The Impact of Capital Structure on profitability: Empirical analysis of non-financial companies listed on Bursa Malaysia

تأثير هيكل رأس المال على الربحية: تحليل تجريبي للشركات غير المالية المدرجة في بورصة ماليزيا

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Abstract:

The paper examines the different effects of capital structure on the profitability of the 100 largest non-financial companies listed on Bursa Malaysia for the period 2017-2020. The panel data was used in STATA 15.0 software. Driscoll/Kray and the panel-corrected standard errors (PCSE) were also selected to address econometric problems and to improve the accuracy of the regression coefficients. In this paper, profitability is measured by return on assets and return on equity).

The relationship between TL (Total Debt on Total Assets) and ROA and ROE is not significant. CL (Short Term Debt on Total Assets) had a significant positive relationship with return on assets but no significant relationship with ROE. LIQ (liquidity) is also significantly negatively correlated with return on assets and significantly positively with return on equity.

This guide provides new insight to corporate managers on how to improve profitability through their capital structure.

***Key words**: capital structure; profitability; Panel data; long-term debt; short-term debt; liquidity.*

الملخص:

تبحث الورقة في التأثيرات المختلفة لهيكل رأس المال على ربحية أكبر 100 شركة غير مالية مدرجة في بورصة ماليزيا للفترة 2017-2020. تم استخدام بيانات البانل في برنامج STATA 15.0. كما تم اختيار Driscoll / Kray ولوحة تصحيح الأخطاء المعيارية (PCSE) لمعالجة مشكلات الاقتصاد القياسي ولتحسين دقة معاملات الانحدار. في هذه الورقة، يتم قياس الربحية من خلال العائد على الأصول والعائد على حقوق الملكية.

العلاقة بين TL (إجمالي الدين على إجمالي الأصول) مع ROA وROE ليست مهمة. أما CL (الدين قصير الأجل على إجمالي الأصول) كانت له علاقة إيجابية كبيرة مع العائد على الأصول ولكن لا توجد علاقة مهمة مع (ROE).كما يرتبط LIQ (السيولة) بشكل سلبي بشكل كبير بالعائد على الأصول وبشكل إيجابي بشكل هام مع العائد على حقوق الملكية.

يقدم هذا الدليل نظرة ثاقبة جديدة لمديري الشركات حول كيفية تحسين الربحية من خلال هيكل رأس المال الخاص بهم.

الكلمات الأساسية: هيكل رأس المال؛ الربحية؛ بيانات البانل؛ ديون طويلة الأجل؛ ديون قصيرة الأجل؛ السيولة.

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1. INTRODUCTION

Capital structure is one of the most essential considerations in corporate finance, which refers to how a firm funds its assets by mixing obligations and equity (Gul & Cho, 2019). Business success is inextricably linked to the right finance mix; if debt financing is not used effectively, it can lead to bankruptcy (Thomas, 2013). Choosing a company's capital structure is critical. The choice is important because of the revenue optimization requirements of many organizational components and its impact on a company's ability to cope with its competitive environment. The company's capital structure consists of several securities. Generally, the company can choose from a variety of capital arrangements. Where you can issue a large amount of debt or a small amount of debt. It can also arrange lease financing, issue convertible bonds, execute futures contracts, and commercial bond swaps. It can also issue hundreds of different securities in an infinite number of combinations, however, it is looking for a specific combination that increases its overall market value. Several ideas have been proposed to explain the structure of business capital. Despite the theoretical appeal of capital structure, financial management scholars have yet to determine the best capital structure. Academics and practitioners were only able to provide prescriptions that address short-term goals. For example, the lack of agreement on what constitutes an ideal capital structure has led to the necessity of this research. A deeper understanding of the issues at hand requires a look at the idea of capital structure and its impact on the profitability of the company (Abor, 2005).

Business success is inextricably linked to the right finance mix; if debt financing is not used effectively, it can lead to bankruptcy (Thomas, 2013).

The link between capital structure and profitability cannot be overlooked since increasing profitability is critical to the company's long-term existence. Because debt interest is tax deductible, increasing debt to the capital structure will increase the company's profitability. To make appropriate capital structure decisions, it is necessary to assess the link between the capital structure and the firm's profitability.

We were inspired to conduct this research since there is no agreement on what constitutes the ideal capital structure in non-financial enterprises. To have a better grasp of the problems at hand, consider the notion of capital structure and how it affects a company's profitability.

From the above we pose the following problem: " What is the impact of the capital structure on the profitability of non-financial companies listed on Bursa Malaysia?"

This research focuses on whether the capital structure (Total Debt On Total Assets, short-term debt on total assets, and liquidity) affects the profitability of non-financial companies listed on Bursa Malaysia. The following questions about capital structure are addressed to understand the impact of capital structure on the profitability of the company:

- Does Total Debt On Total Asset affect profitability?
- Does short-term debt on total assets affect profitability?
- Does liquidity affect profitability?

The main objective of this study is to provide a comprehensive study of the impact of capital structure and corporate profitability in the 100 largest non-financial companies listed on Bursa Malaysia after the establishment of the Malaysian Corporate Governance Act 2017. The main objectives of this paper are:

- establish evidence of a link between capital structure and corporate profitability of non-financial firms listed on the Malaysian Stock Exchange and give suggestions to management agencies, business managers, and other interested parties.

- Studying the nature of the relationship between capital structure and corporate profitability in the non-financial sector after the issuance of the Malaysian Corporate Governance Law 2017.

The rest of the study was organized as follows. Section 2 explains the literature review and discusses hypothesis development. The research design is discussed in Section 3. Section 4 discusses the experimental results. The section reviews the results, Section 5 presents the conclusion of the research and offers some suggestions.

2. Literature Review

The capital structure literature gives insight into the optimal capital structure, which may be described as a debt-equity combination that optimizes business value while minimizing the cost of capital(Ehrhardt & Brigham, 2003).

Capital structure theories are classified into two types:

The first group includes agency theory(Jensen & Meckling, 1976), trade-off theory (Baxter, 1967; Kraus & Litzenberger, 1973), and free cash flow theory (Jensen, 1986) as examples of capital structure theories (target leverage). The second group includes the money stock market timing theory (Baker & Wurgler, 2002) and order theory(Myers & Majluf, 1984), which do not presuppose the optimal amount of debt.

The link between capital structure and firm value has long been a source of contention. According to Brealey and Myers (2003), the choice of capital structure is a marketing challenge. They claim that the corporation can issue hundreds of different securities in an infinite number of combinations, but it tries to discover the specific combination that maximizes market value.

The ideal capital structure, according to Weston and Brigham (1992), is the one that maximizes the market value of the firm's outstanding shares. The pioneering study on the capital structure by Modigliani and Miller (1958) offered a significant boost in the creation of the theoretical framework within which other theories were going to emerge in the future. Modigliani and Miller (1958) ended with the widely accepted notion of "capital structure irrelevance," which states that financial leverage does not affect a firm's market value. Tir's idea, however, was founded on highly limited assumptions that do not hold in reality.

A company's capital structure is made up of several securities. In general, companies can select from a variety of capital arrangements. Firms can, for example, arrange lease financing, issue convertible bonds, sign forward contracts, or trade bond swaps. Firms can also issue hundreds of different securities in an infinite number of combinations to optimize total market value (Abor, 2005).

Bankruptcy expenses are the direct costs spent when the anticipated chance of the corporation defaulting on funding exceeds zero. The likelihood of bankruptcy grows with debt level because it increases the risk that the firm will not be able to produce revenues to pay back the interest and loans. The expenses of bankruptcy may be both direct and indirect. Direct bankruptcy costs include legal and administrative fees associated with the bankruptcy procedure. Indirect bankruptcy expenses are earnings losses sustained by the firm as a result of stakeholders' refusal to do business with them (Titman, 1984).

According to Andres et al. (2014), an increasing debt ratio will provide a signal about the company's profitability and can lessen information asymmetry between management and investors.

Wald (1999) collected data on enterprises from around forty nations using the 1993 Worldscope data collection. The entire sample size in the United States was over 3,300 enterprises. Wald (1999) discovered a negative link between leverage and profitability using regression analysis.

Furthermore, he discovered a positive association between I business size and profitability, and ii) sales growth and profitability. Mendell, Sydor, and Mishra (2006) conducted a cross-sectional analysis with a sample of 20 forest sector enterprises listed on a US stock market from 1994 to 2003. They discovered a negative link between profitability and debt using regression analysis

Chang, Wang, Lee, and La (2014) investigated the association between financial structure and performance of non-financial enterprises listed on the Ho Chi Minh Stock Exchange in Vietnam from 2007 to 2011. This period encompasses the period preceding, during, and following the global economic crisis, which began in the United States before spreading to other nations. The paper estimated profitability using ROA, ROE, Tobin'Q (the market price of equity + book value of liabilities divided by total assets), and MBVR (market to book value ratio). Financial structure is determined by the ratios of short-term debt, long-term debt, and overall debt to total assets. Firm size, fixed asset ratio to total assets, and corporate income tax rate are all control factors.

To conclude on the link between capital structure and performance, the authors used FEM,

REM, and OLS regression approaches, as well as the Hausman test. They discovered a link between debt (including short-term, long-term, and overall debt) and ROA. In all types of capital structures, firm size is statistically connected to ROA. The fixed-to-total-assets ratio and ROA have a negative association.Abor & Joshua (2005) studied 22 corporations listed on the Ghana Stock Exchange for five years (1998-2002). He discovered a positive relationship between the ratio of short-term debt to total assets and return on equity, a negative relationship between the ratio of long-term debt to total assets and return on equity, and a positive relationship between the ratio of total debt to total assets and return on equity.

Calcagnini, Favaretto, and Giombini (2011) found that the bulk of capital employed by innovative Italian enterprises came from internal sources, with external equity accounting for only 20%. When compared to enterprises in other industries, these firms do not see debt as a primary source of capital Calcagnini et al (2011). This is an intriguing argument since creative organizations frequently aim to use stock investors and venture money to reduce debt utilization.

2.1 The effect of total debt on total assets on profitability

The total debt to total asset ratio is used to calculate the amount of long-term debt in a corporation's capital structure (Hanafi, 2016).

The total debt to total asset ratio is calculated by dividing total debt by total assets (Munawir, 2014). This ratio is used by businesses to get fresh loans since it contains the value of security assurances for creditors in the long term.

The total debt to total assets ratio provides investors with an insight into a company's financial strength and capital structure, as well as how it funds its operations. In general, the smaller this ratio, the lesser the financial risk to the firm. A larger ratio indicates a riskier finance arrangement and a higher danger of insolvency and bankruptcy. Several studies have examined this relationship, including Mahfuzah and Raj (2012), Logavathani and Lingesiya (2018), and Nguyen T.H and Nguyen H.A (2020), who concluded that the ratio of total debt to total assets is inversely proportional to business performance, i.e., increasing the debt ratio would result in less profitable businesses. Other research, on the other hand, reveals a positive association (Arbabiyan & Safari, 2009), no correlation, (Chang, Wang,et al., 2014; Prahalathan & Ranjani, 2011) or a weak correlation (Khan, 2012) between these parameters.

We can suggest the following hypothesis:

H1: The ratio of total debt to total assets is inversely related to the performance of Malaysian listed corporations.

2.2 The effect of short-term debt on total assets and profitability

Liabilities are divided into two types: short-term debts and long-term obligations (Nguyen, T.H; Nguyen, H.A, 2020).

Over time, academics have identified several elements that impact or decide capital structure or financing decisions, as well as the financial success of businesses. In general, businesses finance a portion of their assets with equity capital and the remainder with other resources such as long-term debts and short-term debts. Enterprises can pick from a variety of capital arrangements, such as arranging lease financing, using warrants, issuing bonds, or trading bond swaps. Enterprises also issue various capital structures in endless combinations, which impact their entire market worth (Abor, 2005).

In theory, businesses that use short-term debt must repeat the cycle of repaying existing loans and borrowing new ones on a frequent basis. Short-term debts are volatile in terms of capital utilization because they are subject to market interest rates. Long-term interest rates, on the other hand, are more stable (Nguyen, T.H; Nguyen, H.A, 2020). Abor (2005), (Arbabiyan & Safari, 2009), discovered a favorable relationship between the ratio of short-term debt to total assets and firm performance. Meanwhile, Chang, et al (2014) found that the short-term debt-to-total-assets ratio is inversely connected to ROE.

We can suggest the following hypothesis:

H2: There is a negative relationship between the ratio of short-term debt to total assets and the profitability of listed companies of Malaysian listed corporations.

2.3 The effect of liquidity on profitability

Most indicators used to analyze liquidity (such as liquidity ratios and cash conversion cycle) are derived from working capital components, hence liquidity management is generally viewed through the lens of working capital management. Liquidity ratios represent a company's financial elements, including current assets and current obligations. However, the cash conversion cycle mainly shows the firm's operational side, focusing on receivables, payables, and inventory (Mun, S. G & Jang, S, 2015).

Decisions on asset management should not clash with the firm's core goal: to maximize shareholder value. The selection of an appropriate amount of liquidity is a critical component of asset management. Liquidity, or a business's capacity to satisfy its short-term obligations, is critical to its effective operation as a profitable firm. As a result, indications of liquidity and profitability are critical to both shareholders and potential investors. In theory, liquidity and profitability goals are thought to be mutually exclusive.The purpose of liquidity management should be to enable a company to maximize earnings while fulfilling both short-term debt and impending operating needs, i.e. to preserve liquidity (Panigrahi, 2014).

To attain this purpose, the corporation should, on the one hand, reduce the danger of being unable to satisfy its short-term commitments, while avoiding excessive investments in current assets on the other (Eljelly, 2004).

Excessive liquidity investments may cause managers to undertake investments aimed at boosting their personal utility, at the expense of profitability (Fama & Jensen, 1983).

Ghosh and Maji (2003) found that liquidity has a statistically positive effect on profitability in the cement and tea industries in India, Muhammad et al. (2012) in the textile industry in Pakistan, , and Rehman et al. (2015) in companies listed on the Saudi Stock Exchange, and Ehiedu (Ehiedu, 2014) in manufacturing companies listed on the Nigerian Stock Exchange.

The empirical findings of Bardia (2004) on the Indian steel manufacturing industry, Eljelly (2004) on a sample of Saudi joint stock companies, and (Saldanlı, 2012) on Turkish manufacturing enterprises show that liquidity has a statistically negative influence on profitability.

However, no statistically significant relationship between the current ratio and profitability has been found in studies conducted by Afeef (2011) on Karachi Stock Exchange-listed manufacturing firms and Sur and Chakraborty (2011) on selected multinational firms in the Indian pharmaceutical industry.

From the above, we propose the following hypothesis:

H3: There is a statistically significant relationship between the ratio of liquidity and profitability of non-financial companies listed in Malaysia.

3.RESEARCH DESIGN

3.1 Sample data

This study's population comprises of the top 100 non-financial enterprises listed on the Bursa Malaysia.

The Thomson database was used to evaluate the profitability of non-financial firms listed on the Bursa Malaysia from 2017 to 2020.

The year 2017 was chosen since it was the year in which the MCCG review was conducted. The use of the top 100 organizations as a sample in this study is expected to yield a clear and complete conclusion.

The financial industry is excluded from the research since enterprises in this area are subject to a particular set of laws and regulations, rendering them incomparable to firms in other sectors (Abed, Al-Attar, & Suwaidan, 2012).

Table1. Descriptive of Variable Measurement

Name of Variable	Acronym	Measurement	Coefficient Predictions	Data Source
Dependent Variables				
Return on Asset	ROA	Net income divided by book value of total assets.	D.V	Thomson Data Stream
Return on equity	ROE	Net income/Stockholders Equity	D.V	Thomson Data Stream
Independent Variables				
Total debt to total assets	TL	Total Debt/Total Assets	IV	Thomson Data Stream
Short-term debt to total assets	CL	Short Term Debt/Total Assets	IV	Thomson Data Stream
Liquidity	LIQ	Current Assets/Short Term Debt	IV	Thomson Data Stream
Control Variables				
Firm Size	F_SIZE	Logarit (Total Assets)	CV	Thomson Data Stream
Sale growth	SG	(Net Sales - Net Sales -1)/ Net Sales	CV	Thomson Data Stream

Source: Prepared by the researchers

The next depicts the influence of capital structure on profitability. Two models demonstrate the influence of capital structure on profitability:

Model 1 : $ROA_{i,t} = \alpha 0 + \beta 1TL_{i,t} + \beta 2CL_{i,t} + \beta 3iLIQ_{,t} + \beta 4\ F\_SIZE_{i,t} + \beta 5SG_{i,t} + \varepsilon_{i,t}$

Model 2 : $ROE_{i,t} = \alpha 0 + \beta 1TL_{i,t} + \beta 2CL_{i,t} + \beta 3iLIQ_{,t} + \beta 4SIZE_{i,t} + \beta 5SG_{i,t} + \varepsilon_{i,t}$

Where: ROA: Return on asset; ROE: Return on equity; β0: Intercept; TL: Total debt to total assets; CL: Short-term debt to total assets; LIQ: Liquidity **;** SG: Sale growth; F_SIZE: Firm Size; ε: Error term.

4. RESULTS AND DISCUSSION

After following the necessary steps for statistical processing in the STATA 15.0 program, we reached the following results:

4.1 Descriptive statistics

Dependent variables are measured using two different, return on assets (ROA) and the other, return on equity (ROE).

As shown in Table (2), the average ROA and ROE for companies are 7.734 and 14.854 with a maximum value of 46.1, 75.98, and minimum values of (-35.23) and (-7.16), respectively.

Moreover, the average value of Total debt to total assets is 5.469, with a maximum value of 31.475 and a minimum value of 0. average CL and S_growth for firms are 0.085 and 0.038 with maximum values of 0.355, 0.4, and minimum values of 0 and -0.325, respectively.

Moreover, the average value of F_size is 6.554, with a maximum value of 8.26 and a minimum value of 5.01.

Based on the final sample of 100 companies, the average LIQ is 36.593 with a minimum of 0 members and a maximum of 380.16 members.

To address the outliers, we used (Winsorize) for these variables in the first five and ninety-fifth percentiles, for each of ROE, TL, CL, S_growth, LQ.

Table 2. Descriptive Statistics

	Obs	Mean	Std. Dev.	min	max
ROA	400	7.734	9.069	-35.23	46.1
ROE	400	14.854	18.956	-7.16	75.98
TL	400	5.469	7.653	0	31.475
CL	400	.085	.093	0	.355
S_growth	400	.038	.178	-.325	.4
F_size	400	6.554	.706	5.01	8.26
LIQ	400	36.593	89.833	0	380.16

NOTE: ROA: Return on assets , ROE: Return On Equity, TL: Total Debt/Total Assets, CL: Short Term Debt/Total Assets, S_growth: Sale growth, F_size: Firm Size, LIQ: Liquidity.

Source: Prepared by the two researchers based on STATA 15.0 output.

4-2 Correlation of the Study Variables

Table 3. Correlation of the Study Variables

Variables	ROA	ROE	TL	CL	S_growth	F_size	LQ
ROA	**1.000**						
ROE	0.828***	**1.000**					
TL	-0.115***	-0.067	**1.000**				
CL	0.092*	0.152***	-0.263***	**1.000**			
S_growth	0.178***	0.126**	-0.048	0.094*	**1.000**		
F_size	-0.331***	-0.234***	0.205***	-0.017	-0.117**	**1.000**	
LQ	-0.002	-0.049	0.214***	-0.328***	0.058	-0.183***	**1.000**

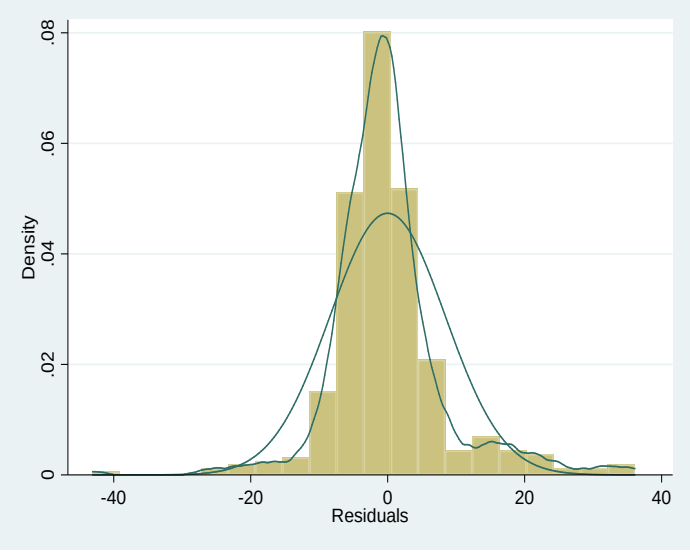
Source: *Prepared by the two researchers based on STATA 15.0 output.*

Table 3 displayed the correlation matrix results, which revealed that none of the coefficients were more than 0.9, as stated by Hair et al., (2014). Correlation coefficients, in particular, do not suffer multi-line difficulties.

Table 3 clearly demonstrates that ROA and ROE have a negative connection with TL, which likewise has a negative association with F SIZE and LIQ. While CL and S_growth have a positive association with both ROA and ROE.

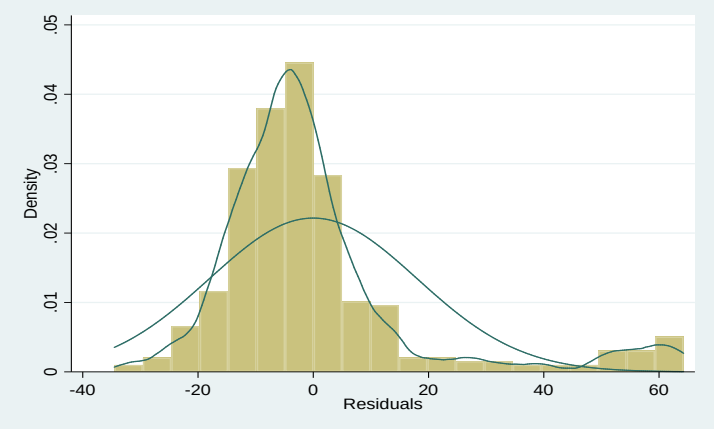
4.3 Normal state test

Figure 1: Residual Plot histogram for return on assists (ROA)



Source: Prepared by the two researchers based on STATA 15.0 output.

Figure 2: Residual Plot histogram for return on equity (ROE)



Source: Prepared by the two researchers based on STATA 15.0 output.

The normality test is used to determine if confounding or residual variables in the regression model have a normal distribution of data (Ghozali, 2011). The graphical analysis approach was used to perform the normality test in this study.

Figure 1 shows the results of histogram test. Figure 1 depicts the normality test findings, which reveal that the histogram graph presents a normal data distribution pattern.

4.4 Multicollinearity Test

The multicollinearity test determines whether or not there is a relationship between the independent variables in the regression model. A good model should have a low correlation with other independent variables.

Table4. Multicollinearity Test

Model	Collinearity Statistics		Information
	VIF	Tolerance	
LQ	1.22	0.821786	There is no multicollinearity
CL	1.19	0.842861	
TL	1.17	0.858354	
F_size	1.12	0.895649	
S_growth	1.03	0.972375	
Mean VIF	1.14		

Source: Prepared by the two researchers based on STATA 15.0 output.

According to the data in table 4, there is no multicollinearity.

The following tables shows the regression results for both models after correction:

Table 5: Main Regressions Results Driscoll/Kraay for Model 1 (Dependent variable = ROA)

Drisc/Kraay				
	ROA			
Variables	**Coef.**	**Std.Err.**	**t**	**P>t**
TL	-0.023	0.024	-0.930	0.355
CL	5.153**	2.232	2.310	0.023
S_growth	7.008***	1.321	5.300	0.000
F_size	-4.088***	0.342	-11.940	0.000
LQ	-0.005**	0.002	-2.100	0.038
R Square	0.1369			
prob>F	0.0000			
Breusch and Pagan LM test	0.0000			
Hausman test	0.0155			
Modified Wald Heteroskedasticity	0.0000			
Wooldridge Autocorrelation	0.1960			
Pesaran's cross sectional independence	0.0000			
Notes: The definitions of the variables are in Section 4.1. t-statistics are based on Driscoll/Kraay.*** ,** and * represent statistically significant at the p < 1%, 5%, and 10% levels, respectively.				

Source: Prepared by the two researchers based on STATA 15.0 output.

Table 6: Main Regressions Results (PCSEs) for Model 2 (Dependent variable = ROE)

Panel-corrected				
	ROE			
Variables	**Coef.**	**Std.Err.**	**T**	**P>t**
TL	0.061	0.071	0.85	0.394
CL	15.085	10.229	1.47	0.140
S_growth	-5.727***	0.719	-7.96	0.000
F_size	-.014**	0.006	-2.43	0.015
LQ	50.971***	4.907	10.39	0.000
R Square	0.1796			
prob>F	0.0000			
Breusch and Pagan LM test	0.0000			
Hausman test	0.4184			
Modified Wald Heteroskedasticity	0.0000			
Wooldridge Autocorrelation	0.0003			
Pesaran's cross sectional independence	0.0000			
Notes: The definitions of the variables are in Section 4.1. t-statistics are based on panel-corrected standard error (PCSE).*** ,** and * represent statistically significant at the p < 1%, 5%, and 10% levels, respectively.				

Source: Prepared by the two researchers based on STATA 15.0 output.

The Breusch-Pagan/Cook-Weisberg test rejects the null hypothesis that error term variance is free of covariance (X2 = 50.27, p-value = 0.0000 for the ROA model and X2 = 34.68, p-value = 0.0000 for the ROE model). Furthermore, the Wooldridge test accepts the null hypothesis of no first-order autocorrelation (F = 1.694, p-value = 0.1961 for the ROA model and rejects the null hypothesis of no first-order autocorrelation F = 14.011, p-value = 0.0003 for the ROE model). In the first ROA model, we employed ordinary least squares (OLS) with Drisc/Kray to compensate for the problem of variable elasticity, autocorrelation, and cross-section dependency, and the panel corrected the standard error (PCSE) in the ROE.

The beta coefficient of the TL variant (-0.023) was not statistically significant, (ROA: β = -0.023, P = 0.355), and it was also found that the beta coefficient of the TL variant was not statistically significant in the ROE, where: (ROE: β = 0.061, P = 0.394), this is in agreement with (Chang, Wang, et al., 2014; Prahalathan & Ranjani, 2011), who did not find strong evidence for this relationship.

The beta coefficient of the CL variable was (-5.153) negative and statistically significant, (ROA: β = -5.153, P = 0.023). and it was also foundwith Chiang beta coefficient of the CL variable was not statistically significant in the ROE, where: (ROE: β = 15.085, P = 0.140).

The LIQ variable's beta coefficient (-0.005) was negative and statistically significant at the 0.05 level (p 0.05), (ROA: = -0.005, P = 0.038), which is consistent with This result is consistent with the theoretical argument that profitability and liquidity are generally assumed to be mutually exclusive, as well as the arguments of Fama and Jensen (1983), Myers and Rajan (1995), Adams (1996) that higher liquidity may lead managers to make investments to maximize their own benefit, at the expense of profitability.

The LIQ variable's beta coefficient (-0.005) was positive and statistically significant at the 0.01 level (p 0.01) (ROA: = 50.971, P = 0.000), which is consistent with Deloof (2003) and Goddard et al (2005).

While Deloof (2003) finds that more liquidity helps enterprises to easily satisfy their short-term obligations without incurring additional costs, resulting in higher profitability, Goddard et al (2005) suggest that higher liquidity allows firms to capitalize on advantageous investment opportunities.

5. CONCLUSION

This study explores the link between the capital structure and profitability of the 100 largest non-financial companies listed on Bursa Malaysia between 2017 and 2020.

The results of the current study give a basic understanding of the relationship between capital structure and profitability in the best non-financial companies listed on the main market of Bursa Malaysia.

The primary objective of this research is to study how total debt versus total assets affects profitability. The idea that "there is a negative correlation between total debt over total assets rather than profitability" was the basis for reaching the goal. As a result, in this study, TL (total debt over total assets) shows a non-significant negative and positive relationship with ROA and ROE.

The achievement of the second objective was based on the argument that short-term debt has a negative relationship with total assets and profitability. CL(short-term debt on total assets) had a significant positive association with ROA and a non-significant positive association with ROE.

In achieving the third objective, emphasis was placed on highlighting the importance of liquidity and profitability.

In this paper, research LIQ (liquidity) had a significant negative correlation with return on assets and a significant positive correlation with return on equity.

This study could assist future interest-based studies and highlight some possibilities for overcoming the limitations of this study. The following suggestions were emphasized:

The samples in this study are limited to the non-financial sector of companies listed on Bursa Malaysia. In fact, Bursa Malaysia has several different sectors. As a result, the result may differ from the result in another industry in Malaysia.

Regardless, there is a problem with companies that use different accounting standards. Moreover, the annual closing account period varies for each company. The accuracy of the result will be affected by different accounting practices and the annual closing account period for comparison. To get a more accurate and convincing conclusion, time series data should be collected over a longer period of time.

Furthermore, more fresh capital structure and profitability factors may be accommodated in the model to provide more thorough findings. Furthermore, in order to eliminate biases in the research, the study should be conducted for the period inside a fixed economic situation by defining the exact time period before and during the crisis.

In future research, the influence of liquidity on profitability in a broader range of businesses might be examined by concentrating on the operational aspect of liquidity management as well.

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7. Appendices

Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	400	7.734	9.069	-35.23	46.1
ROE	400	16.059	36.68	-311.3	284.53
TL	400	7.011	16.167	0	209.95
CL	400	.559	4.782	0	65.05
S growth	400	.108	1.122	-1	21.72
F size	400	6.554	.706	5.01	8.26
LQ	400	276.789	3334.169	0	65683.25

Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) ROA	1.000						
(2) ROE	0.828	1.000					
	(0.000)						
(3) TL	-0.115	-0.067	1.000				
	(0.022)	(0.180)					
(4) CL	0.092	0.152	-0.263	1.000			
	(0.067)	(0.002)	(0.000)				
(5) S_growth	0.178	0.126	-0.048	0.094	1.000		
	(0.000)	(0.012)	(0.340)	(0.061)			
(6) F_size	-0.331	-0.234	0.205	-0.017	-0.117	1.000	
	(0.000)	(0.000)	(0.000)	(0.736)	(0.019)		
(7) LQ	-0.002	-0.049	0.214	-0.328	0.058	-0.183	1.000
	(0.962)	(0.332)	(0.000)	(0.000)	(0.248)	(0.000)	

Linear regression

ROA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
TL	-.023	.06	-0.38	.705	-.14	.095	
CL	5.153	4.968	1.04	.3	-4.615	14.921	
S_growth	7.008	2.416	2.90	.004	2.259	11.756	***
F_size	-4.088	.635	-6.43	0	-5.337	-2.839	***
LQ	-.005	.005	-0.91	.363	-.015	.005	
Constant	34.118	4.215	8.10	0	25.832	42.404	***

Mean dependent var	7.734	SD dependent var	9.069
R-squared	0.137	Number of obs	400
F-test	12.499	Prob > F	0.000
Akaike crit. (AIC)	2851.182	Bayesian crit. (BIC)	2875.131

*** p<.01, ** p<.05, * p<.1*

Regression results (fixed ifect)

ROA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
TL	-.141	.074	-1.90	.059	-.287	.005	*
CL	-12.69	8.569	-1.48	.14	-29.553	4.173	
S_growth	10.665	1.683	6.34	0	7.353	13.977	***
F_size	4.951	3.309	1.50	.136	-1.561	11.463	
LQ	-.005	.005	-0.90	.366	-.014	.005	
Constant	-23.111	21.68	-1.07	.287	-65.779	19.556	

Mean dependent var	7.734	SD dependent var	9.069
R-squared	0.134	Number of obs	400
F-test	9.142	Prob > F	0.000
Akaike crit. (AIC)	2331.395	Bayesian crit. (BIC)	2355.344

*** p<.01, ** p<.05, * p<.1*

Regression results (random ifect)

ROA	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
TL	-.099	.063	-1.57	.116	-.222	.024	
CL	-2.695	6.193	-0.44	.663	-14.832	9.443	
S_growth	9.856	1.66	5.94	0	6.602	13.111	***
F_size	-3.172	1.014	-3.13	.002	-5.16	-1.184	***
LQ	-.005	.005	-1.00	.316	-.014	.004	
Constant	29.082	6.69	4.35	0	15.97	42.193	***

Mean dependent var	7.734	SD dependent var	9.069
Overall r-squared	0.124	Number of obs	400
Chi-square	51.965	Prob > chi2	0.000
R-squared within	0.113	R-squared between	0.128

*** p<.01, ** p<.05, * p<.1*

```
Breusch and Pagan Lagrangian multiplier test for random effects

        ROA[COMP,t] = Xb + u[COMP] + e[COMP,t]

        Estimated results:
                         |       Var     sd = sqrt(Var)
                ---------+------------------------------
                     ROA |    82.25347        9.06937
                       e |    26.18272       5.116905
                       u |     46.2543       6.801051

        Test:   Var(u) = 0
                             chibar2(01) =   228.15
                          Prob > chibar2 =   0.0000
```

Hausman (1978) specification test

```
                 ---- Coefficients ----
                    (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
                fixed_effe~l random_eff~l    Difference          S.E.
-------------------------------------------------------------------------------
          TL |   -.1407413    -.0989523       -.041789        .0392258
          CL |   -12.69022    -2.694578      -9.995638        5.922169
    S_growth |    10.66511     9.856434       .8086798        .2743607
      F_size |    4.950907    -3.172054        8.12296        3.149608
          LQ |    -.004511     -.004604       .000093        .0019375
-------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =       14.02
                Prob>chi2 =      0.0155
```

vif

Variable	VIF	1/VIF
LQ	1.22	0.821786
CL	1.19	0.842861
TL	1.17	0.858354
F_size	1.12	0.895649
S_growth	1.03	0.972375
Mean VIF	1.14	

Autocorrelation

```
.  xtserial ROA TL CL S_growth F_size LQ

Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
    F(  1,      99) =      1.695
           Prob > F =      0.1960
```

Pesaran's test

```
Pesaran's test of cross sectional independence =     4.523, Pr = 0.0000

Average absolute value of the off-diagonal elements =     0.498
```

Heteroscedasticity

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of ROA

         chi2(1)      =    50.63
         Prob > chi2  =   0.0000
```

Regression with Driscoll-Kraay standard errors

Regression with Driscoll-Kraay standard errors Number of obs = 400
Method: Pooled OLS Number of groups = 100
Group variable (i): COMP F(5, 99) = 319.54
maximum lag: 1 Prob > F = 0.0000
R-squared = 0.1369
Root MSE = 8.4790

Drisc/Kraay

ROA	Coef.	Std.Err.	t	P>t	[95%Conf.	Interval]
TL	-0.023	0.024	-0.930	0.355	-0.071	0.026
CL	5.153	2.232	2.310	0.023	0.723	9.582
S_growth	7.008	1.321	5.300	0.000	4.386	9.629
F_size	-4.088	0.342	-11.940	0.000	-4.768	-3.409
LQ	-0.005	0.002	-2.100	0.038	-0.009	-0.000
_cons	34.118	2.363	14.440	0.000	29.429	38.808

Linear regression

ROE	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
TL	.083	.129	0.64	.521	-.17	.336	
CL	26.021	10.675	2.44	.015	5.034	47.009	**
S_growth	9.671	5.19	1.86	.063	-.533	19.875	*
F_size	-6.439	1.365	-4.72	0	-9.123	-3.755	***
LQ	-.013	.011	-1.19	.236	-.035	.009	
Constant	54.509	9.056	6.02	0	36.705	72.313	***

Mean dependent var	14.854	SD dependent var	18.956
R-squared	0.088	Number of obs	400
F-test	7.593	Prob > F	0.000
Akaike crit. (AIC)	3463.054	Bayesian crit. (BIC)	3487.003

**** p<.01, ** p<.05, * p<.1*

Regression results (fixed ifect)

ROE	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
TL	-.045	.111	-0.40	.687	-.263	.174	
CL	-20.414	12.816	-1.59	.112	-45.638	4.809	
S_growth	18.505	2.517	7.35	0	13.551	23.459	***
F_size	6.048	4.949	1.22	.223	-3.692	15.788	
LQ	-.007	.007	-0.99	.323	-.022	.007	
Constant	-23.247	32.428	-0.72	.474	-87.067	40.573	

Mean dependent var	14.854	SD dependent var	18.956

R-squared	0.158	Number of obs	400
F-test	11.073	Prob > F	0.000
Akaike crit. (AIC)	2653.503	Bayesian crit. (BIC)	2677.452

*** p<.01, ** p<.05, * p<.1

Regression results (random ifect)

ROE	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
TL	-.02	.103	-0.19	.847	-.223	.183	
CL	-4.73	10.975	-0.43	.666	-26.24	16.78	
S_growth	17.579	2.516	6.99	0	12.648	22.511	***
F_size	-3.758	2.221	-1.69	.091	-8.112	.595	*
LQ	-.008	.007	-1.11	.267	-.022	.006	
Constant	39.613	14.66	2.70	.007	10.88	68.345	***

Mean dependent var	14.854	SD dependent var	18.956
Overall r-squared	0.054	Number of obs	400
Chi-square	53.202	Prob > chi2	0.000
R-squared within	0.143	R-squared between	0.039

*** p<.01, ** p<.05, * p<.1

Hausman (1978) specification test

	Coefficients (b) random_eff~l	(B) fixed_effe~l	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
TL	-.0200152	-.0447866	.0247714	.
CL	-4.729934	-20.41438	15.68445	.
S_growth	17.57905	18.50517	-.9261142	.
F_size	-3.75823	6.047857	-9.806088	.
LQ	-.0080337	-.0073836	-.0006502	.

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 4.98
Prob>chi2 = 0.4184

Autocorrelation

Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
F(1, 99) = 14.192
Prob > F = 0.0003

Pesaran's test

Pesaran's test of cross sectional independence = 4.420, Pr = 0.0000

Average absolute value of the off-diagonal elements = 0.504

Heteroscedasticity

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of ROE

         chi2(1)      =    34.85
         Prob > chi2  =   0.0000
```

Prais-Winsten regression, correlated panels corrected standard errors (PCSEs)

ROE	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
TL	.061	.071	0.85	.394	-.079	.2	
CL	15.085	10.229	1.47	.14	-4.963	35.133	
S_growth	14.843	2.469	6.01	0	10.004	19.682	***
F_size	-5.727	.719	-7.96	0	-7.137	-4.317	***
LQ	-.014	.006	-2.43	.015	-.025	-.003	**
Constant	50.971	4.907	10.39	0	41.354	60.588	***

Mean dependent var	14.854	SD dependent var	18.956
R-squared	0.180	Number of obs	400
Chi-square	150.124	Prob > chi2	0.000

**** p<.01, ** p<.05, * p<.1*