0.2354**	0.3575**	-0.3550**	1.0000			
SIZE	0.1525	0.2520*	0.144	0.1560	1.0000		
GROWTH	0.5645**	0.4560**	0.1505**	0.1005*	0.0550**	1.0000	
CF	0.2550*	0.1325	-0.0546**	0.0255*	0.0236	0.0155*	1.0000

Note: \*\*\*, \*\*, and \* denote significance at the 1%, 5%, and 10% levels, respectively.

**Table 4.** Empirical results

Variables	(1)	(2)
	Sustainable Growth: SG	Firm Value: FV
Constant	7.57*** (0.0000)	7.37*** (0.0000)
Capital Structure (CS)	-1.8600** (0.0340)	-1.7600** (0.0440)
Financial Distress (FD)	1.1253*** (0.0004)	0.1578*** (0.0004)
Firm Size (SIZE)	0.0056 (0.1245)	0.0214 (0.1123)
Sales Growth (GROWTH)	1.1235* (0.0640)	1.1255* (0.0745)
Cash Flow (CF)	0.0075 (0.2205)	0.0050 (0.1305)
R-squared	0.1547	0.1206
Adjusted R-squared	0.1122	0.0875
Sum squared residual	3.8376	3.0502
Durbin-Watson stat	1.8057	2.1085
F-statistics	6.9985	9.7718
Prob (F-statistics)	0.0000	0.0000

Note: The impact of CS and FD on SGR and TQ using pooled OLS. \*\*\*, \*\*, and \* denote significance at 1%, 5%, and 10%, respectively. P-values are in parentheses.

Table 4 presents the results of the pooled OLS regression analysis investigating the impact of Capital Structure (CS) and Financial Distress (FD) on Sustainable Growth (SG) and Firm Value (FV). In Model (1), capital structure has a significant negative effect ( $\beta = -1.8600$ ,  $p = 0.0340$ ), indicating that a higher D/E ratio is associated with lower sustainable growth.  $H_1$  is therefore accepted. Conversely, financial distress has a significant positive effect ( $\beta = 1.1253$ ,  $p = 0.0004$ ), suggesting that financially stable firms (high Z-score) achieve higher sustainable growth. This finding provides evidence in support of  $H_3$ . Sales Growth (GROWTH) is positively associated with sustainable growth at the 10% significance level ( $\beta = 1.1235$ ,  $p = 0.0640$ ), while Firm Size (SIZE) and Cash Flow (CF) do not show significant effects. The model has an adjusted R-squared of 0.1122, indicating that the independent variables explain approximately 11.22% of the variation in sustainable growth.

In Model (2), capital structure remains negatively significant firm value ( $\beta = 1.7600$ ,  $p = 0.0440$ ), supporting  $H_2$ . Financial distress positively influences firm value ( $\beta = 0.1578$ ,  $p = 0.0004$ ), implying that firms with a higher Altman Z-score (lower financial distress) tend to have higher market valuation, thereby confirming  $H_4$ . Sales Growth (GROWTH) is also positively related to firm value at the 10% level ( $\beta = 1.1255$ ,  $p = 0.0745$ ). Similar to Model (1), firm size and cash flow do not have significant effects. The R-squared is 0.1206, with an adjusted R-squared of 0.0875, meaning the model explains 8.75% of the variation in firm value. Both models exhibit significant overall fit with F-statistics of 6.9985 and 9.7718, respectively ( $p = 0.0000$ ), confirming that the independent variables collectively influence sustainable growth and firm value. The Durbin-Watson statistics (1.8057 and 2.1085) suggest no serious autocorrelation issues. These findings highlight the significant role of lower financial distress in enhancing both sustainable growth and firm value, while higher leverage negatively impacts both independent variables.

## 4. DISCUSSION

This study finds that capital structure has a significant adverse effect on sustainable growth, indicating that firms with higher levels of debt face constraints in pursuing long-term growth. This result supports theoretical expectations from the Trade-off and Agency theories, which suggest that excessive leverage can increase financial costs, heighten liquidity risk, and exacerbate agency conflicts, ultimately limiting a firm's ability to invest in strategic and innovative activities. This finding is consistent with those of Muhammad et al. (2021), Abdullahi (2025), and Vlora et al. (2024), which also revealed a negative impact of capital structure on sustainable growth. In contrast, these findings contradict some previous studies by Muh and Slamet (2023) and Ogulo (2023), which reported a positive relationship between capital structure and sustainable growth, particularly in capital-intensive industries. One possible explanation for the current study is that higher leverage increases a firm's financial obligations and vulnerability to external shocks, which can crowd out long-term investments in sustainability initiatives such as innovation, employee development, or

environmental practices. The excessive debt can constrain managerial flexibility and increase risk aversion. In the context of Thailand's service sector, which is typically more sensitive to macroeconomic fluctuations, the pressure from debt servicing may hinder firms from pursuing sustainable growth strategies. Therefore, the findings provide empirical support for  $H_1$  and conclude that capital structure negatively impacts a firm's sustainable growth.

Capital structure has a statistically significant adverse effect on firm value (FV), suggesting that excessive debt undermines firm performance. This finding aligns with the findings of Hairudin and Desmon (2020) and Okyana (2014), who observed that high debt levels increase capital costs and negatively impact firm valuation. In addition, this finding is consistent with Jarutruangutai and Nimtrakoon (2024), Piromsod et al. (2022), and Wongyai et al. (2017), who concluded that D/E increases the cost of capital and reduces firm value. The findings of the current study support the Agency Theory perspective (Jensen & Meckling, 1976), which posits that debt can lead to agency conflicts and inefficient investment decisions, thereby reducing firm value. However, our findings contrast with those of Akartwipart (2022), Phetkong (2016), Okudo et al. (2022), Godfrey (2016), Samuel et al. (2012), Adeyemi and Obboh (2011), and Nguyen et al. (2020,) who reported a positive impact of capital structure on firm value, emphasizing the benefits of tax shields and improved managerial discipline. This divergence may stem from industry-specific characteristics. In the service sector, where most firms in our sample operate, the lack of tangible collateral and more volatile income streams increases perceived risk, thereby raising the cost of debt. As a result, high leverage may constrain firms from investing in value-generating projects due to ongoing interest obligations and concerns about financial distress. These contextual differences help explain why capital structure has a negative impact on firm value in this study. Therefore, the findings of this study provide empirical support for  $H_2$ , confirming that capital structure has a negative impact on firm value.

This study finds that financial distress, measured inversely through the Altman Z-score, has a sta-

tistically significant positive effect on sustainable growth, indicating that firms with lower financial distress (i.e., higher Z-scores) are more likely to grow sustainably. This result aligns with prior literature by Kjell and Randi (2010) and Latifa and Haitham (2019), who reported that financially stable firms are better positioned to invest in innovation and long-term strategies that support sustainable expansion. Our findings also reinforce the argument by Altman (1968) that distressed firms struggle to secure external financing, thereby limiting investment in growth-enhancing activities. In the context of the service sector, which dominates our sample, financial stability appears particularly important. Service firms often lack physical collateral and operate in a highly competitive, customer-oriented environment where consistent investment in quality and innovation is essential. Financial distress in such firms likely reduces borrowing capacity and limits investment in service improvement, ultimately hindering long-term growth. This finding supports  $H_3$ , which suggests that a high Z-score (low FD) increases sustainable growth.

The Altman Z-score has a positive and statistically significant effect on firm value, indicating that firms experiencing lower financial distress (higher Z-scores) are better positioned to enhance shareholder value. This result is consistent with the findings of Campbell and Szilagyi (2008) and Garlappi et al. (2008), who observed that financially stable firms benefit from reduced risk perceptions, improved access to capital markets, and more substantial investor confidence – all of which contribute to higher valuations. In contrast, John et al. (2008) suggested that financial distress can promote operational efficiency and lead to value improvement through disciplined cost management. However, in our context – particularly within the service sector – financial health appears to be a more critical driver of firm value. Firms with low financial distress tend to enjoy greater liquidity and credibility, making it easier to obtain funding at lower costs and to invest consistently in value-generating activities. This finding supports  $H_4$ , which suggests that a high Z-score (low FD) increases firm value.

---

## CONCLUSION AND LIMITATIONS

This study aims to analyze the impact of capital structure and financial distress on sustainable growth and firm value of listed companies in the service sector of the SET. The findings indicate that capital structure has a negative impact on sustainable growth and firm value, as high debt levels increase financial risk and limit growth potential. In contrast, low financial distress (indicated by a high Altman Z-score) positively influences both sustainable growth and firm value, as financially stable firms can access capital more easily and invest in value-generating opportunities. Therefore, firms in Thailand's service sector should manage capital structure prudently, avoiding excessive debt to mitigate financial risk and enhance growth prospects. Moreover, service sector firms must manage liquidity efficiently; reducing financial pressure enhances sustainable growth and firm value, as research has proven. As with any empirical study, some limitations exist and should be considered when interpreting the findings. Firstly, it uses data from a limited sample of companies, which may not fully reflect the conditions of companies in other industries or regions. Secondly, this study used a limited selection of independent and control variables, including capital structure, financial distress, firm size, sales growth, and cash flow, potentially ignoring other factors that influence sustainable growth and firm value. Finally, this study used a multiple regression analysis approach, which may inadequately encapsulate the intricate interactions among variables. Subsequent studies should broaden the sample to include firms from other sectors, thereby enhancing the variety and reliability of the study findings. Moreover, future studies should include other variables that may influence sustainable development and company value, such as innovation, corporate governance, governmental regulations, or environmental, social, and governance (ESG) aspects. Additionally, subsequent studies may use supplementary analytical techniques, such as path analysis or structural equation modeling (SEM), to investigate the interrelationships among variables more comprehensively.

## AUTHOR CONTRIBUTIONS

Conceptualization: Panern Intara, Porntip Jirathumrong.

Data curation: Porntip Jirathumrong, Nattakan Rattanapan.

Formal analysis: Panern Intara, Porntip Jirathumrong, Nattakan Rattanapan.

Investigation: Panern Intara, Porntip Jirathumrong, Nattakan Rattanapan.

Methodology: Panern Intara, Porntip Jirathumrong, Nattakan Rattanapan.

Project administration: Porntip Jirathumrong.

Supervision: Panern Intara, Porntip Jirathumrong, Nattakan Rattanapan.

Validation: Porntip Jirathumrong.

Visualization: Panern Intara.

Writing – original draft: Panern Intara, Porntip Jirathumrong, Nattakan Rattanapan.

Writing – review & editing: Panern Intara, Porntip Jirathumrong, Nattakan Rattanapan.

## REFERENCES

1. Abdullahi Sani. (2025). Capital Structure and Financial Sustainability of Micro, Small and Medium Scale Enterprises in Northeastern Nigeria. *Journal of Economic and Finance Research*, 2(1), 26-32. <https://doi.org/10.55677/GJEFR/04-2025-Vol02E1>
2. Adeyemi, S. B., & Oboh, C. S. (2011). Perceived Relationship between Corporate Capital Structure and Firm Value in Nigeria. *International Journal of Business and Social Science*, 2(19), 131-141. Retrieved from <https://api-ir.unilag.edu.ng/server/api/core/bitstreams/13a55711-ce98-4a34-b96f-be1a17027bd5/content>
3. Akartwipart, A. (2022). *The influence of specific factors of the company and the capital structure affecting to the firm value of the listed companies in the Stock Exchange of Thailand* (Doctoral dissertation). Naresuan University. Retrieved from <https://nuir.lib.nu.ac.th/dspace/bitstream/123456789/5275/3/AusawatapAkartwipart.pdf>
4. Almeida, H., Campello, M., & Weisbach, M. S. (2004). The cash flow sensitivity of cash. *Journal of Finance*, 59(4), 1777-1804. <https://doi.org/10.1111/j.1540-6261.2004.00679.x>
5. Altman. (1968). Financial ratios discriminant analysis and the prediction of corporate bankruptcy. *Journal of Finance*, 23(4), 589-609. <https://doi.org/10.2307/2978933>
6. Amatyakul, K., Pongsupatt, T., & Pongsupatt, A. (2021). Factors affecting sustainable growth of sustainable investment group in the Stock Exchange of Thailand. *Journal of Buddhist Education and Research*, 7(3), 78-90. Retrieved from <https://so06.tci-thaijo.org/index.php/jber/article/view/248697>
7. Arpana, B. (2020). Financial performance analysis of Indian construction industry. *International Journal of Electronic Marketing and Retailing*, 10(8), 1-10. Retrieved from <https://ijemr.in/wp-content/uploads/2020/09/Financial-Performance-Analysis-of-Indian-Construction-Industry.pdf>
8. Ayaz, M., Zabri, S. M., & Ahmad, K. (2021). An empirical investigation on the impact of capital structure on firm performance: evidence from Malaysia. *Journal of Managerial Finance*, 47(8), 1107-1127. <https://doi.org/10.1108/MF-11-2019-0586>
9. Campbell, J. Y., & Szilagyi, J. (2008). *Information in credit ratings* (NBER Working Paper No. 14505). <https://doi.org/10.3386/w14505>
10. Campbell, J. Y., Hilscher, J., & Szilagyi, J. (2008). In Search of Distress Risk. *The Journal of Finance*, 63(6), 2899-2939. <https://doi.org/10.1111/j.1540-6261.2008.01416.x>
11. Dhita, S., Achsani, N. A., Sembel, R., & Purwanto, S. (2018). Determinants of Capital Structure: Empirical Evidence from the Indonesia Stock Exchange. *European Journal of Business and Management*, 10(17), 36-45. Retrieved from <https://iiste.org/Journals/index.php/EJBM/article/view/42775>
12. Emeka, O., & Mordi, A. (2023). Effect of bankruptcy risk on value of conglomerate firms in Nigeria. *International Journal of Economics Business and Management Studies*, 10(1), 10-19. <https://doi.org/10.55284/ijebms.v10i1.837>
13. Fama, E. F., & French, K. R. (1992). The cross-section of expected stock returns. *Journal of Finance*, 47(2), 427-465. <https://doi.org/10.1111/j.1540-6261.1992.tb04398.x>
14. Fazzari, S. M., Hubbard, R. G., & Petersen, B. C. (1988). Financing constraints and corporate investment. *Brookings Papers on Economic Activity*, 1988(1), 141-195. Retrieved from [https://www.brookings.edu/wp-content/uploads/1988/01/1988a\\_bpea\\_fazzari\\_hubbard\\_petersen\\_blinder\\_poterba.pdf](https://www.brookings.edu/wp-content/uploads/1988/01/1988a_bpea_fazzari_hubbard_petersen_blinder_poterba.pdf)
15. Frank, M. Z., & Goyal, V. K. (2009). Capital structure decisions: Which factors are reliably important? *Financial Management*, 38(1), 1-37. <https://doi.org/10.1111/j.1755-053X.2009.01026.x>
16. Garlappi, L., Shu, T., & Yan, H. (2008). Default risk, shareholder advantage, and stock returns. *Review of Financial Studies*, 21(6),

- 2743-2778. Retrieved from <https://ideas.repec.org/a/oup/rfinst/v21y-200816p2743-2778.html>
17. Godfrey, O. Adu. (2016). *Effect of Capital Structure on Firm Value: A case study of listed manufacturing firms in Ghana* (Master of Business Administration). University of Cape Coast. Retrieved from <https://ir.ucc.edu.gh/xmlui/handle/123456789/3784>
  18. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Pearson Education. Retrieved from [https://opac.utssurabaya.ac.id/uploaded\\_files/temporary/DigitalCollection/Mjk2M2i0Z-TZiOTFhYTE3ODE1YTJkOD-VkMWJiMDllZGQzYmNiNz-I5MQ==.pdf](https://opac.utssurabaya.ac.id/uploaded_files/temporary/DigitalCollection/Mjk2M2i0Z-TZiOTFhYTE3ODE1YTJkOD-VkMWJiMDllZGQzYmNiNz-I5MQ==.pdf)
  19. Hairudin & Desmon. (2020). The effect of Capital Structure on Firm Value by using dividend policy as an intervening variable. (Study on Pharmaceutical Sub Sector Companies). *Journal of Diskursus Ilmu Manajemen STIESA (Dimensia)*, 17(1), 70-87. Retrieved from <https://ojs.stiesa.ac.id/index.php/dimensia>
  20. Jarutruangutai, N., & Nimtrakoon, S. (2024). Relationship between capital structure and firm performance and firm value of listed companies on the Stock Exchange of Thailand. *Journal of Federation of Accounting Professions*, 6(17), 54-71. Retrieved from <https://so02.tci-thaijo.org/index.php/JFAC/article/view/272305>
  21. Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs, and ownership structure. *Journal of Financial Economics*, 3(4), 305-360. [https://doi.org/10.1016/0304-405X\(76\)90026-X](https://doi.org/10.1016/0304-405X(76)90026-X)
  22. Koustav, R., & Kalpataru, B. (2022). Financial risk and Firm Value: is there any trade-off in the Indian context? *Rajagiri Management Journal*, 16(3), 226-238. <https://doi.org/10.1108/RAMJ-03-2021-0021>
  23. Kraus, A., & Litzenberger, R. H. (1973). A State-Preference Model of Optimal Financial Leverage. *The Journal of Finance*, 28(4), 911-922. <https://doi.org/10.1111/j.1540-6261.1973.tb01415.x>
  24. Latifa, A., & Haitham, N. (2019). *Conceptual Building of Sustainable Economic Growth and Corporate Bankruptcy*. College of Business, Abu Dhabi University. Retrieved from <https://www.researchgate.net/publication/336913485>
  25. Modigliani, F., & Miller, M. H. (1963). Corporate income taxes and the cost of capital: A correction. *American Economic Review*, 53(3), 433-443. Retrieved from [https://www.homeworkforyou.com/static\\_media/uploaded-files/1709683177\\_8295598\\_\\_878..pdf](https://www.homeworkforyou.com/static_media/uploaded-files/1709683177_8295598__878..pdf)
  26. Muh, Afdhal Mubarak AS & Slamet, Haryono. (2023). The Influence of Firm Characteristics and Capital Structure on Sustainable Growth Rate: Moderating Effect of Industry Sector. *International Journal of Business Studies*, 6(1), 62-69. <https://doi.org/10.9744/petraijbs.6.1.62-69>
  27. Myers, S. C. (1977). Determinants of corporate borrowing. *Journal of Financial Economics*, 5(2), 147-175. [https://doi.org/10.1016/0304-405X\(77\)90015-0](https://doi.org/10.1016/0304-405X(77)90015-0)
  28. Myers, S. C. (2001). Capital structure. *Journal of Economic Perspectives*, 15(2), 81-102. <https://doi.org/10.1257/jep.15.2.81>
  29. Nguyen, T. T., Nguyen, H. P., Nguyen, L. B. K., Vu, N. T & Le, T. U. (2020). The relationship between capital structure and firm value: cases of listed companies in the food and beverages industry in Vietnam. *Academy of Accounting and Financial Studies Journal*, 24(1), 131-138. Retrieved from <https://www.abacademies.org/abstract/the-relationship-between-capital-structure-and-firm-value-cases-of-listed-companies-in-the-food-and-beverages-industry-i-9053.html>
  30. Nordal, K. B., & Næs, R. (2010). *The Relationship Between Bankruptcy Risk and Growth for Non-Listed Firms* (Working paper No. 31). Retrieved from <https://www.econstor.eu/bitstream>
  31. Office of the National Economic and Social Development Council. (2022). Thailand social development report 2022 [PDF file]. Retrieved from [https://www.nesdc.go.th/nesdb\\_en/ewt\\_dl\\_link.php?filename=social\\_dev\\_report&nid=4495](https://www.nesdc.go.th/nesdb_en/ewt_dl_link.php?filename=social_dev_report&nid=4495)
  32. Ogulo, J. E. (2023). *The impact of capital structure on the growth of construction companies* (Master of Business Administration). Amity University. Retrieved from [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4326938](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4326938)
  33. Okudo, C. L., Mbonu, C. M., & Amahalu, N. N. (2022). Capital Structure and Firm Performance of Quoted Pharmaceutical Firms in Nigeria. *International Journal of Education, Business and Economics Research*, 2(5), 56-65. Retrieved from [https://ijeber.com/uploads2022/ijeber\\_02\\_38.pdf](https://ijeber.com/uploads2022/ijeber_02_38.pdf)
  34. Opler, T., & Titman, S. (1994). Financial distress and corporate performance. *The Journal of Finance*, 49(3), 1015-1040. <https://doi.org/10.1111/j.1540-6261.1994.tb00086.x>
  35. Phetkong, P. (2016). *The relationship of capital structure on firm value and profitability of listed companies in Market for Alternative Investment (MAI)* (Master's thesis). Thammasat University. Retrieved from [https://digital.library.tu.ac.th/tu\\_dc/frontend/Info/item/dc:93058](https://digital.library.tu.ac.th/tu_dc/frontend/Info/item/dc:93058)
  36. Piromsod, S., Vilalai, P., & Thaneerananon, A. (2022). Working capital management and financial structure that affect firm value of agro-industry and food industry group listed on the stock exchange of Thailand during the COVID-19 pandemic. *Journal of Management Science Nakhon Pathom Rajabhat University*, 9(2), 282-293. <https://doi.org/10.14456/jmsnpru.2022.50>
  37. Rajan, R. G., & Zingales, L. (1995). What do we know about capital structure? Some evidence from international data. *Journal of Finance*, 50(5), 1421-1460. <https://doi.org/10.1111/j.1540-6261.1995.tb05184.x>

38. Safitri, O. N., Handayani, S. R., Nuzula, N. F. (2014). The influence of capital structure and profitability on firm value (A Study in Retail Companies Listed in Indonesia Stock Exchange 2010-2013 period). *Journal of Administrasi Bisnis*, 13(2), 1-19. Retrieved from <https://media.neliti.com/media/publications/84084-EN-the-influence-of-capital-structure-and-p.pdf>
39. Samuel, A., Mills, E. A., & Zhao, X. (2012). Capital structure and firm value: Empirical evidence from Ghana. *International Journal of Business and Social Science*, 3(22), 103-111. Retrieved from [https://www.researchgate.net/publication/272171457\\_Capital\\_structure\\_and\\_firm\\_value\\_Empirical\\_evidence\\_from\\_Ghana](https://www.researchgate.net/publication/272171457_Capital_structure_and_firm_value_Empirical_evidence_from_Ghana)
40. Setiadharna & Machali. (2017). The effect of asset structure and firm size on firm value with capital structure as intervening variable. *Journal of Business & Financial Affairs*, 6(4), 1-5. <https://doi.org/10.4172/2167-0234.1000298>
41. Shleifer, A. & Vishny, R. W. (1992). Liquidation values and debt capacity: A market equilibrium approach. *Journal of finance*, 47(4), 1343-1366. <https://doi.org/10.1111/j.1540-6261.1992.tb04661.x>
42. Stulz, R. (1990). Managerial Discretion and Optimal Financing Policies. *Journal of Financial Economics*, 26, 3-27. [https://doi.org/10.1016/0304-405X\(90\)90011-N](https://doi.org/10.1016/0304-405X(90)90011-N)
43. Stundžiene, A., & Boguslauskas, V. (2006). Valuation of Bankruptcy Risk for Lithuanian Companies. *Economics of Engineering Decisions*, 4(49), 1392-2785. Retrieved from <https://inze.ktu.lt/index.php/EE/article/view/11429>
44. Sufi, A. (2009). Bank Lines of Credit in Corporate Finance: An Empirical Analysis. *The Review of Financial Studies*, 22(3), 1057-1088. Retrieved from <https://ideas.repec.org/a/oup/rfnst/v22y2009i3p1057-1088.html>
45. Thaicharoen, S., Meunrat, S., Leng-Ee, W., Koyadun, S., Ronnasiri, N., Iamsirithaworn, S., Chaifoo, W., Tulalamba, W., & Viprakasit, V. (2023). How Thailand's tourism industry coped with COVID-19 pandemics: A lesson from the pilot Phuket Tourism Sandbox project. *Journal of Travel Medicine*, 30(5), taac151. <https://doi.org/10.1093/jtm/taac151>
46. The Nation Thailand. (2024, March 5). *SET-listed firms' net profit drops 3.7% in 2024 on higher costs*. Retrieved from <https://www.nationthailand.com/business/trading-investment/40047365>
47. The Stock Exchange of Thailand. (2024). *Sustainability Management Process*. Retrieved from <https://set-sustainability.com/page/sustainability-management-process>
48. Titman, S., & Wessels, R. (1988). The Determinants of Capital Structure Choice. *Journal of Finance*, 43(1), 1-19. <https://doi.org/10.1111/j.1540-6261.1988.tb02585.x>
49. Vlora, P., Iliriana, M., & Leke, P. (2024). The impact of capital structure on company performance: Empirical evidence from Kosovo. *Romanian Journal of Economic Forecasting*, 27(1), 87-102. Retrieved from [https://ipe.ro/new/rjef/rjef1\\_2024/rjef1\\_2024p87-102.pdf](https://ipe.ro/new/rjef/rjef1_2024/rjef1_2024p87-102.pdf)
50. Wongyai, S., Chaiyakhet, N., & Neerapattanakun, D. (2017). The relationship between capital structure and firm value: A case study of listed companies in the Stock Exchange of Thailand. *KKBS Journal of Business Administration and Accountancy*, 1(3), 1-17. Retrieved from <https://so04.tci-thaijo.org/index.php/kkbsjournal/article/view/161227>
51. World Bank. (2022). *World Development Report 2022 Finance for an Equitable Recovery*. Retrieved from <https://www.worldbank.org/en/publication/wdr2022>